Mt. Rose Scenic Byway
Interpretive Plan

Discover the Mt. Rose Scenic Byway…
Your natural connection from
Reno to Lake Tahoe

Mt. Rose Scenic Byway
Interpretive Plan

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Mt. Rose Scenic Byway, Nevada State Route 431is a cooperative project between the Humboldt-Toiyabe National Forest, Washoe County Department of Regional Parks and Open Space, and the Nevada Department of Transportation.

This Plan will better position the Byway for securing funding of interpretive projects. Planners, managers, and interpreters are encouraged to use this Plan when planning and designing new interpretive opportunities. School teachers will find the Plan useful in creating environmental education programs. When funds are available, media (panels, publication, exhibit and audio visual) designers will use the guidance within this Interpretive Plan to design and fabricate the media recommended herein.

Acknowledgements:
Special thanks to the following people who contributed to this Plan:
Humboldt-Toiyabe National Forest: Marnie Bonesteel, Steve Hale, Scott Lamoreux, Elizabeth Bergstrom, Maureen Easton, Carol Ryan, Shelley Hill-Worthen.
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Nevada Bureau of Mines: Kris Pizarro, Jack Hursh, and Joseph Tingley. Cover photo of Mt. Rose by Kris Pizarro, illustrations by Kris Pizarro.

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Executive Summary

Purpose of the Interpretive Plan:

The purpose of this plan is to guide the interpretive development of the Byway, in order to further accomplish the mission, management objectives and resources of the National Forest and Washoe County along the Mt. Rose Scenic Byway in Nevada. The Plan defines the goals, objectives, themes, subthemes, stories, and recommends the media to tell those stories.

This Plan outlines how the Byway will interpret natural, historical, cultural, and recreational resources in an entertaining and educational way. Interpretation is accomplished through panels, exhibits, a visitor center, audio visual productions, publications, and personal services, such as guided interpretive hikes and campfire programs. Interpretation of the Scenic Byway's treasures will foster an appreciation of the area by educating visitors to the significance of the natural and cultural resources. Interpretation answers the question…what makes this Scenic Byway special? Interpretation along the Scenic Byway reveals the stories of past, the present and the future. This interpretation gives the Byway a totally unique character, a personality and life. Interpretation links the person with the place with stories that relate to their personal lives.

The Mt. Rose Scenic Byway Interpretive Plan is a valuable tool to integrate the interpretive and educational efforts of the US Forest Service, Washoe County and other agencies and organizations whose mission is in the conservation of Byway resources.

This Plan incorporates and expands upon the Galena Creek Visitor Center Interpretive Plan and the completed graphic designs for interpretive panels along the Byway. It is the inclusive parent document for all other plans and designs. This Plan evaluates all existing media along the Byway and the Galena Creek Visitor Center Interpretive Plan, identifies gaps in themes, subthemes and stories, and makes recommendations to create a more thematically unified approach to interpretation of the Scenic Byway's stories.

Use of this plan is to guide the development of interpretive media along the Byway. It will ensure that the messages delivered are thematically-driven, reach the intended audience, and reinforce the missions of the cooperating agencies.

Mt. Rose Scenic Byway is a cooperative project between the Humboldt-Toiyabe National Forest, USDA, the Washoe County Department of Regional Parks and Open Space, and Nevada Department of Transportation. The Byway is State Route 431, which has been designated by the State of Nevada as a State Scenic Byway.

Significance of the Mt. Rose Scenic Byway

The Mt. Rose Highway was successfully nominated for state scenic byway status in 1995 by the Incline Village/Crystal Bay Convention and Visitors Bureau and the Washoe County Department of Comprehensive Planning. The nomination was supported by several citizens' advisory boards and the Tahoe Regional Planning Agency. The byway nomination emphasized the route's exceptional scenic beauty as it passes through several ecosystems ranging from high desert to subalpine. Also noted were sites of geological interest, a number of important cultural sites, as well as biological resources that include both rare and endangered plant and animal species.

Historic and Cultural:

The Mt. Rose Scenic Byway corridor has attracted a variety of people and cultures. The Washoe and the Paiute native people, the Comstock Lode miners, the ranchers, the town of Galena, Dr. James E. Church (his snow surveying techniques began on Mt. Rose), skiers (development of alpine skiing at Lake Tahoe started on the Byway), current day hikers, skiers, campers, horseback riders, local residents and tourists.

Scenic and Natural:

The Byway includes views of Mountains, Lake Tahoe, forest, valley views, unusual geology, rare plants and meadows. The Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin. The Byway is also in a transition zone between the Sierra Nevada province and the Basin and Range province. The Byway travels through four life zones and is home to plants and animals that occur only here. Mt. Rose, at 10,776 feet above sea level, is one of the highest peaks in the Carson Range. The Steamboat hills are part of a northeast trending line of four rhyolite domes that erupted between 3 and 1 million years ago. Steamboat hills are one of the many unique indicators of geologic processes that continue to shape the range of the Great Basin and Lake Tahoe. Millions of years of geology relates to the production of geothermal energy and hot springs.

Recreational:

After the acquisition of the 3,700 acre Galena Resort property in 1994, the Byway now passes primarily through public land and offers a paradise of recreational opportunity adjacent to the continually expanding Reno-Sparks urban area. Starting with the Galena Creek Regional Park, passing by Sky Tavern and Mt. Rose winter sports areas, the Byway cuts through the U.S. Forest Service's Humboldt-Toiyabe National Forest and the Lake Tahoe Basin Management Unit before joining the East Shore Scenic Byway (Nevada 28). From the new Welcome Plaza an increasingly popular trail climbs to Mt. Rose summit, which at 10,776 feet is the tallest peak on the north shore of Lake Tahoe. The 165-mile long Tahoe Rim Trail crosses the highway at nearly 9000 feet heading south along the ridgeline overlooking Lake Tahoe and north into the Mt. Rose Wilderness. Tahoe Meadows offers a summer campground, interpretive loop trail, and in the winter is a very popular playground for snow enthusiasts. Offering a respite from the heat of the desert in the summer, and snowfall measured in feet rather than inches, the Byway will continue to grow in importance as a recreational haven for northern Nevada residents and visitors.

Conservation issues:

The Byway is currently a well-recognized natural area in Reno's backyard. Resource management issues are more complicated, and user conflicts intensified in natural areas on the urban/wildland interface. This increases the stewardship responsibilities of tourists and locals. This Interpretive Plan suggests ways to improve the conservation ethics and behaviors along the Byway. The stories of the Washoe and Paiute Native Native peoples, local historic and modern day people will offer visitors inspiring conservation messages.

Overall Byway Theme:

Experience Life along the Mt. Rose Scenic Byway

Main Themes:

1. Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

2. The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

3. Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Budget:

Orientation and Interpretive Media:	**Cost:**
Scenic Byway Map Panels at 10 locations	$ 100,000
Interpretive Panels at 9 different locations (22 panels)	$ 144,000
Audio tape/CD tour program	$ 13,000
Scenic Byway Travelers Guide	$ 43,000
Scenic Byway Brochure	$ 36,000
Multi Media Video Production	$ 70,000
Internet Web Site Development	$ 10,000
GPS Ranger Units and Program	$ 87,000
Promotional Trade Show Display	$ 5,000
Webcam for NDOT Hwy 431 Wayside	$ - FS cost?
Facilities:	
Galena Creek Regional Visitor Center construction	$1,630,000
Visitor Center exhibit design and fabrication	$ 200,000
Visitor Center octo-kiosk	$ 16,000
Total	$2,354,000

Note: Costs for NEPA and agency overhead are not included in this Interpretive Plan and will need to be budgeted by the agencies.
Figures reflect 2007 costs and should be adjusted in future years. The following media are not included in this budget, due to more planning that needs to occur: Galena Schoolhouse exhibits; a/v equipment for Galena Creek Regional Park amphitheatre; trail panels, artifacts, reconstructed Dr. Church cabin, stagecoach, Washoe homesite for Galena Creek Park North Interpretive Loop Trail; Fish
Hatchery panels and exhibits; Galena trail map at camp WeChMe; Trail map, trail stone monument and panel for Browns Creek Trailhead; Mt. Rose Ski Tahoe main lodge new interior exhibits; proposed New Slide Lodge panels; Atoma building interior exhibits; and Incline Lakes proposed interior exhibits.

Location of the Byway

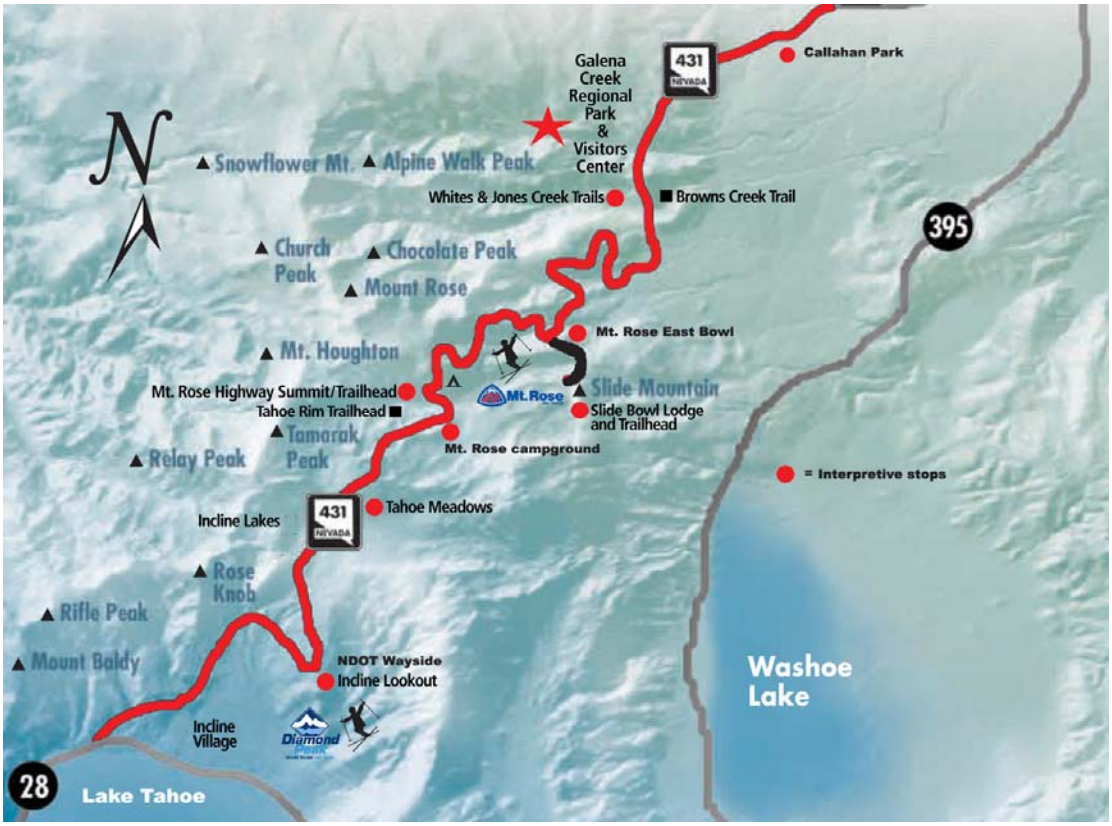
The byway designation covers the entire Mt. Rose Highway (Nevada SR431) from its intersection with U.S. 395 outside Reno to its terminus at Nevada SR28 in the community of Incline Village on the east shore of Lake Tahoe, a total of 24.5 miles. The proportions of land ownership within the road corridor viewshed are:

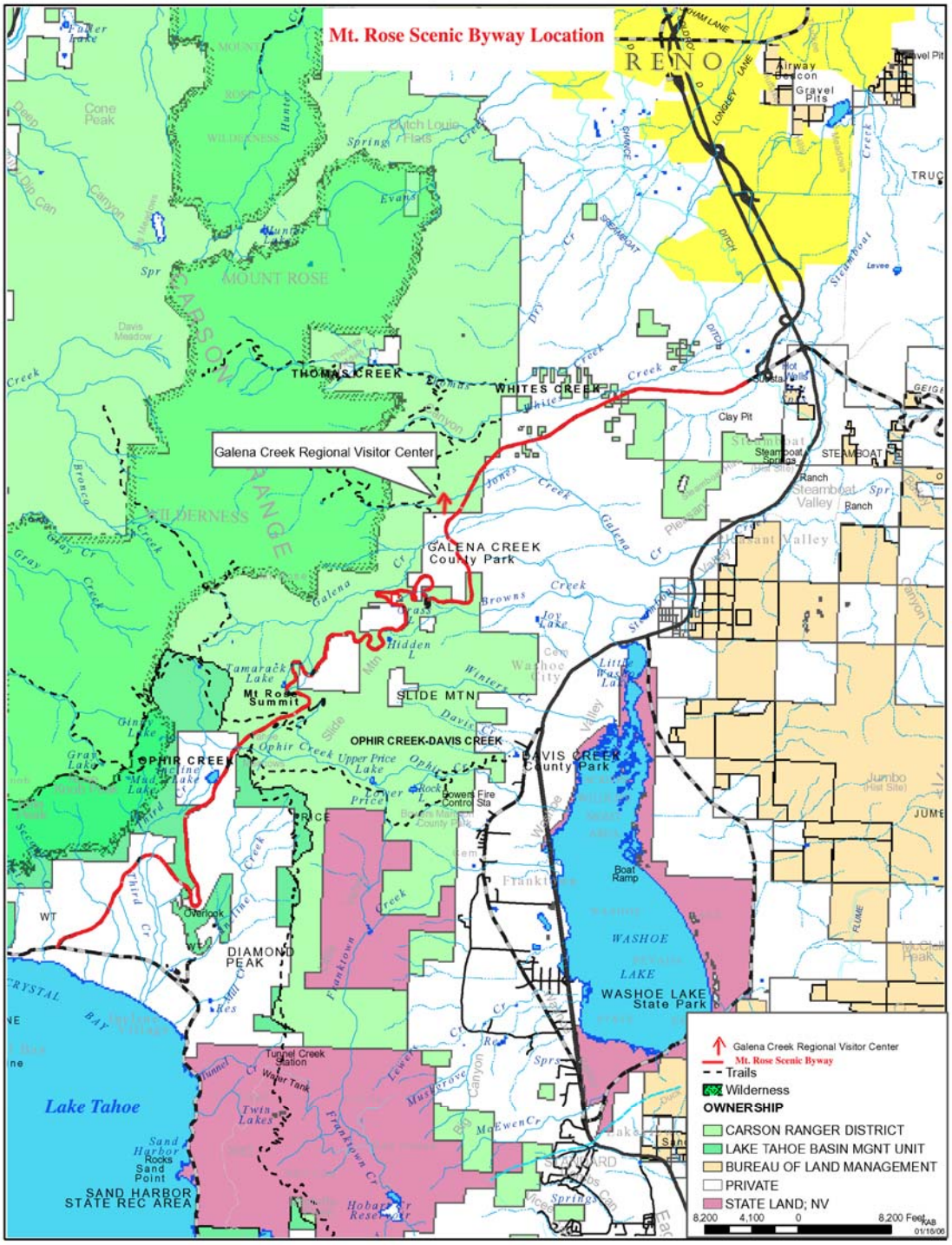
- Private 55%
- USDA Forest Service 40%
- Washoe County 4%
- State of Nevada 1%.

The Mt. Rose Scenic Byway includes portions of federal land managed by the Humboldt-Toiyabe National Forest and the Lake Tahoe Basin Management Unit, Washoe County's Galena Creek Regional Park, City of Reno's Sky Tavern ski area, Diamond Peak cross-country ski area, and the privately owned Mt. Rose Ski Resort.

The Nevada Department of Transportation has jurisdiction over Highway 431. The nearby population centers of Reno, Nevada and Incline Village, California use the Byway frequently.

Interpretive Stops Map




Mt. Rose Scenic Byway Location
RENO
Galena Creek Regional Visitor Center
THOMAS CREEK
WHITES CREEK
GALENA CREEK
County Park
SLIDE MTN
Mt Rose
Summit
OPHIR CREEK-DAVIS CREEK
OPHIR CREEK
DAVIS CREEK
County Park
DIAMOND
PEAK
WASHOE
LAKE
WASHOE LAKE
State Park
Lake Tahoe
SAND HARBOR
STATE REC AREA
STEAMBOAT
Galena Creek Regional Visitor Center
Mt. Rose Scenic Byway
Trails
Wilderness
OWNERSHIP
CARSON RANGER DISTRICT
LAKE TAHOE BASIN MGNT UNIT
BUREAU OF LAND MANAGEMENT
PRIVATE
STATE LAND; NV
8,200 4,100 0 8,200 Feet
KAB
01/16/06

Goals for the Mt. Rose Scenic Byway

1. **To enrich visitors experiences by:**

   - Ensuring visitor safety, comfort, and accessibility to Byway attractions.
   - Orienting people to recreational, interpretive and visitor service opportunities.
   - Being a unique and unified interpretive experience and travel destination.
   - Interpreting significant resources and management of those resources along the Byway in educational, entertaining and inspirational ways.
   - Enhancing visitor enjoyment and recreational experiences.

2. **To protect and interpret natural and cultural resources along the Byway by:**

   - Raising people's awareness of the *value* of Byway resources and that their actions may affect resources.
   - Awakening people to their connection with nature and feeling part of nature.
   - Communicating messages to promote and develop use that reflects wilderness, open space and trail use stewardship ethics.
   - Increasing the understanding of urban interface issues with regard to fires, sensitive plants, and wilderness protection.
   - Educating residents about environmental impacts related to their use of this area.

3. **To add to the quality of life of residents in the Byway region:**

   - Providing recreational and interpretive opportunities for local people to enjoy.
   - Contributing to quality of life, good health and family traditions.
   - Encouraging residents to have pride, a sense of ownership for the Byway, and participate in conservation, thereby leaving a legacy for future generations.
   - Encouraging residents to share their awareness, respect and stewardship of Byway resources.
   - Enhance Tourism and sustainable economic growth.

Interpretive Objectives

1. Overall Scenic Byway Learning Objectives:

a. Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.

b. Visitors will know that the Byway offers a rich natural and cultural legacy.

c. Visitors will know that the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

d. Visitors will understand urban interface issues with regard to fires, sensitive plants and wilderness protection.

e. Visitors will understand the wilderness and conservation ethics along the Byway.

f. Visitors will learn that their actions may affect life along the Byway.

2. Overall Scenic Byway Feeling Objectives:

a. Visitors will feel that the Byway's historic, cultural and natural resources are valuable.

b. Visitors will feel inspired by the cultural and historic legacy of the Byway.

c. Visitors will feel part of nature along the Byway.

d. Visitors will feel a sense of pride and ownership for the Byway.

e. Visitors will feel appreciative about wilderness and conservation ethics.

f. Visitors will feel a sense of personal stewardship regarding the Byway's treasurers.

3. Overall Scenic Byway Behavioral Objectives:

a. Visitors will be respectful while visiting and preserve natural and cultural resources.

b. Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.

c. Visitors will not litter and will pick up existing litter.

d. Visitors will participate in conservation practices.

e. Visitors will share their experiences, awareness, respect and stewardship of resources.

f. Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Overall Byway Theme:

*Experience **life** along the Mt. Rose Scenic Byway*

Main Themes: (Themes are not in order of importance.)

1. Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

2. The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

3. Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subthemes:

1. Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

a. Geologically, the Byway is in a transition zone between the Sierra Nevada province and the Basin and Range province.

b. Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

c. The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

d. Mt. Rose is a unique example of an andesite layer within the Carson Range it is a remnant of a later period of violent volcanism and is highly visable from the byway.

e. Stretching for over 400 miles, the granitic peaks of the Sierra Nevada provide a barrier to moisture carried by west winds from the Pacific Ocean.

f. The Steamboat hills are unique in that they are continuously active providing geothermal power to residents and still provide current day hot springs.

g. Lake Tahoe is commonly included in the Sierra Nevada range but its creation is due to block-faulting and volcanism, features more commonly associated with the Basin to the east.

2. The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

a. Washoe and Paiute people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

b. In the 1850s Steamboat hot springs was a favorite camping ground for early emigrants to California who were traveling through the Truckee Meadows.

c. Discovery of gold created a demand for food which was met through a thriving ranching industry established by Irish and Italian settlers.

d. In 1859, the Comstock Lode's demand for timber led to clearcutting which had a profound effect on forest ecology and water that is still evident today.

e. The town of Galena was founded in 1860, following the discovery of a silver-bearing lead sulfite ore (galena).

f. Innovative snow surveying techniques used around the world began at Mt. Rose. In 1906, Mt. Rose was used as an "outdoor lab" by Dr. James E. Church.

g. Development of alpine skiing in the Lake Tahoe region started on the Byway at Slide Mountain and was named after Mt. Rose.

h. Mt. Rose Scenic Byway is a popular present day and historic pathway from Reno to Mount Rose and Lake Tahoe.

3. **Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.**

a. Mt. Rose Scenic Byway is in Reno's backyard.

b. Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

c. This region is a fire-dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

d. Sensitive plants and animals and the areas where they live need your help to protect them.

e. Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lessons learned here.

f. Your actions teach and inspire others to follow wilderness and conservation ethics.

g. Your desire to create a Legacy for future generations helps preserve the unique resources along the Mt. Rose Scenic Byway corridor.

Visitor Analysis summary

(from the Galena Creek Visitor Center Interpretive Plan)

Market and Audience Analysis

The Mt. Rose Scenic Byway needs to communicate with a diverse and changing local audience as well as visitors to the Reno-Tahoe area. The needs, wants, expectations and recreational preferences of local residents are different from those of visitors, and there are significant differences within each population.

A market and audience analysis (based on secondary data) was one of the first tasks undertaken by the project team. This section presents a summary of that analysis and the strategic implications developed from it. The full text of the analysis, with sources and references, are in Appendix A.

National Trends in Tourism and Recreation

- Nearly half of American tourists are between 36 and 54 years of age. Most trips are taken without children, by car, between April and August to a destination within 300 miles of the travelers' home.

- America's population is aging, and the average age of tourists will increase as baby-boomers retire in ever-greater numbers.

- Visiting natural areas, taking part in outdoor recreation and visiting cultural/historical sites are activities in which well over half (62%) of domestic travelers participate.

- Public participation in learning about nature and culture ("recreational learning") is increasing.

- Emergence of new activities (i.e. snowboarding, Mountain biking) and increasing participation in other activities (i.e. OHV-riding) over the last several decades are placing increased pressure on public land and creating greater potential for user conflicts.

- Americans place a high value on wilderness areas and their benefits, but do not possess a thorough knowledge of exactly what constitutes an "official" wilderness area or understand what types of uses are allowed.

- Americans trust the National Park Service and National Forest Service more than any other sources for information about outdoor recreation opportunities. The internet is the least-trusted source.

Statewide Trends in Tourism and Recreation

- The high proportion of public land in Nevada (87% federally-owned) and the amount. of money available to protect environmentally sensitive areas, cultural resources and improve outdoor recreation facilities (because of the 1998 Southern Nevada Public

Lands Management Act) have created a unique situation in which significant funding has come together with a rich, diverse resource base and strong public support.

- Nevada has been the fastest-growing state in the nation for the last 17 years.
- Nevadans tend to be concerned about and supportive of natural resource conservation and protection of cultural resources.
- Nevadans are concerned about maintaining access to public lands for diverse user groups, and perceive urban development as a major threat to recreational access.
- Nevada's population is overwhelmingly urban.
- A significant proportion of visitors to Humboldt-Toiyabe National Forest rated the availability of information on recreation to be fair or poor.

Local Trends in Tourism and Recreation

- Nearly half of Reno-Tahoe area visitors are married empty-nesters, with single persons representing only a small proportion of total visitation.
- More Reno-Tahoe area visitors come from California than any other state.
- The proportion of Hispanic visitors to the Reno-Tahoe is increasing.
- Gambling is not the primary reason for most trips, but most visitors gamble.
- Participation by Reno-Tahoe area visitors in outdoor recreation and recreational learning (measured by visits to historical/cultural sites) is increasing.
- The proportion of visitors who use the internet to book lodging is increasing rapidly.

Reno and Washoe County Demographics

- Washoe County is the second fastest-growing county in Nevada, with 16% of the state's total population.
- Income levels in Washoe County are higher than the national average.
- Educational levels in Washoe County are roughly similar to the national average.
- Poverty levels in Washoe County are lower then the national average.
- The proportion of Spanish-speaking households in Washoe County is increasing rapidly.
- Hispanics have a low rate of participation in outdoor recreation compared to other ethnic groups.

- Based on anecdotal evidence and continuing high local attendance at campfire programs, a high proportion of visitor center users will be local residents.

Audience Segmentation

The purpose of audience segmentation is communication efficiency. In a heterogeneous and highly-diverse society, there is simply no such thing as "the general public." Interpretive, educational and informational messages should be crafted with the needs, expectations and recreational preferences of a specific audience segment in mind.

The Mt. Rose Scenic Byway audience can be divided into four categories:

1) local, special-interest customers
2) local, general-interest customers
3) non-local, special-interest customers
4) non-local, general-interest customers.

Special-interest customers are those whose activities require special equipment (i.e. skis, binoculars, GPS locators, etc.), skills or training.

Local user groups in the winter include skiers, snomobiling, snowshoeing, Nordic skiing, and dog walking. Summer use includes mountain biking, hiking, nature walking, wilderness backcountry hiking, summit hiking, trail running, through hiking, paragliding, horseback riding and dog walking. Road biking is common around Incline Village.

Input received at the design charrette held November 17-18, 2005, suggested an additional division based on seasonality. Managers from both Washoe County and the Forest Service felt that the summer and winter audiences and activities are different enough to justify a division of the visitor center target audience into summer and winter categories. These target audiences are listed in the tables below.

Table 1: Summery Audience Segments

Local, General-Interest	Non-Local, General-Interest
➔ motorists w/out children* ➔ families in private car w/ children* ➔ schoolchildren grades K-3* ➔ schoolchildren grades 4-6* ➔ schoolchildren grades 7-12* ➔ hospitality and tourism industry ➔ trail users w/out dogs ➔ trail users w/ dogs ➔ wildlife-viewers ➔ picnickers ➔ attendees at campfire programs ➔ users of park rental facilities *Spanish & English-speaking	➔ motorists w/out children* ➔ families in private car w/ children* ➔ schoolchildren grades K-3* ➔ schoolchildren grades 4-6* ➔ schoolchildren grades 7-12* ➔ trail users w/out dogs ➔ trail users w/ dogs ➔ wildlife-viewers ➔ picnickers ➔ attendees at campfire programs ➔ users of park rental facilities *Spanish & English-speaking
Local, Special-Interest	**Non-Local, Special-Interest**
➔ birders ➔ Mountain bikers ➔ equestrians ➔ OHV users ➔ backpackers ➔ anglers ➔ hang gliders ➔ frontcountry campers	➔ birders ➔ Mountain bikers ➔ equestrians ➔ OHV users ➔ backpackers ➔ anglers ➔ hang gliders ➔ frontcountry campers

Table 2: Winter Audience Segments

Local, General-Interest	Non-Local, General-Interest
➔ motorists w/out children* ➔ families in private car w/ children* ➔ schoolchildren grades K-3* ➔ schoolchildren grades 4-6* ➔ schoolchildren grades 7-12* ➔ hospitality and tourism industry ➔ trail users w/out dogs ➔ trail users w/ dogs ➔ wildlife-viewers *Spanish & English-speaking	➔ motorists w/out children* ➔ families in private car w/ children* ➔ schoolchildren grades K-3* ➔ schoolchildren grades 4-6* ➔ schoolchildren grades 7-12* ➔ trail users w/out dogs ➔ trail users w/ dogs ➔ wildlife-viewers *Spanish & English-speaking
Local, Special-Interest	**Non-Local, Special-Interest**
➔ birders ➔ sledders/other snow-play participants ➔ downhill skiers ➔ cross-country skiers ➔ telemark backcountry skiers ➔ hybrid sport participants	➔ birders ➔ sledders/other snow-play participants ➔ downhill skiers ➔ cross-country skiers ➔ telemark backcountry skiers ➔ hybrid sport participants

Analysis of Existing Area Interpretive and Informal Learning Facilities:

There appears to be a wide-open market niche in the Reno-Tahoe area for a visitor center offering interpretation of the unique transition ecology of the Sierra Front and a comprehensive overview of regional recreation opportunities.

While there are a number of small, Chamber of Commerce-style information outlets at various locations around Lake Tahoe (and a proposal to build an expanded visitor facility at Incline Village, less than thirty minutes from Galena Creek Regional Park), the only major nature center in the region is the Taylor Creek Visitor Center. This facility (on the opposite end of the lake from the park) is operated by the Forest Service (Lake Tahoe Basin Management Unit) in cooperation with the Tahoe Heritage Foundation. Its premier attraction is a stream profile chamber that offers visitors an underwater view of Taylor Creek. Several self-guided trails interpret wetlands and other site-specific natural history, including the Washoe pine and other forest ecology. One of the four interpretive trails connects the visitor center to the Tallac Historic Sites, a group of restored vacation mansions that includes a small museum. Guided tours, hikes, slideshows and other interpretive activities are offered at both sites during the summer season.

The situation in the regional museum market seems to be at the opposite end of the spectrum, and might even be considered to be approaching saturation. The Fleischmann Planetarium and Science Center, Nevada Museum of Art and National Automobile Museum are major attractions in Reno proper, but there appears to be little potential for overlap or duplication of interpretive themes between those facilities and the Galena Creek Regional Visitor Center. The Nevada Historical Society Museum in Reno offers a broad overview of area cultural history, while the W.M. Keck Museum at the University of Nevada at Reno focuses on mining history and minerals.

Washoe County operates the Wilbur D. May Center at Rancho San Rafael Regional Park. It houses memorabilia from the life and times of Wilbur May, a Reno-area rancher and world traveler. There is also an arboretum/demonstration garden at the park.

There are more than twenty museums in the vicinity of Virginia City and Carson City, focused on topics ranging from railroading to Native American culture, gambling, Mormon settlement and mining.

The existing inventory of interpretive and informal learning facilities in the Reno-Tahoe area suggests that a somewhat stronger emphasis be placed on ecological themes as opposed to focusing on cultural/historic themes that are unique to the area. With the exception of the Taylor Creek Visitor Center, the natural history thematic areas are wide open. A thorough analysis of exhibits and programs at Taylor Creek should precede exhibit development, but positioning the Galena Visitor Center as the leader in interpretation of local and Great Basin ecology appears to be an appropriate marketing strategy.

Several regional museums interpret mining, so interpretation of mining themes must be approached with a reasonable degree of caution. However, the history of the Galena Creek area cannot be told without telling the mining story. Exhibit concept design should be preceded by a thorough inventory and analysis of the exhibits and displays in regional

museums so that complementary, rather than duplicative exhibits are developed. Maintaining a tight focus on site-specific themes should facilitate this effort.

A similar approach is dictated for interpretation of the Washoe and Paiute cultures, particularly if the decision is made to encourage/enable viewing of the petroglyphs that have been found on the site. There is a wealth of anthropological material already out there, but a conscientious effort to avoid content overlap, combined with a site-specific perspective, should allow the exhibit design team to create complementary interpretive materials that could, in fact, leverage themselves by taking advantage of linkages and handoffs to other facilities."

Interpretive Media and Programming Recommendations

Visitors along the Scenic Byway generally have two needs: orientation and interpretation. Orientation panels and printed maps answer the questions of what to see and do in the area, and where the Scenic Byway route travels. Feeling comfortable is necessary before visitors can enjoy themselves and be receptive to the interpretive information along the Byway.

Orientation along the Byway will be accomplished by providing information at the Galena Creek Visitors Center, Reno-Sparks Convention & Visitors Authority, North Tahoe Chamber of Commerce Visitor Center, agency offices, scenic Byway orientation map panels, publications, website and other media.

Interpretation answers questions about the people and resources along the Byway. For example, it answers questions about how the Native people, the miners and ranchers lived in the area, how Mt. Rose and Lake Tahoe were formed, and the plants and animals here.

Interpretive opportunities along the Scenic Byway include the Visitor Center at Galena Creek Regional park, exhibits, interpretive panels, kiosks, publications, a multi media video program, gps ranger. Live interpretive programs and historic re-enactments are very popular at the Galena Creek park and have been a significant part of interpretation for students, families and visitors. The University of Nevada and Truckee Meadows Community college use the corridor to learn and identify plant and animal species.

Future opportunities may include guest lectures, an outdoor school and guided services. There are unlimited opportunities in the future at the amphitheatre, visitor center and park. Future Community based programs include Art in Galena Creek Park.

Existing media along the Scenic Byway was evaluated before recommendations for new media were formulated. The following pages contain summary matrix charts of existing interpretive media and recommended media at each site along the Mt. Rose Scenic Byway, and also four nearby off byway sites, along Highway 28. Please refer to pages 7-10 for themes, subthemes, and objectives.

In analyzing the matrix charts on the following pages, we can see that the existing media was highest in the cultural history theme and low in the natural theme. The management theme (no. 3) was also lower than the cultural theme (no. 2)

The interpretive stories that are missing from existing panels are: the four life zones of the Mt. Rose Scenic Byway; geology along the Byway; Steamboat hot springs; Washoe's connection to Steamboat hot springs area and Mt. Rose; and stewardship ethics, although they do appear, could be strengthened in new interpretive panels. Therefore, the new interpretive panels this Plan recommends focus on the life zones and stewardship themes mostly. If the FS and Washoe County wish people to feel part of nature and adopt stewardship practices along trails, ecosystem and stewardship messages need to be present
on panels near trails.

Existing Site	Inventory Form page	Existing Media	Live Programming	Objective	Main Themes	Subthemes	Topics/Storylines
Galena Creek Trail, Callahan Rd	Site 5, page 73	trail entrance sign, bike, hike, equestrian					
Callahan Park	Site 5, page 73	none					
Galena Townsite-Historic Marker	Site 5, page 73	Registered marker		1b 2b, 3a	2	2e	Town of Galena
Historic Galena Schoolhouse	Site 5, page 73	none					
Thomas Creek Trailhead	Site 8, page 84	one flat panel interpreting local archeology; information kiosk		1a, 2a, 3a	2	2a	Washoe
Whites Creek Trailhead	Site 7, page 80	information kiosk					
Galena Creek Reg Park - North; Bitterbrush Trail	Site 10, page 95	self-guided nature trail with numbered stations tied to brochure					
Galena Creek Reg Park - North amphitheater	Site 10, page 95		highly popular and often full capacity formal day & evening programs				
Jones-Whites Creek Trailhead	Site 10, page 95	information kiosk					
Galena Creek Regional Park- Stone House	Site 12, page 100	12 panels + Scenic Byway map	docent staffed; meeting place for Nature Walks for school groups and individuals	1b, 2c, 3e	1, 2, 3	1c, 2a, 2d, 2e, 2f, 2g, 2h, 3c	ski history, Washoe, snow surveying, wildfires, birds, animals, trees, pass.
Galena Creek Reg Park- Fish Hatchery	Site 12, page 100	None					
Camp WeChMe-Galena Creek Regional Park	Site 12, page 100	None					
Sky Tavern – City of Reno	Site 14, page 108	None					
Browns Creek Trailhead -Washoe	Site 15, page 110	unsigned parking area					
Mt. Rose East Bowl Valley overlook/	Site 18, page 116	none					
Mt. Rose East Bowl Picnic Area-Washoe	Site 18, page 116	Interpretive loop trail, 4 interp panels, picnic tables (to be constructed summer 2007)		1a, 2a, 3a	1, 2, 3	1c, 2g, 3f	Ski history, trees, plants, animals, conservation, Slide mtn., ringer chairlift.

Mt. Rose Ski Tahoe-main lodge (Private)	Site 20, page 123	Historic map and newspaper articles on wall	SNOWTRACKS-Discovery Beyond The Slopes winter education programming	1b, 2e, 3e	2	2g	Mt. Rose ski history
Atoma Building	Site 22, page 130	None. 1500 sq. ft. lodge formerly a commercial nordic ski center; currently under special use permit to NV Conservation Corps					
Mt. Rose Summit Welcome Plaza	Site 25, page 139	8 interp panels (to be installed summer 2007)		1a, 1b, 1e, 2a, 2e, 3b, 3c, 3f	2, 3	1b, 2a, 2d, 2f, 2g, 2h, 3c	Fire, woods, byway, Tahoe, skiing, trailhead, history, highest pass.
Mt. Rose Summit TRT Trailhead	Site 25, page 139	One TRTA interp panel on trailhead kiosk uphill behind restroom at trail junction		1a, 1e, 2e, 3b, 3c, 3f	2, 3	2a, 3b, 3f, 3g	Washoe land ethic, LNT. trail map, Brockway Summit to Tahoe Meadows.
Tahoe Meadows Trailhead- TRT	Site 27, page 150	One TRTA interp panel on trailhead kiosk at west end of parking lot	winter interpretive guided hikes in partnership with TRTA and Tahoe Backcountry Ski Patrol; summer guided TRTA hikes	1a, 1e, 2e, 3b, 3c, 3f	2, 3	2d, 3b, 3f, 3g	Logging, Comstock, LNT, trail map, Tahoe Meadows to Spooner Summit.
Tahoe Meadows Interp Loop Trail	Site 27, page 150	8 porcelain enamel panels spread along 1.2 mile loop trail	summer guided TRTA hikes	1a, 1c, 2c, 2f, 3b, 3c, 3f	1, 2, 3	1b, 2a, 3b, 3c, 3g	basque sheepherders. logging, clark's nutcracker, living on the edge, creeks, streams and meadows, forces of fire, the Washoe people, stewardship.
NDOT Hwy 431 Wayside-Lake Tahoe Overlook	Site 32, page 166	Stone base with metal pointers identifying visible geographic features around Lake Tahoe		n/a	n/a	n/a	Landmarks
Tahoe Environmental Research Center- UC Davis		Interactive and flat panel and walk-thru exhibits in education center opened 10/07; http://terc.ucdavis.edu/exhibits.html Designed for school groups.		1a, 2c, 3a	1	1c, 1g	Plants, animals, fish, algae, boat safety, Lake Tahoe, climatology, meteorology, chemistry, geology.
Hwy 28 NV State Park/NDOT Wayside-Lake Tahoe Shoreline		Pedestal flat panels on bathroom rail and along nearby Lake shoreline		1a, 2a, 3a	1, 2	1c, 1g, 2a, 2c, 2d	Orientation to Lake Tahoe, lake clarity, fish, history, Lake Tahoe SP, plants, animals, geology, seasons.
Sand Harbor Boardwalk Inter Loop Trail		Series of interp panels along ADA elevated boardwalk loop trail		1a, 2a, 3a	1, 2	1c, 1g, 2a, 2c. 2d	Orientation, water, plants, animals, geology, Washoe, Comstock, logging, Whittell, tourists.
Sand Harbor Visitor Center- NV State Parks		Lake Tahoe model and mostly flat wall exhibits in new centerpiece building		1a, 2a, 3a	1, 2	1g, 2a, 2c, 2d	Clarity of Lake Tahoe, Washoe, geology, glaciers and climate, recreation, history, early inhabitants.

Potential Interpretive Improvements

Recommended Site	Inventory Form page #	New Recommended Media	Live Prog	Objectives	Main Themes	Subthemes	Topics/Storylines
Summit Regional Shopping Ctr REI, Sierra Trading Post, Mt. Rose Station Casiono, Cabelas	Site 1, page 61	Video, brochure/map, orientation panel		1a, 1b, 1d, 1e, 2e, 2f, 3e, 3f	1, 2, 3	3a, 3b, 3g	Conservation, wilderness, trail etiquette.
UNR- Redfield Campus	Site 2, page 63	volunteer, docent, ranger led programs		1e, 2e, 3e, 3f	1, 2, 3	1f, 2a, 3f	Panels (LEED Elements, Green Energy/Geothermal powered); Indian Wars/Winter Home for Washoe.
Steamboat Hills Washoe County land	Site 3, page 65	GPS ranger, publication.		1b, 2f, 3a	1, 2, 3	1f, 2b, 3d	Steamboat Buckwheat, Pygmy Forest, Mineral Deposits, Continuous Hotspring Activity.
Galena Townsite-NDOT Historic Marker	Site 5, page 73	2 "Nevada" shaped panels	*	1b. 2b, 3a	2	2e, 3c	Galena townsite, historic fire threat.
Historic Galena Schoolhouse	Site 5, page 73	Displays, photos, artifacts (report cards),	*	1b, 2b, 3a	2	2c,	Stories of school teachers, Callahan family.
Callahan Park	Site 5, page 73	2 panels near trail	*	1a, 1b, 2b, 3a	2	2a	Washoe panel and map panel for park.
Whites Creek Trailhead	Site 7, page 80	3 panels installed in existing kiosk	*	1a, 1c, 1d, 2f, 3b, 3c,3d	1, 3	1b, 1c, 3a, 3b, 3c, 3d	Lifezones, fire, trail etiquette, Wilderness, wildlife.
Thomas Creek Trailhead	Site 8, page 84	3 panels installed in existing kiosk	*	1a, 1c, 1d, 2f, 3b, 3c,3d	1, 2, 3	1b, 1c, 2a, 3a, 3b, 3c, 3d	Washoe, wildlife, trail etiquette, Wilderness.
Galena Creek Regional Visitor Education Center	Site 9, page 89	Exhibits, scenic byway map	*	1a-f, 2a, 2f, 3d-f	1, 2, 3	1b, 1c, 2c, 2g, 3a-g	Dr. Church, ranching, ecosystems, recreation, orientation.
Galena Creek Regional Park- North; New Amphitheatre (Proposed)	Site 10, page 95	A/V equipment for public presentation and use by groups who rent site	Ranger led hikes; evening programs	1d, 2c, 3b, 3c	1, 2, 3	1c, 3a, 3b, 3g,	Life zones, wilderness, conservation.
Galena Creek Park-North Interpretive Loop Trail (to be constructed under existing RTP grant)	Site 11, page 98	Interpretive trail panels, artifacts, reconstructed Dr. Church cabin, stagecoach , Washoe homesite	*	1b, 2c, 3b, 3c	1, 2, 3	1c, 2f, 2h, 3a	Snow survey science history, historic travel route/stagecoach stop, dude ranch, historic flooding, life zones.
Jones-Whites Creek Loop Trailheads	Site 10, page 95	3 panels installed in existing kiosk		1a, 1d, 2c, 3b, 3c	1, 3	1c, 3a, 3b, 3e, 3g	life zones, trail map, conservation.
Galena Creek Regional Park- South, Stone House (on existing chart also).	Site 12, page 100	Panels and/or exhibits; ranger led programs, evening lecture series	*	1b, 2c, 3e	1, 2	1c, 2a, 2d, 2e, 2f, 2g, 2h, 3c	Ski history, Washoe, snow surveying, wildfires, birds, animals, trees, highest pass.
Fish Hatchery- Galena Ck Reg Park South-Washoe Co.	Site 12, page 100	Base for ranger led programs, evening lecture series, historic pictures and/or panels	*	3a-3f	1, 3	1c, 3g	Fish, family, wildlife.
Camp WeChMe- Galena Ck Park S	Site 12, page 100	Conference and training center, Galena trail map, Know Before You Go	*	3a-3f	1, 3	1c, 3g	Family, wildlife, preservation, protection.

Sky Tavern- City of Reno	Site 14, page 108	GPS ranger, publication		1b, 2b, 3a.	2	2g	Ski Tavern ski history.
Browns Creek Trailhead on Joy Lake Road-Washoe County	Site 15, page 110	Trail orientation map, trail stone monument, panel		1a, 1b, 2b, 3b, 3c	1, 3	1c, 3a, 3c	Reno's backyard, fire, trail etiquette.
Mt. Rose Ski Tahoe-main lodge (Private)	Site 20, page 123	Reinvigorate existing wall mounted pictures with historic pictures, exhibits		1b, 2e, 3e	1, 3	1d, 3f	Environmental implementation of improvements(e.g. Tahoe Draba), Rose & Slide combining avalanche control and glacial cirques.
Proposed New Slide Lodge Mt. Rose Ski Tahoe-East Bowl (Washoe Co)	Site 21, page 127	3 panels on deck		1b, 2e, 3e	1, 3	1a, 1b, 1d, 3g	Geology of Mt. Rose & Slide, environmental implementation of improvements (e.g. Tahoe Draba),, Great Basin region and formation, snowpack relating to wildlife, water supply, etc.
Mt. Rose East Bowl Washoe Valley overlook, parking lot	Site 18, page 116	Byway Guide publication		1b, 1c, 2a, 3f	1	1a, 1c	Virginia Range, Washoe Valley, wildlife.
Atoma Building- across from Mt. Rose Ski Tahoe main parking lot	Site #22, page 130	Possible to convert to summer interpretive center; opp for winter back-country rental and outfitter guide, pot interpretive trail	*	1b, 2b, 3a	1, 3	1c, 3g	Lifezones, history of acquisition into national forest ownership after resort proposal from 1980's, geologic area story.
Mt. Rose Summit Welcome Plaza	Site 25, page 139	2 new TRTA panels; 2 new interpretive panels	*	1a, 1c, 2e, 3f	1	1a, 1c, 1d,	Geology, transistion zones, Galena Creek watershed
Mt. Rose Campground	Site 26, page 146	3 panels	*	1a, 1b, 2a, 3b, 3c	1, 3	1c, 1e, 3b, 3d	Botany, geology, rain shadow.
Tahoe Meadows Trailhead	Site 27, page 150	3 panels	*	1a, 1c, 2c, 2f, 3b, 3c, 3f	1, 2, 3	1b, 1c, 2a, 3b	Washoe migratory route, sedges & mosses.
Tahoe Meadows Ophir Creek Interpretive Loop Trail (Proposed)	Site 28, page 156	Self-guide nature trail brochure, tied to numbered stations.	*	1a, 1e, 1f, 2c, 2f, 3b, 3c, 3f	1, 2, 3	1c, 1e, 1g, 2a, 2d, 2h, 3b, 3d, 3f, 3g	High elevation subalpine meadow user impacts, trail etiquette, stewardship, proper pet control to eliminate meadow impacts, prehistoric and historic travelway.
Incline Lakes (Proposed)	Site 30 page 161	If building constructed offers interior and exterior panel, exhibits, electronic media opportunities	*	1b, 2e, 3a	1, 3	1b, 3e, 3f, 3g	Mt Rose Wilderness and Tahoe Rim Trail history, use and trail etiquette; history of acquired Incline Lakes Property Corp into public ownership; wettest place in driest State, hydrologic divide into Tahoe basin, Incline lake, life zones?
NDOT Hwy 431 Wayside-Lake Tahoe Overlook	Site 32 page 166	GSP ranger program, Guide publication, one metal panel.		1a, 1b, 2a, 2d, 3a	1, 2, 3	1g, 2a, 2d, 2g, 3f	Geology, Comstock, Whittell, Diamond Peak, Incline Village, special management of Tahoe Basin. Programs prepared and presented logistics, and current relevance according to target audience.

Theme Analysis

Theme #1 is the natural theme, theme #2 is the cultural history theme, and theme #3 is the conservation/management theme. See pages 8 and 9 for exact wording of themes and subthemes. In order to ascertain if there was a balance of themes and subthemes along the Mt. Rose Scenic Byway, they were analyzed in the following way:

Existing panels –

Total #1 themes = 7 (counting 4 off byway sites, Highway 28.)
Total #1 subthemes = 11 (counting 7 subthemes from off byway sites, Highway 28.)

Total #2 themes = 12 (counting 4 off byway sites, Highway 28.)
Total #2 subthemes = 27 (counting 9 subthemes from off byway sites, Highway 28.)

Total #3 themes = 6
Total #3 subthemes = 11

New panels recommended –

Total #1 themes = 23
Total #1 subthemes = 34

Total #2 themes = 15
Total #2 subthemes = 24

Total #3 themes = 20
Total #3 subthemes = 48

We can see that the existing media was highest in the cultural history theme and low in the natural theme. The management theme was also lower than the cultural theme.

If we add the new panels we get:

Theme #1: 7 existing plus 23 new = 30 #1 themes.
Subthemes #1: 11 existing plus 34 new = 45 #1 subthemes.

Theme #2: 12 existing plus 15 new = 27 #2 themes.
Subthemes #2: 27 existing plus 24 new = 51 #2 subthemes.

Theme #3: 6 existing plus 20 new = 26 #3 themes.
Subthemes #3: 11 existing plus 48 new = 59 #3 subthemes.

Now the three main themes are pretty well balanced. The cultural history is 27, the natural history is 30, and the management theme is 26. The subthemes rank as follows: The management theme (conservation) is 59, the cultural history theme is 51, and the natural theme is 45. (If we subtract the 4 Highway 28 off byway sites, main theme #1 would be 26 instead of 30.

Interpretive Media Recommendations

Following is a summary of interpretive media recommendations for the Byway. See "Interpretive Opportunity Inventory Forms" for details at each site.

- **Scenic Byway Orientation sites:**

This Plan recommends Scenic Byway Orientation **map panels** at these locations:

- Summit Sierra Lifestyle Shopping.
- Raleys shopping center.
- Future Mt. Rose Station Casino.
- Galena Creek Visitor Education Center (panel already fabricated, but no kiosk).
- Mt. Rose Summit Welcome Plaza. (already fabricated).
- Mt. Rose campground.
- Tahoe Meadows Trailhead.
- Mt. Rose Ski Tahoe.
- North Tahoe Chamber of Commerce Visitor Center on Highway 28.
- NDOT Lake Tahoe Wayside.

Budget: Total design and fabrication for ten new panels = **$50,000 plus**
10 new single panel kiosks = $50,000. Total map panels plus structures = $100,000.

- **Interpretive Panels:**

Because interpretive panels are located outdoors, close to the features they interpret, they can readily answer the questions visitors have, where and when they have them, and can nurture their curiosity. By providing immediate information, interpretive panels can make visitors' experiences more meaningful and much more rewarding. Interpretive panels are always on duty, available to visitors twenty-four hours a day, every day of the year, year after year. Because of their availability, and their low-tech, user friendly nature, interpretive panels appeal to a wide range of visitors. Those who may be reluctant to enter a visitor center, view a motion picture, or participate in an interpreter-led walk often will stop to enjoy interpretive panels. Interpretive panels provide a compelling visual format. Current technologies allow the presentation of large, full-color illustrations and photographs and finely detailed maps. The outdoor location of these interpretive panels allow visitors to experience the area firsthand. These interpretive panels will foster a direct interaction between visitors and environments along the Scenic Byway. See individual site forms for written design concepts.

There are 24 recently fabricated interpretive panels at 3 sites along the Byway: The Stone House panels, which will later be moved to the visitor center, the Mt. Rose Welcome Plaza, and Mt. Rose East Bowl on Washoe County land. There are 9 older panels at Tahoe Meadows. High snow levels are tough on interpretive panels along the Byway. Therefore, this plan recommends new panels only where NDOT crews do not plow, i.e. on Forest or County lands. The only Nevada Department of Transportation pullout where interpretive panels are recommended is the Lake Tahoe pullout near Incline Village, because of it's exceptional views of Lake Tahoe and Mountains.

This Plan recommends interpretive panels at the following locations. See individual site forms for each site's number of signs, themes and design concepts.

- Callahan Park; near trailhead – 2 low profile panels.
- Galena Townsite – NDOT Historic Marker – 2 Nevada shaped panels.
- White Creek Trailhead; (in existing wooden kiosk) - 3 panels.
- Thomas Creek Trailhead; (in existing wooden kiosk) - 3 panels.
- Galena Creek Regional Park north, Jones-whites Creek Loop Trail (in existing wooden kiosk) – 3 panels.
- Mt. Rose Welcome Plaza – 2 panels in new wooden structure.
- Mt. Rose campground – near trailhead – 3 low profile panels.
- Tahoe Meadows – 3 low profile panels near restroom.
- NDOT Lake Tahoe Wayside – one metal panel.

The Visitor Center is using an attractive wooden octo-kiosk. In consideration of budget issues, this plan recommends using the existing wooden kiosks at the locations mentioned above. Graphic design and fabrication = **$144,000. (plus one new wooden kiosk for the visitor center @ $16,000. This budget is based on using existing wooden kiosks where available.)**

- **Audio CD Tour**: An audio CD that is linked to driving the Scenic Byway would enhance the visitors' Byway experiences. The use of tape recordings for self guided tours such as Scenic Byways is increasing. They are quite effective for communi-cating stories, anecdotes, and quotes. The CD concept is a theatrical piece with music, quotes, and personal stories from people who currently live and work in the Byway area. This would include Byway conservation steward's messages. This would be a sales item and could be sold at the visitor center. **Budget** for editing of a 40 minute professionally produced Scenic Byway audio tour CD = **$13,000.** This CD will share all the stories along the Scenic Byway. NOTE: Since this could be edited from the multi-media program, the budget is simply for editing.

- **Mt. Rose Scenic Byway website:** An internet Byway presence will attract visitors to drive the Byway. This website would contain a virtual Byway tour of the Mt. Rose Scenic Byway. It would allow potential visitors to download a multi media video show of the Byway, covering the Byways main themes, subthemes, and storylines. This site would also allow the visitor to print off a Byway interpretive guide, byway map, and free brochure. **Budget: $10,000**. Designation of these funds will provide the Byway with a prominent website that will attract visitors year round.

- **Multi-media program.** This program includes video, still images, historic images, professional narration and music. This program will tell all the stories of the Mt. Rose Scenic Byway to travelers. They will be able to download the program from the internet website and load the program onto their ipod video and cell phones to watch when they drive the Byway. They can also download a narrative version without the images. At the visitor center they can purchase a CD or DVD of the program. This same program can be used with the GPS ranger units that visitors check out at the visitor center. Two edited versions are recommended. A 30-40 minute program for use on site, when driving the Byway, and a 7-10 minute program that will be used as a promotional video. This 7-10 minute program will be shown in the visitor center.

It could also be shown at travel and trade shows and aired on community television stations and in motel rooms. **Budget: $70,000**.

The multi-media program will feature *conservation stewards* (local people) speaking at different sites and serving as role models to inspire others to follow their examples. Suggested stewards: hiker with dog, wilderness ethic hiker, horseback rider, sensitive plant species botanist, fire and urban interface homeowner, skier, etc. A professional narrator and music will weave the other stories along the Byway together.

- **Scenic Byway Display** for trade shows, etc. This would be a portable display featuring color photos of the Scenic Byway and text, and the Scenic Byway map. This could be used at the county fair and various trade shows. **Budget: $5,000 for** design and printing. (Does not include the trade show exhibit structure.)

- **GPS Ranger Units**

The GPS Ranger™ is a handheld GPS (Global Positioning System) mobile guiding device that can deliver the Byway's message to visitors as they experience the beauty, meaning and history of the Mt. Rose Scenic Byway. The GPS Ranger™ can be programmed with unlimited content. It allows for daily updates such as today's activities. The GPS Ranger™ automatically delivers audio, video, text, or still photos when a visitor approaches the pre-programmed GPS coordinates that correspond to every point of interest (buildings, landmarks) throughout the Byway.

The GPS Ranger™ is a lightweight, rugged, water-resistant computer with a sunlight viewable screen. It can be made available to your visitor for a half day or daily basis. Customize the GPS Ranger™ to meet your needs. The content development team will collaborate with you to ensure that your themes and key messages reach your visitor; you maintain control over the content.

The concept is the Galena Visitor Information Center would rent these units out. Visitors would need to give a credit card number, and if the unit was not returned, their card would be charged for the full price of the unit. Visitor could drop the units off at another location, i.e. the North Tahoe Chamber of Commerce Visitor Center. *All stories, subthemes and themes along the Byway canl be told via the GPS Ranger. The GPS Ranger can be programmed to offer the user a choice of multiple thematic programs. Visitors will be able to select the stories they wish to view and hear.*

- Self-guided visitor experience;
- Flexibility of content;
- Supports multiple languages;
- Daily updates and content changes;
- Wayfinder or directional information;
- Easy and simple to use.
- Environmental and safety messages - *Where are the bathrooms?, Don't feed the bears!*
- *Bread Crumbing* information tells you where your visitors went while using the system and how long they visited each location;

GPS Ranger Software. The current software has been developed to allow for large-scale deployment of handheld units at numerous venues anywhere in the world. All content is developed and safeguarded at a central location. A local computer delivers the content to the individual units and also manages all information storage and device battery recharge. the content is editable via an online central editing facility, placing the message in your hands.

Safety concern. The Mt. Rose Scenic Byway is a dangerous, curving road where many accidents occur. This Plan has some concerns in using the GSP Ranger units, and providing a downloadable multi media program for cell phones and ipods. If people are watching these in the car, the driver could be distracted, and it may pose a safety threat.

One possible way to mitigate this safety danger, is to program into the multi media presentation the words: "You are approaching _____site. For your and others safety, please pull over to listen and view the program about this site." One GPS Ranger contractor indicated that he could even program into the gps ranger units a way to tell if the car has stopped or is still traveling. The sure way to have this be safe would be to program it so it cannot be played at all if the car is in driving mode. It would resume play when the car is stopped.

GPS Ranger Budget:
Hardware (handheld & rack) and Software:
- Ranger Handheld GPS unit which includes: 4" LCD screen, 1 GB of storage, wrist strap, car Mt. kit, 1 year limited warranty.

- Charging and Communications Rack which includes: 15 inch touch screen LCD for check in/out, all charging and handheld communications hardware, venue server PC, UPS, magnetic swipe reader (to track users). The system will require two racks (pick up/drop off). This will allow visitors to pick up the units at the visitor center and drop them off at North Tahoe Chamber of Commerce Visitor Center on Highway 28.

Price for 25 unit kit:	$30,000.00
Price for 50 unit kit:	$60,000.00
Options:	
Extra Rack	$15,000.00
Receipt Printer	$ 2,000.00
Specialized Paper for Printer (30,000 sheets)	$ 2,000.00
Custom Graphics for the Rack	$75 per hour plus materials
Locking Security Gate for Rack	$ 1,000.00
Total hardware budget for 25 unit kit plus custom graphics	**$50,000.00**
Annual Software license	**$10,000.00**

Content Development:
A GPS Ranger contractor can handle all of the content development or provide you with a "self-developmentguide" to do it yourself or finally, some combination of the previous two options.

Content development for a **40 minute tour**, includes:
video production and travel, professional voice over,
script writing, professional audio and
video editing in a single language. **$22,000.00**

Intallation/Training and Delivery:
Delivery, FOB
Installation/Training at visitor center. **$5,000 plus travel**

- **iPhone by Apple,** (to be released in June 2007)

The iPhone is a widescreen iPod with touch controls that lets you enjoy all your content, including music, audio books, videos, TV shows, and movies, on a beautiful 3.5-inch widescreen display. It also lets you sync your content from the iTunes library on your PC or Mac. And then you can access it all with just the touch of a finger.

iPhone's stunning 3.5-inch widescreen display is the ultimate way to watch TV shows and movies from the iTunes Store on a pocketable device. Just tap the touch controls for play/pause, chapter forward/backward, and volume.

iPhone features a rich HTML email client and Safari — the most advanced web browser ever on a portable device — which automatically syncs bookmarks from your PC or Mac. Safari also includes built-in Google and Yahoo! search. iPhone is fully multi-tasking, so you can read a web page while downloading your email in the background over Wi-Fi or EDGE. COST: $500 for 4 GB.

The multi-media program created for the Mt. Rose Scenic Byway can be download-able from the website to ipods or cell phones. **The same safety concern** that was voiced under the GPS ranger description is **even more relevant for these devices**, since there is no way to control or prevent the user from listening/watching while driving, except a simple narrative safety plea to pull over. The visitor center could also rent the following devices out.

Full screen video iPod. The final iPod design is expected to feature a similar display to the iPhone (which some have noted is not true widescreen ratio) and also include 80GB and 100GB capacities. The video iPod is reportedly ready and due to ship before the iPhone's June release. COST: $250.

- **Publications:** Interpretive publications can relay a large amount. of information to visitors. Publications can be easily carried by visitors. They can be designed for specific visitor groups and can be sent to visitors prior to travel, encouraging visitation. The following publications are recommended for the Scenic Byway:

    - **Scenic Byway Brochure** – This is a free "attraction" brochure that will encourage visitors to drive the Scenic Byway. Scenic color photographs, a limited amount. of text, and a quality design are important for attracting visitors. This brochure size is the standard 4" x 9", created by folding a sheet of 9" x 16" paper into four folds. With the front and back panel counted, this gives 8 - 4" x 9" sections. The front and back cover could include a scenic

Byway photo featuring the Mt. Rose Scenic Byway. The first two pages of the brochure could contain a scenic Byway photo as the background, with minimal text superimposed over the background photo. One of these pages could have a simplified map of the entire Byway. The inside four panels will contain photos and text of attractions along the Mt. Rose Scenic Byway. The last page will contain general travel and lodging information, weather information, road conditions, and mileage distance from Reno and Lake Tahoe.
Production Budget: $6,000;
Printing Budget for 30,000 copies: $30,000.
Total production and printing budget: $36,000.

- **Scenic Byway Travelers Guide** – This publication serves visitors while they are driving the Scenic Byway. It provides orientation and interpretation of the Scenic Byway and optional side trips and recreation opportunities. This publication will allow visitors to fully enjoy the attractions once they have arrived at the Scenic Byway. This publication will guide the visitor to all interpretive and orientation stops along the Byway, including The Visitor Center. This guide will also include interpretive information supplementing that which they receive at the interpretive stops. All interpretive information will reinforce the themes, subthemes, and stories mentioned in this Plan for particular sites. This publication will contain conservation steward stories, Native people stories, ranching and mining stories, past and present day people stories, geology, ecosystem and wildlife stories, and recreation information. The publication will mention trails, the Mt. Rose campground and recreation sites on the Byway. <u>This guide should have GPS coordinates in it for people using that technology.</u> This guide will mention length, difficulty, highlights, and time required for hiking trails. The Travelers Guide will list special events occurring during the year at certain sites on or near the Byway, such as interpretive tours, historic re-enactments and community festivals. The guide should be written with safety of the road in mind. Visitors should not be encouraged to look at views while they are driving. They will be encouraged to pull over to see views. This will be an 8" tall x 9 1/2" wide black and white publication. This size publication will fit conveniently into the car glove box. The publication will include a map of the Scenic Byway with travel route, travel distances, location of interpretive and orientation stops, with the Galena Visitor Information Center and the Mt. Rose Scenic Byway campground highlighted. Orientation information should be located first in each of these sections. The interpretive information should follow the orientation information in each section. An aesthetic design, scenic photographs, illustrations, maps and ample white space is recommended. This publication will be sold at the Visitor Center, Chamber of Commerce offices, agency offices, motels, gift shops, etc.
  Size suggestion: approximately 25 pages.
  Production Budget: $13,000;
  Printing Budget for 50,000 copies = $30,000.
  Total production and printing budget: $43,000.

- **Self guided nature trail brochure with numbered stations.** Agency produced for Tahoe Meadows Ophir Creek Interpretive Loop Trail (proposed.)

Scenic Byway Orientation sites for **printed** Scenic Byway publications and maps:

- Scenic Byway website.
- Steamboat Hot Springs Resort.
- Galena Creek Visitor Education Center.
- Mt. Rose Ski Tahoe lodge.
- North Tahoe Chamber of Commerce Visitor Center on Highway 28.
- Reno Sparks Convention and Visitor Authority.
- Sand Harbor State Park Visitor Center.
- USFS, Taylor Creek Visitor Center.
- Humboldt-Toiyabe National Forest, Forest Headquarters, Sparks Nevada.
- Humboldt-Toiyabe National Forest, Carson Ranger District, Carson City, Nevada.
- Washoe County office and Galena Creek Parks: Bartley Ranch, Rancho, May Museum, Plumas, Davis Creek, Bowers Mansion.
- Long Education Center.
- W.M. Keck Earth Science and Mineral Engineering Museum.
- Bureau of Land Management (BLM State Office).
- TRPA (Tahoe Regional Planning Agency).
- Nevada Commission On Tourism, Carson City, Nevada.
- Summit Sierra Lifestyle Shopping Center, Mt. Rose Highway.
- Mt. Rose Station Casino, Mt. Rose Highway.
- Hyatt Casino/Resort, Incline Village.
- Starbucks, Reno, Nevada.
- Reno and Lake Tahoe hotels, motels, and casinos.
- Reno and Lake Tahoe ski resorts.
- Reno and Lake Tahoe outdoor stores.

Live Interpretive Programs:

- **Friday Night Insight at the Visitor Center:**

If the multi purpose room or the amphitheater is available for community presentations, weekly or monthly educational presentations are recommended by the Forest Service and Washoe County and partners such as: Great Basin Institute, Great Basin Ecology Lab, Great Basin Outdoor School, Audubon Society, Desert Research Institute, Bureau of Mines and Geology, Nevada Land Conservancy, Friends of Nevada Wilderness, and others. The purpose of these gatherings should be to educate people about conservation and wilderness ethics, encourage them to feel a part of the Byway and develop positive protective values and behaviors towards the resources of the Byway.

- **Living History Theater:**

Live historic theater, i.e. Dr. Church, Native storytelling, and music once a month during the summer outside at the visitor center, once the amphitheater is built. UNR's oral history CD would be a valuable asset to a local theater group. They may wish to choose certain historic people and convey their stories through living history theater.

- **Outfitter Guide possibilities:**

Tour guides taking visitors into the backcountry to hike trails within the Mt. Rose Scenic Byway, with box lunch, music, wilderness ethics, conservation and stewardship values, and storytelling.

- **Galena Creek Visitor Center Programming**

This plan suggests the visitor center staff or volunteers conduct weekly live interpretive programs at the visitor center. Once the trail is built at the visitor center, naturalist led guided interpretive hikes are encouraged. This Plan encourages the continuation of the existing campfire programs offered at Galena Creek Park.

- Existing Interpretive Programs at Galena Creek Park:

Attendance at campfire programs offered during the summer at Galena Creek Park has shown a steady rise since 1990, meeting capacity in 2000. It is recommended the following be continued:

- storytelling
- singalongs and miscellaneous musical acts
- community theater
- Smokey the Bear
- stargazing
- coyotes and wolves
- magic
- raptors and bats
- rock art
- bear biology and human safety around bears
- early explorers and fur traders
- Basque history
- American Indians of the Great Basin
- ducks and other waterfowl
- Mountaineering
- insects
- logging and flume-building
- Nevada ghost towns
- ranching and cowboys
- snakes.

Attendance at Galena Creek Park Campfire Programs

Year	Total Attendance	# of Programs	Mean Attendance per Program
1990	552	11	50
1991	1107	13	85
1992	638	9	71
1993	1006	9	112
1994	1165	9	129
1995	1202	8	150
1996	914	9	102
1997	1276	9	142
1998	1867	8	233
1999	2200	9	244
2000	2147	9	239
2001	1716	9	191
2002	1809	9	201
2003	1482	7	212
2004	1018	9	113
2005	1164	6	194

Total attendance at Galena Creek Park in 2003 (the latest year data for which data is available) was 130,263 people.

Attendance at Interpretive Programs and Facilities

Program or Facility	Time of Year	Number of Programs	Total Attendance	Age Group
Stone House Interpretive Facility	May-Oct	n/a	1,461	all
Campfire Programs	Jun-Aug	7	1,482	all
Junior Naturalist Programs	Jun-Aug	6	190	7-12
Safe Winter Recreation Programs	Jan-Mar	7	195	12 and up
Miscellaneous Winter Programs	Jan-Mar	3	data not available	all
Nature Hikes	Apr-Nov	25	1,187	all
Scout Hikes and Programs	all seasons	131 hikes, 3 programs	data not available	all
Fall Photography Hike	Oct	1	18	12 and up

Source: Washoe County Department of Parks and Recreation, 2003 Annual Report

- **Interpretive Visitor Center:** Interpretive centers provide a central location for orientation and interpretation of the area and the Scenic Byway.

Benefits of visitor centers:

- They provide a central location for orientation and interpretive information dispersal.
- They are effective for attracting visitors to an area and often boost the local economies.
- They can be used to attract more than one type of visitor group at the same time.
- They can encourage visitors to visit the Byway through their exhibits and audio visual programs.
- They involve the visitor more than any other media and have more of an influence.

This Plan supports the existing vision of the Visitor Education Center at Galena Creek. This center will serve as a Gateway visitor center to the Mt. Rose Scenic Byway. This visitor center would provide visitors a place to get questions answered regarding the Mt. Rose Scenic Byway. **BUDGET: $1,630,000 for construction of visitor center and $200,000 for design and fabrication of exhibits**. (From the Visitor Center Interpretive Plan)

Galena Creek Visitor Center Recommendations

Although the Mt. Rose Scenic Byway Interpretive Plan contract does not include Visitor Center exhibit planning or design, this Byway Interpretive Plan offers the following comments to the Exhibit Plan, dated 11/06. This Scenic Byway Interpretive Plan suggests using the visitor center floor plan more effectively, perhaps, as shown on the floor plan on next page. This Mt. Rose Scenic Byway Interpretive Plan suggests the following changes to the exhibits at the visitor center. These changes are recommended to focus on the themes presented herein.

- The addition of a Scenic Byway exhibit, a native exhibit, a conservation steward exhibit, and an audio visual multi media exhibit for the visitor center are recommended.

- Scenic Byway exhibit – multi-media video 10 minute program, either in lobby area or on wall, if one relief map is eliminated.

- Native exhibit – wall mural, text, and 3-d props, focusing on Washoe and Steamboat Springs and Byway area. (Good pine nut video from UNR could be used and shown.)

- Change in Ranching exhibit- Suggest deleting the artifact cases and replacing them with a wall mural with 3 d props.

- Conservation exhibit – people cut outs with audio messages about conservation ethics.

- Ecosystems exhibit – instead of unique plants display. Suggest interpreting all 4 transition zones the Byway travels through, using mural, plants and animals, and text. Sensitive plant species is one part of the ecosystems exhibit.

- Tree exhibit – suggest using fabricated or plastic trees at the ends of the "Forces of Change exhibit to create a feeling of a forest scene, also plants and animals.

- DVD player to show DVD's.

- It is recommended to have one relief model map in the center of the room and use the wall space for the multi-media Scenic Byway exhibit.

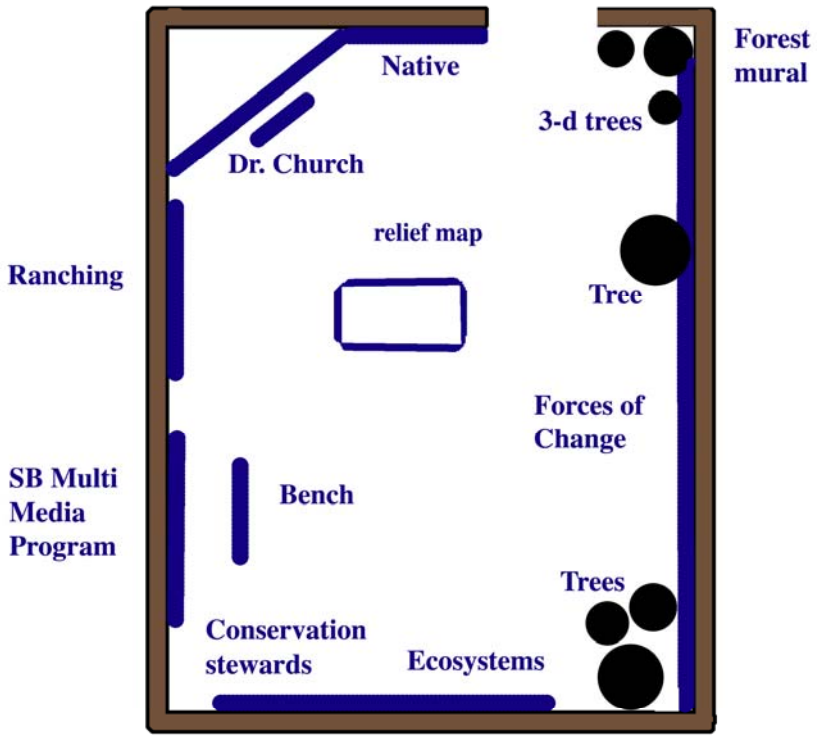
- See other more detailed suggestions for the visitor center on the site inventory form.

This Plan agrees with the Visitor Center Interpretive Plan that:

- Exhibits and programming should be developed that meet the curriculum requirements of the State of Nevada regarding the natural and historical/cultural heritage of the State. Outreach to local school children through personal interpretation (both at the visitor center and in the schools) should be an ongoing budget priority.

- All interpretive materials should be offered in English and Spanish to the greatest extent possible.

Current Galena Creek Visitor Center Layout:



Friends Group/Interpretive Association

Friends Group/Interpretive Association

Friends groups tend to be the most dedicated and effective of organizational partners because their mission is focused on a specific park or facility. It is strongly recommended that a friends group be established to support Galena Creek Visitor Center and the Mt. Rose Scenic Byway. Since Federal agencies can not sell products, many friends groups or interpretive associations are born out of a need to create an organization that can conduct retail sales to raise funds. The situation with the Galena Creek Regional Visitor Center is unusual (for a facility on Forest Service land) in that retail operations do not need to fall within the purview of a friends group since this will be the responsibility of Washoe County. This situation may be viewed as a positive circumstance, given that the efforts of a friends group could be directed toward other areas (i.e. trail maintenance).

The role of a friends group could include:

- trail maintenance
- fundraising for development of various publications, audiovisual media or other interpretive products
- fundraising for facilities improvements
- lobbying (i.e. for a trail connection between Reno and the Tahoe Rim Trail in partnership with the Sierra Front Recreation Coalition)
- promotion of the Mt. Rose Scenic Byway and the visitor center
- other functions to be determined by the organization when it is established.

The impetus for a friends group must come from the local, grassroots level. Initial support might be found in local service organizations (i.e Rotary, Kiwanis), homeowners' associations in residential developments close to the park, trail organizations, Chambers of Commerce and/or activity-focused organizations such as hiking clubs or equestrian clubs that have a stake in the park's recreational resources.

The effort to establish a "Friends of Mt. Rose Scenic Byway" organization (as opposed to a "Friends of Galena Creek Park" organization) in order to draw membership support from sources closer to (or in) Reno on one end of the byway and Incline Village on the other.

Consultation with existing friends groups located closest to the visitor center will be helpful. The Eastern Sierra Interpretive Association works with the US Forest Service, Toiyable National Forest, Carson Ranger District. Washoe County works with the Nevada Rock Art Foundation, in Reno, Nevada.

The **Sierra Front Recreation Coalition**, the Nevada Rock Art Foundation, and the Eastern Sierra Interpretive Association are all potential partners who might be interested in leading the formation of a Mt. Rose Scenic Byway Friends Group. It is recommended that the Forest Service and Washoe County pursue these possibilities.

Potential Partners

(From the Galena Creek Visitor Center Interpretive Plan)

Partners who were active participants in the interpretive charrette included:

Reno-Sparks Convention and Visitor Authority
POB 837
Reno, NV 89504
Phone: (800) 367-7366
www.visitrenotahoe.com.

Nevada Department of Transportation
Sydnie Schlachta
State Systems Coordinator
Roadway Systems Division, NDOT
1263 S. Stewart St.
Carson City, NV 89712
Phone: (775) 888-7179
Fax: (775) 888-7019
www.nevadadot.com

Nevada Rock Art Foundation
226 California Ave.
Reno, NV 89509-1621
Phone: (775) 323-6723
www.nevadarockart.org/index.htm.

NNG Horse Club Gaited Horse Club
Mae Franco, President
7620 Yorkshire Dr.
Reno, NV 89506
Phone: (775) 972-8092

Nevada Archaeological Association
PO Box 73145
Las Vegas, NV 89170-3145
www.nvarch.org/
or the state's historic preservation office:
NV State Historic Preservation Office
100 North Stewart Street
Carson City, NV 89701-4285
Phone: (775) 684-3448
http://dmla.clan.lib.nv.us/docs/shpo/

Washoe County School District
3600 Butch Cassidy Way
Reno, NV 89511
Phone: (775) 851-5630
www.washoe.12.nv.us.

Nevada Division of Forestry
2525 S. Carson St.
Carson City, Nevada 89701
Phone: (775) 684-2500
http://dcnr.nv.gov/

REI-Reno
2225 Harvard Way
Reno, NV 89502;
Phone: (775) 828-9090
www.rei.com/stores/reno/

Nevada Area Council
Boy Scouts of America
1745 S Wells Ave
Reno NV 89502
Phone: (775) 787-1111
www.scouter.org/index.cfm.

Tahoe Rim Trail Association
DWR Community Non Profit Center
948 Incline Way
Incline Village, NV 89451
Phone: (775) 298-0012
www.tahoerimtrail.org/index.htm

Truckee Meadows Trail Association
POB 265
Reno, NV 89504
Phone: 786-8254, Tony DiSilvestro.

Sierra Front Recreation Coalition
c/o Tahoe Rim Trail Association
DWR Community Nonprofit Center
948 Incline Way
Incline Village, NV 89451-9527
Phone: (530) 587-3625
http://www.sierrafront.org/index.html

Additional Potential Partnership include:

The Great Basin Ecology Laboratory
USDA Forest Service
Rocky Mountain Research Station
University of Nevada, Reno.
920 Valley Road
Reno, NV 89512
Phone: (775) 784-5329
Robin Tausch, Supervisory Range Scientist
Email : rtausch@fs.fed.us
www.ag.unr.edu/gbem/

Great Basin Institute
UNR, Mailstop 99,
Reno, NV 89557
Jerry Keir, Field Studies/Earthwatch
Phone: (775) 784-1192
Fax: (775) 327-2307
www.greatbasininstitute.org/index.php

Friends of Nevada Wilderness
Northern Nevada Office
PO Box 9754
Reno, NV 89507
(1 Booth Street, at Idylwild)
(775) 324-7667
Email (Reno office)
brian@nevadawilderness.org
Phone: (702) 650-6542
fnw@nevadawilderness.org
www.nevadawilderness.org/

Great Basin Outdoor School
5125 Escuela Way
Reno, NV 89520
Phone: 775-823-8888
Fax: 775-689-2628
Email: info@greatbasin-os.org
www.greatbasin-os.org/

Nevada Land Conservancy
P.O. Box 20288
Reno, NV 89515
Phone: (775) 851-5180
Fax: (775) 851-5182
www.nvlc.org/

Nevada Agricultural Experiment Station
Nevada. Agricultural Experiment Station
Mail Stop 221
University of Nevada
1664 North Virginia Street
Reno, Nevada 89557
Phone: (775) 784-6237
Fax: (775) 784-6732
www.ag.unr.edu/NAES/Departments.htm

Desert Research Institute, Reno, Nevada.
Heather Emmons – Media Contact
Phone: 775-673-7313 (o)
702-743-3435 (c)
heather.emmons@dri.edu
www.dri.edu/

W.M. Keck Earth Science and Mineral Engineering Museum
Mackay School of Earth Sciences and Engineering
University of Nevada, Reno
1664 N. Virginia Street
Reno, NV 89557
Phone: (775) 784-4528
www.mines.unr.edu/museum/

Long Education Center
TERC Incline Village Lab
Tahoe Center for Environmental Sciences
291 Country Club Drive
Incline Village, NV 89451
Phone: (775) 881-7560.

Lahontan Audubon Society
P.O. Box 2304
Reno, NV 89505
Information Line: (775) 324-2473
http://www.nevadaaudubon.org/

Reno Ski and Recreation Club
P.O. Box 20731
Reno, NV 89515
Phone: (775) 747-0233.
www.renoskiandrec.com/

Reno Rodeo Foundation
Contact: Marie L. Baxter M.Ed.
Foundation Coordinator
500 Damonte Ranch Parkway
Suite 1008
Reno, NV 89521
Phone: (775) 851-3505
Fax: (775) 827-5026
www.renorodeofoundation.org/

Nevada Department of Cultural Affairs
Contact: Teresa Moiloa,
Phone: (775) 687-8323.
www.dmla.clan.lib.nv.us/

State of NV, Dept of Cultural Affairs
716 N. Carson Street, Suite B, Carson City, Nevada 89701
Phone: (775) 687-8393
Fax: (775) 684-5446
lmlibby@clan.lib.nv.us

DRI faculty available for speaking engagements at the Galena Creek Visitor Center:
- Cloud seeding (Arlen Huggins)
- Weather/climate monitoring (Dick Reinhardt/Kelly Redmond)
- Wildland/forest fires (Tim Brown/Beth Hall)
- Tahoe Air Quality (Alan Gertler/Hampden Kuhns)
- Renewable Energy (Roger Jacobson/Amber Broch)

Byway Marketing Strategies

Marketing includes defining an image or "message" about the Byway; identifying and targeting your market, or potential visitors; communicating with those markets; and ultimately matching a supply, or a visit to your Byway, with a demand. Marketing is a continuous, systematic Plan of research, implementation, control and evaluation geared to satisfy both the needs and desires of your visitors.

The marketing strategies recommend communications methods that work best in promoting your position to specific target markets. The Mt. Rose Scenic Byway has four niche target markets: 1) local, special-interest customers; 2) local, general-interest customers; 3) non-local, special-interest customer; and non-local general-interest customers. See table on page 14.

Some of the non-local and local special interest customers will include visitors looking for a Scenic Byway experience; visitors recreating in nearby public lands, i.e. Washoe County lands, Humboldt-Toiyable National Forest lands, and the Lake Tahoe area. Those recreating in public lands near the Byway may come to watch wildlife, ski, hike, picnic, or camp.

Several components that will help carve out a well-differentiated market niche for the visitor center and byway include:

1. a unique logo to distinguish a line of clothing, hard goods such as coffee mugs and other items for sale in the gift shop
2. books, brochures, CD's, DVD's and other items specific to the Galena Creek area (also featuring the facility/byway logo)
3. a well-designed, information-rich website featuring a virtual tour of the visitor center and downloadable content for personal communication devices such as I-Pods.

Programs involving the community have good potential to increase public awareness of the visitor center and byway as well. These might include environmental education events of various kinds to supplement the existing slate of campfire programs, trail-building/cleanup days, public involvement in surveys for T&E plants and animals, bird counts, etc.

Marketing the Mt. Rose Scenic Byway

The importance of linking the Mt. Rose Scenic Byway and the Galena Creek Regional Visitor Center has been stressed again and again in this plan. Byway travelers will inevitably become aware of the visitor center, so marketing the byway amount to de facto marketing of the visitor center. The byway designation is a potentially robust source of funding for exhibit, program and literature development, and it may also serve as the basis for the formation of a friends group or interpretive association.

Gaining support for byway marketing from an array of different partners (tourism promotion agencies, casino resorts, ski areas, etc.) should be an easy sell. It enhances

the positioning of Reno-Tahoe as "America's Adventure Place" and offers an alternative to gambling that is attractive to even those visitors not necessarily inclined toward outdoor activities but interested in "seeing the sights." Although information on the economic impacts of byways is spotty (no data exists for Nevada of which the project team is aware), research conducted in New Mexico found that about 20% of all non-local byway travelers had been influenced to visit the region as a direct result of the existence of a byway.

The byway and visitor center can be effectively marketed through existing media at relatively low expense. Potential internet communication channels include:

- Reno-Sparks Convention and Authority website (also its literature)
- Nevada Department of Transportation website (a section on the Mt. Rose Scenic Byway is in place, it will need updating when the visitor center opens)
- Nevada Commission on Tourism website
- websites of automobile clubs (i.e. American Automobile Association) and recreational vehicle clubs (i.e. Good Sam Club)
- websites of Lake Tahoe ski areas and local casino-resorts
- America's Byways website (a section on the Mt. Rose Scenic Byway is in place, it will need updating when the visitor center opens)
- Humboldt-Toiyabe National Forest website
- other travel-related websites (i.e. www.wildernet.com) that promote travel to destinations with outdoor recreation opportunities.

The byway and visitor center could also be promoted through fliers and posters placed at area lodging facilities, sporting goods stores, restaurants and other tourism-related businesses, as well as Forest Service information/contact stations such as the Taylor Creek Visitor Center and the information outlets of other land management agencies such as the Bureau of Land Management.

Marketing visitor center programs to the local population can be achieved through traditional media such as newspaper and radio, as well as fliers at the outlets noted above, and on the proposed visitor center website. Programs can also be marketed on-site by using a bulletin board or posting fliers."

Additional Byway marketing strategies recommended by this Byway Interpretive Plan include:

- Partnerships with adjoining Scenic Byways (particularly Lake Tahoe Eastshore Drive National Scenic Byway), and with nearby attractions are extremely important. The most valuable marketing that can occur will relate to forming partners with nearby scenic Byways, having the Mt. Rose SB information included in already existing Nevada and California tourism publications, having a web presence, linking the Mt. Rose SB web site with other tourism web sites and visitor centers that can also interpret the Mt. Rose SB, having the Mt. Rose Scenic Byway brochures and maps available on nearby public lands, and at visitor centers and museums outside of the area who interpret Lake Tahoe and Reno.

- A focus on jointly marketing adjoining Scenic Byways in California and Nevada and interagency attractions could make driving the Byway more attractive to visitors. Northern California's and Northern Nevada's Scenic Byways could be connected through itinerary marketing to allow the potential visitor to see several scenic drives in one trip. The recommended Scenic Byway map handout could also highlight adjoining Byways, i.e. the Lake Tahoe Eastshore Drive.

- The "Mt. Rose Scenic Byway" brochure and a tear sheet scenic byway map is the first marketing strategy. The brochure and map could be placed at the locations listed on page 19 of this Plan.

- Website: The first priority is to use the National Scenic Byways website as the Byway's primary presence on the web. This is the simplest and most immediate strategy. National Scenic Byways Program operates a website (**http://www.Byways.org**) that spotlights all the nationally designated Byways and provides travelers with detailed and timely information. With over 3 million hits per month, this website offers Byways an excellent opportunity to get information out to the travelers. The Byway organization can take an active role in keeping its own information on the NSB website up to date. The organization can fine tune the description of the Byway and provide more scenic Byway photos. The Mt. Rose SB is already on the NSB website and it is already linked to the Humboldt-Toiyabe National Forest website. The National Scenic Byway website comes up first when searching for "Scenic Byways".

When more funds are available, the Byway committee should create and maintain its own website in addition to the web pages mentioned above. Unlike printed materials, websites can be constantly updated. The website can provide current information about road and weather conditions, special events, update changes to services provided along the Byway or even change the photographs of the Byway according to the seasons.

It is suggested that the Byway site link with other sites, such as MapQuest.com, Iroute.com, Alamo.com, and others that are looking for free information for their commercially driven sites. Using the Internet in this fashion has the potential to give the Byway more exposure than millions of advertising dollars can. The Byway's website should be cited on all printed materials, brochures, newsletters, business cards, etc. It should be linked to sites listed on page 58 and the Lake Tahoe Eastshore Drive Scenic Byway. Develop a list of key words related to the primary and secondary external audiences that can be used to find web sites through major search engines. These key words should be: Scenic Byway, Lake Tahoe and Reno.

- Hospitality training program: Washoe County and the US Forest Service could conduct yearly training on the Scenic Byway for local businesses in Reno and Lake Tahoe so they can answer visitor's questions regarding the Mt. Rose Scenic Byway.

- Special community events: Washoe County and the US Forest Service and local businesses are encouraged to plan special community celebrations and events along the Byway and to advertise these in Reno and Lake Tahoe newspapers and on the webpage.

A Mt. Rose Scenic Byway table at these community events would be valuable to hand out Scenic Byway brochures and maps and to answer questions. A Scenic Byway photo collage display is suggested and could be used at county fairs, celebratory events and trade shows.

- Publicity: A Scenic Byway Committee could be established. This committee should maintain a consistent, seasonally-tuned schedule of promotions via press releases, media partnerships and public/private sector partnerships. A Byway Coordinator marketing person could administer the duties of maintaining a database of contacts, issuing press releases throughout the year, and fulfilling requests for media kits. Contacts for radio, TV, newsprint, regional periodicals and travel writers will be the primary recipients for periodic press releases for Byway information and activities. Of course, the managing database will need routine updating, and is key to free promotion of the Byway. Media kits should not be sent out until the Interpretive Media is produced and in place. The Scenic Byway needs to deliver what the advertising is promising. If a travel writer comes to the area and is disappointed because there is no story being told, that will not promote the Byway. Media kits should be sent to regional news outlets, select media in Nevada and California, and organizations requesting Byway information. Regional media can be a strong ally of the Byway by creating partnerships that keep the **stewardship** story of the Mt. Rose Scenic Byway in front of the general public.

The press packet media kit should include:

- Official Scenic Byway Map
- Brochure
- Travel Itineraries
- A list of interesting historical facts pertaining to the Byway
- A list of past and present projects
- Press releases describing important recreational resources and community events
- Local tourism contacts that can help media complete their articles via interviews
- Contacts listed should be individuals that are easily accessible via phone, as well as, by email. These individuals should be well versed on Byway projects and at least two key members of the Scenic Byway Committee should be included.

A DVD presenting the Mt. Rose Scenic Byway tour, the audio tape/CD tour, and the Travelers Guide publication, since they are expensive to produce, should be included in the Media Kit only when the return of visitors to the Byway promises to outweigh the costs of these items. For example, a television station willing to promote the Byway through Public Service announcements, a newspaper or magazine willing to write a tourism article featuring the Mt. Rose Scenic Byway, would be worth the cost of including these items in the media kit.

- Feature articles in newspapers and magazines: Since a magazine is written especially for a specific trade, association or special interest group, readers fall into an easily identified demographic group. Getting stories about the Byway published in magazines geared to your target markets will ensure that you reach people most interested in your Byway. Since people value magazines, they are generally kept for a longer period of

time and their content carries a certain authority. Once the interpretive media are in place, (the map panels and the interpretive signs, and the audio tour is produced), newspapers in Reno and Lake Tahoe can be encouraged to write feature stories about the Byway. These feature stories should highlight the environmental protection and wilderness ethics along the Byway. They could feature a few local people whose behavior sets the example for the behavior the agencies wish to encourage. These local people would serve as role models. A media kit should be sent and the editors should be contacted by phone or email. Develop sample itineraries and submit with media kit to travel magazines. Kits should be submitted after contacting editors by phone.

- Television PSA's will give a visual image of the Byway. A series of public information messages delivered through an on-going partnership with local television is a powerful tool for Byway promotion. News, weather, and sports segments on local television broadcasts are good candidates for sponsorships that present Byway public service announcements. Sample itineraries and media kits should be sent and followed up with phone calls. The television Public Service Announcements should highlight the environmental protection and wilderness ethics along the Byway. They could feature a few local people whose behavior sets the example for the behavior the agencies wish to encourage. These local people would serve as role models.

- Radio PSA's have an intimate, one-on-one appeal. They are broadcast in conjunction with a programming schedule which is geared to specific audiences. The radio, as opposed to other media, is integrated into daily activities. The radio is an excellent way to promote the Scenic Byway to potential visitors through short public service announcements. The radio Public Service Announcements should highlight the environmental protection and wilderness ethics along the Byway. They could feature quotes by a few local people whose behavior sets the example for the behavior the agencies wish to encourage. These local people would serve as role models.

- Travel shows: It is recommended that the Scenic Byway display be used at travel and trade shows whenever possible.

- Public Sector contacts: Contacts for Government officials, visitor information centers, VCB's, Chamber of Commerce, State and Federal Highway administration staff. Periodic mailings of Byway information will keep the Byway at the "Top of the mind" for staff and volunteers of public sector entities.

- Private Sector Contacts: Contacts from lodging, casinos, restaurants, and select retail outlets near the Scenic Byway in Reno and Lake Tahoe. A great potential exists in forming "tourism packages" partnerships with these establishments.

- For approaching group planners, international wholesalers, travel agents and travel writers: Familiarization tours, direct mail sales calls, and the Internet. When the Orientation map panels are up, the interpretive signage is in place, the audio tour produced, the multi media program and the GPS ranger units in place, and the visitor center is open with its exhibits installed, group marketing can then be encouraged.

"Fam tours" for travel writers, visitor center employees, select lodging front desk staff, local media personalities, and volunteers could then be scheduled each year in the spring. Media kits with prepared news articles/stories, entertainment, and food should be provided.

- Develop Speaking Points for SB Committee Members: Committee members play a significant role in communicating the mission and vision of the Byway. Developing clear and concise sentences that communicate the major roles, values, themes, and projects of the Byway can be helpful. These can be distributed to Committee members.

Evaluation

Evaluation is a critical component of any marketing and promotional effort. Evaluation helps determine if the expenditures for tourism promotional efforts are effective in generating visitation and visitor expenditures. The Byway Committee should evaluate its marketing and promotional efforts by following these simple steps over the next five years:

- Visitor counts at the Galena Creek Visitor Center: An annual count of visitors to the Visitor Center is a good method for changes in visitor numbers. The Visitor Center should compile and report this information by month and year.

- Highway Vehicle Counts: The Byway Committee can use the Nevada Department of Transportation annual counts at locations along the Scenic Byway for evaluation of traffic increases along the Byway. Highway counts are an indirect method to monitor the trends of visitors and are only estimations. However, these counts can help evaluate the change in visitor use along the Byway.

- Internet Activity: Measurement of website activity can be tricky with "hits" and "sessions". However, establishing baseline data and consistent tracking over time will reveal increases and decreases in website activity.

- Financial Review: Some of the Interpretive Media recommended in this Plan are designed to return revenue to the Byway. The Scenic Byway Traveler's Guide, the video/DVD, audio/CD tape when sold, will generate revenue to first cover the production costs, and hopefully to exceed the costs.

Priorities for Implementation Of Interpretive Plan

As funding opportunity's and partners become available, the Forest Service and Washoe County will tentatively follow the proposed implementation schedule.

Priority One: Branding, Logo, attraction brochure and map (logo/branding-incorporate into maps)

Priority Two: Website.

Priority Three: Visitors need orientation first before they will be receptive to interpretive media. They need directions, safety and comfort information. They need to know what opportunities exist along the route. Therefore, the first priorities for implementation are the Scenic Byway Map Panels. Publish and install scenic byway map.

Priority Four: After visitors have been oriented, they are ready to receive interpretation. Therefore, priority 4 includes the interpretive panels at locations listed on page 20.

Priority Five: Galena Creek Visitor Center, with its staff, exhibits and multi media program will serve as the central orientation and interpretation site for the Byway.

Priority Six: Scenic Byway promotional display, audio/CD program, and Scenic Byway Travelers Guide.

Priority Seven: Live interpretive programs

Priority Eight: Scenic Byway multi-media program and GSP ranger units.

Implementation

Contracts to be awarded:

Contract 1:	Branding, Logo, brochure and printed map (logo/branding-incorporate into maps)	$ 36,000
Contract 2:	Internet website development.	$ 10,000
Contract 3:	Design and fabrication of 10 Map panels along the Byway at locations listed on page 21.	$ 50,000
Contract 4:	Design, construction, and installation of 10 kiosks.	$ 50,000
Contract 5:	Writing, graphic design, and fabrication of 22 Scenic Byway Interpretive Panels at 9 locations listed on page 22.	$ 144,000
Contract 6:	Construction of one new wooden kiosk for Visitor Center (Once visitor center is constructed.)	$ 16,000
Contract 7:	Construction of Galena Creek Visitor Center.	$1,630,000
Contract 8:	Exhibit design and fabrication of exhibits.	$ 200,000
Contract 9:	Scenic Byway Travelers Guide publication.	$ 43,000
Contract 10:	Scenic Byway graphic trade show display.	$ 5,000
Contract 11:	Scenic Byway audio CD production.	$ 13,000
Contract 12:	Scenic Byway multi media video production.	$ 70,000
Contract 13:	GPS Ranger Units.	$ 87,000
Total contract Cost		**$2,354,000**

Evaluation of Overall Plan Success

This section of the Interpretive Plan provides direction for evaluation of the recommended, new, and existing interpretive media and services. It provides answers to the question, "How will we know if our objectives have been accomplished? In order to maintain high quality interpretation, it is essential to be able to appraise the effectiveness of the interpretive programs and services and media offered to visitors. The critical question to be asked and answered is: Are the objectives of the Mt. Rose Scenic Byway being met? The Byway objectives are listed again here with methods to evaluate them.

- Visitors will be respectful while visiting and preserve natural resources.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and pick up existing litter.
- Visitors will participate in conservation practices.
- Visitors will share their experiences, awareness, respect and stewardship of resources.
- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

These behaviors can be assessed by rangers hiking the trails twice weekly and noting trail conditions and keeping incidence logs, i.e. whether people pick up after their dogs.

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will know that the Byway is pat of a unique ecotone between the Sierra Nevada and the Great Basin.
- Visitors will understand urban interface issues with regard to fires, sensitive plants and wilderness protection.
- Visitors will understand the wilderness and conservation ethics along the Byway.
- Visitors will learn that their actions may affect life along the Byway.
- Visitors will feel that the Byway's historic, cultural and natural resources are valuable.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will feel part of nature along the Byway.
- Visitors will feel a sense of pride and ownership for the Byway.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will feel a personal stewardship regarding the Byway's treasurers.

The feeling and learning objectives can be evaluated at the Galena Creek Visitor Center by:

- Informal exit interviews conducted by visitor center staff with visitors;
- A questionnaire containing questions about feelings and knowledge gained;
- Guestbook with comments section;
- Bulletin Board for visitor comments, containing "I learned" section and "I feel" section;
- Suggestion box at Galena Creek Visitor Center and Mt. Rose Welcome Plaza;
- Visitor Counts.

Other techniques may be desirable, but involve considerable investments of staff time, expense or both. The integration of information-gathering software into any computer-based exhibits is probably the first technique that might be considered in addition to the techniques above.

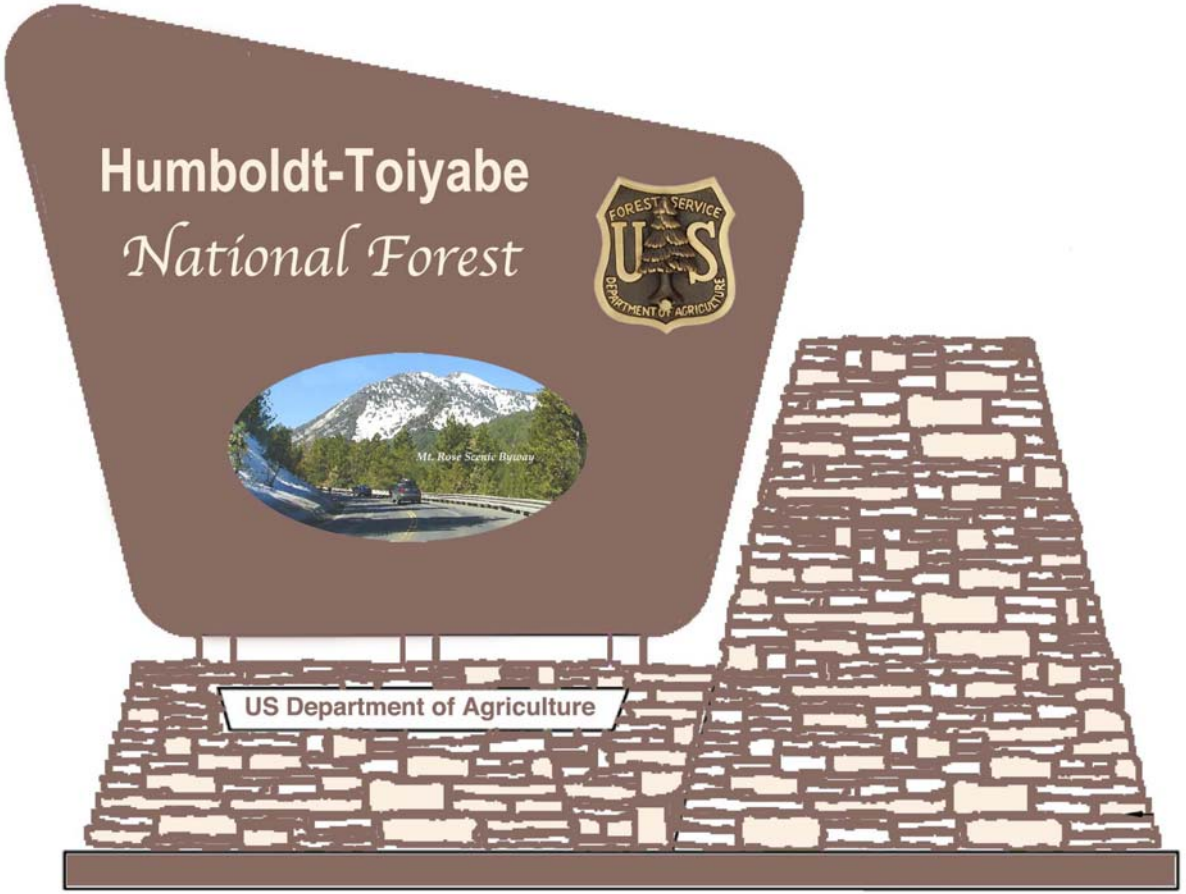
Mt. Rose Scenic Byway Design Concepts

The design concepts on the following pages are *concepts*…NOT final designs. Final graphic design of all interpretive signage and kiosk panels will be accomplished in the future, when funding becomes available.
The images on the panels are placeholders only, not the actual graphics that will be used on the panels.

Enjoy these concepts as beginning seed ideas.

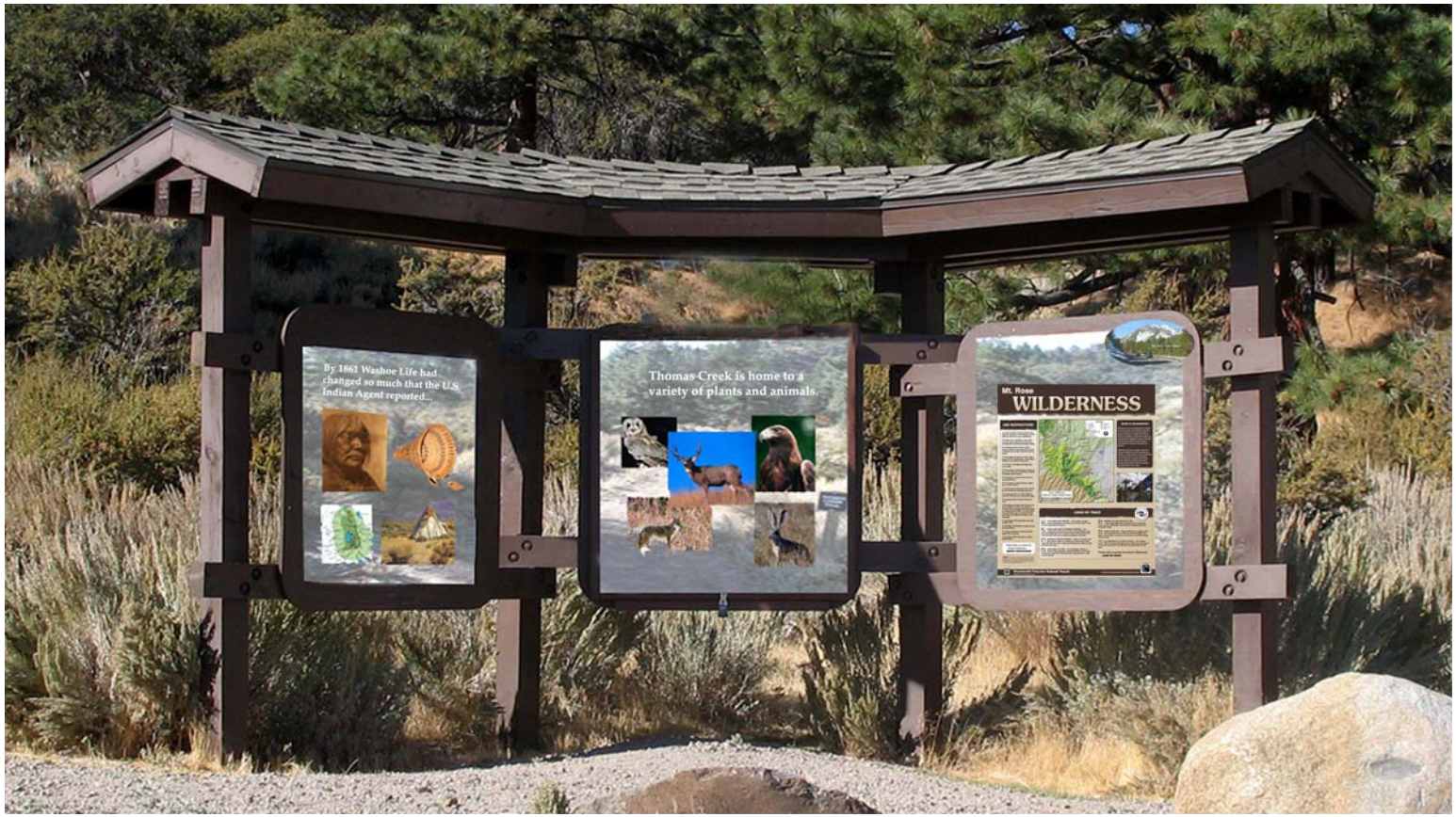
Mt. Rose Scenic Byway Logo concept

Mt. Rose Scenic Byway sign concept



Callahan Park, Galena Creek trail interpretive panel concept

Thomas Creek interpretive panel concept

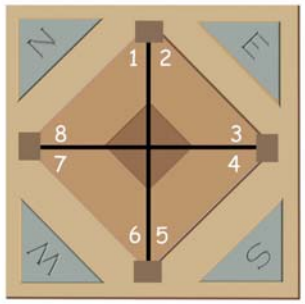


Galena Visitor Center kiosk design concept

Octo-Kiosk

(8-sided Kiosk)

A venue to display
8 pre-existing panels.



plan view
indicating
8 facets

Later development
could be a large
plasma-touch-screen
interactive

exhibit design associates

GALENA VISITOR'S CENTER SOUTH ELEVATION

Mt. Rose Welcome Plaza interpretive panel design concept

Tahoe Meadows interpretive panel design concept

Interpretive Opportunity Inventory Form

Site #1: SB Orientation sites in Reno

Location: Summit Regional Shopping Center,
REI, Sierra Trading Post, Mt. Rose Station Casino, Cabelas

Description: (Off-Byway) shopping center in Reno.

Existing Pullout: parking lot.

Seasonal Accessibility: all year

Interpretive Significance: Since people stop at these places to shop, these are good places for orientation information about the Mt. Rose Scenic Byway and also for conservation education messages.

Existing Media or Signage: None

Physical Infrastructure Changes Recommended: None

Recommended Interpretive Topics: conservation/wilderness education.

Recommended Orientation Topics: Mt. Rose Scenic Byway.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.
- Visitors will understand the wilderness and conservation ethics along the Byway.
- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.
- Visitors will share their experiences, awareness, respect and stewardship of resources.
- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Theme:

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subthemes:

- Mt. Rose Scenic Byway is in Reno's backyard.

- Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

- Your desire to create a Legacy for future generations helps preserve the unique resources along the Mt. Rose Scenic Byway corridor.

Storylines:

  - Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

  - Visitors are encouraged to use leave no trace principles.

Interpretive Media Recommendations: Scenic Byway orientation map panel, show Mt. Rose Scenic Byway video, hand out brochures and printed maps.

Interpretive Opportunity Inventory Form

Site #2: University of Reno, Redfield Campus

Location: SR 431 and Wedge Parkway

Description: (Off-Byway)

Existing Pullout:

Seasonal Accessibility: all year

Interpretive Significance: UNR Redfield campus buildings were designed and built using LEED Elements and they are geothermal powered. The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

This area was a winter home for the Washoe people.

Existing Media or Signage: None

Physical Infrastructure Changes Recommended: None

Recommended Interpretive Topics: conservation, geothermal and LEED, Washoe.

Recommended Orientation Topics: Mt. Rose Scenic Byway.

Objectives:

- Visitors will understand the conservation ethics along the Byway.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will share their experiences, awareness, respect and stewardship of resources.
- Visitors will participate in stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Themes:

- The Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- The Steamboat hills are unique in that they are continuously active providing geothermal power to residents and still provide current day hot springs.

Storylines:

- At the present time there are five geothermal power-generating plants in operation in the Steamboat area. Nevada is second only to California in installed geothermal capacity.

- Geothermal resources have been known since the dawn of mankind, when natural hot springs were first used for cooking and bathing. Geothermal resources are used for generation of electricity to heat homes and greenhouses, dry food and lumber, raise fish, and provide water for cooking and bathing.

Subtheme:

- Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storyline:

- This area was a winter home for the Washoe.

Subtheme:

- Your actions teach and inspire others to follow conservation ethics.

Storyline:

- UNR Redfield campus buildings were designed and built using LEED elements and they are geothermal powered.

Interpretive Media Recommendations: Volunteer, docent, ranger led programs.

Interpretive Opportunity Inventory Form

Site #3: Steamboat Hot Springs

Location: East of Highway 395, south side of road.

Description: (Off-Byway) Historic hot springs and steam generation plants

Existing Pullout: Potential site at UNR Redfield campus or Washoe County land

Seasonal Accessibility: all year

Interpretive Significance: Steamboat Hot Springs is one of the oldest known sites in the world of continuous hot spring activity producing surface mineral deposits. There are currently five geothermal power generating plants at the geothermal site.

The Steamboat Hills are the home of historic Steamboat Hot Springs. The main spring terrace is the white area just above highway 395 near the valley floor. Before geothermal wells for the power plant were drilled, several springs vented to the surface here and created the steamboat effect that earned the area its name. In the 1850s these springs were a favorite camping ground for early emigrants to California who were traveling through the Truckee Meadows. The travelers marveled at the sight of the springs puffing and blowing off large wreaths of steam like a steamboat and, by 1857, the name "Steamboat" was firmly affixed to the feature. Mark Twain may have also played a role in affirming the name. When describing it, he is said to have declared: "*Behold, a steamboat in the desert*."

Existing Media or Signage: None

Physical Infrastructure Changes Recommended: None

Recommended Interpretive Topics: geology, history of the area, Steamboat buckwheat.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.
- Visitors will be respectful while visiting and preserve natural resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- The Steamboat hills are unique in that they are continuously active, providing geothermal power to residents and still provide current day hot springs.

Storylines:

- Steamboat Hot Springs is one of the oldest known sites in the world of continuous hot spring activity producing surface mineral deposits. The hot springs system has been at least intermittently active for at least 2.5 million years.

- The four rhyolite domes erupted between 3 and 1 million years ago. The magma chamber that extruded these flows provides the heat for the Steamboat hydro-thermal system.

- At the present time there are five geothermal power-generating plants in operation in the Steamboat area. Nevada is second only to California in installed geothermal capacity.

- Geothermal resources have been known since the dawn of mankind, when natural hot springs were first used for cooking and bathing. Geothermal resources are used for generation of electricity to heat homes and greenhouses, dry food and lumber, raise fish, and provide water for cooking and bathing.

Subtheme:

- In the 1850s these springs were a favorite camping ground for early emigrants to California who were traveling through the Truckee Meadows.

Storylines:

- Steamboat Springs was recommended by Chief Winnemucca to the "forty-niners" for rest and enjoyment of the resuscitating effect of bathing in the hot waters.

- Over the succeeding years, a number of spas and resorts were developed at the hot springs and currently, there is one spa in operation in the lower terrace area.

- It is generally conceded by old-timers that the name came from Mark Twain who declared, "Behold a steamboat in the desert."

- Water has been used for therapy since ancient times. We find references to the use of mineral waters for healing by the Egyptians, Arabians, Japanese, Native Americans, Greeks and the cultures of ancient India, to name but a few.

Subtheme:

- Sensitive plants and animals, and the areas where they live, need your help to protect them.

Storylines:

- The type of soil on site allows Ponderosa pines to grow, but stunted, and there are some pinyon pines at the site too. Steamboat buckwheat and steamboat monkey flower are two listed sensitive plant species on site.

- Steamboat buckwheat (Eriogonum ovalifolium var. williamsiae), is a uniquely beautiful plant found ONLY in the Steamboat Hot Springs area of southern Washoe County, Nevada.

- Eriogonum ovalifolium var. williamsiae (steamboat buckwheat) was named in honor of **Margaret Jensen Williams**…a local botanist.

- Early in 1975 Margaret Williams decided it was time to start a local native plant society. On April 7th, 1975 the Northern Nevada Native Plant Society was born.

- **Arnold Tiehm**, a local botanist, has discovered 19 new flowering plant species, all in Nevada over the past two decades.

Interpretive Media Recommendations: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

If UNR Redfield campus or Washoe County land site becomes available for interpretive panels, these stories could be told on three interpretive panels.

Interpretive Opportunity Inventory Form

Site #4: Byway views

Location: Mt Rose Scenic Byway

Description:views

Existing Pullout: (Field locations for Byway views will be further researched prior to development; may need roadway improvements.)

Seasonal Accessibility: all year views.

Interpretative Significance: Geologic views.

Mt. Rose Scenic Byway mile 3.2. Looming directly ahead is the highest part of the Carson Range. Mt. Rose is the saddle-shaped peak straight ahead, and Slide Mountain (striped with ski runs and topped by several tall antennas) is on the left. All of the spreading housing developments on the right frost the surface of the huge Mt. Rose fan and glacial outwash complex that extends from the Carson Range eastward to here. The slope of the fan has been accentuated by the continued downward tilting of the eastern margin of the Truckee Meadows and the uplift of the Carson Range along the Sierra Nevada frontal fault zone. In this area, the zone consists of broadly distributed, mostly north-trending faults rather than one main fault as is the case farther south along the western margin of Carson Valley.

Mt. Rose Scenic Byway mile 4. Callahan Ranch Road intersection. While new construction here makes it difficult to see much geology out of a car window at ground level, if you were up in a plane—or maybe a balloon—you would see that you are crossing over a series of parallel, north-south-trending faults that cut across the broad alluvial fan. Offsets on these faults are down-to-the-west as well as down-to-the-east, creating mini-horsts and grabens in the fan gravel surface. (Information from Nevada Bureau of Mines and Geology, Special Publication 19.)

Here we might also interpret the population change that has occurred even in the last 10 years, and show 2 photos of the Mt Rose Fan…one taken in 1994 and one in 2004. (available from the Bureau of Mines and Geology.) These photos show how development has erased the historical barn in the center foreground of the 1994 photo and added all the houses to the fan in 2004 photo.

Existing Media: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: geology, population change, life zones.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.

- Visitors will be respectful while visiting and preserve natural resource.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

  Subtheme:
  - Geologically, the Byway is in a transition zone between the Sierra Nevada and the Basin and Range provinces.

    Storylines:
    - Looming directly ahead is the highest part of the Carson Range. Mt. Rose is the saddle-shaped peak straight ahead, and Slide Mountain (striped with ski runs and topped by several tall antennas) on the left.

    - All of the spreading housing developments on the right frost the surface of the huge Mt. Rose fan and glacial outwash complex that extends from the Carson Range eastward to here. There has been a large population change in the last 10 years in the Mt Rose Fan area. (can show 2 photos of the Mt Rose Fan…one taken in 1994 and one in 2004.)

    - Callahan Ranch Road intersection. If you were up in a plane you would see that you are crossing over a series of parallel, north-south-trending faults that cut across the broad alluvial fan.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storyline: See chart below for life zone storylines.
    - The following illustration portrays the life zones along the scenic Byway.

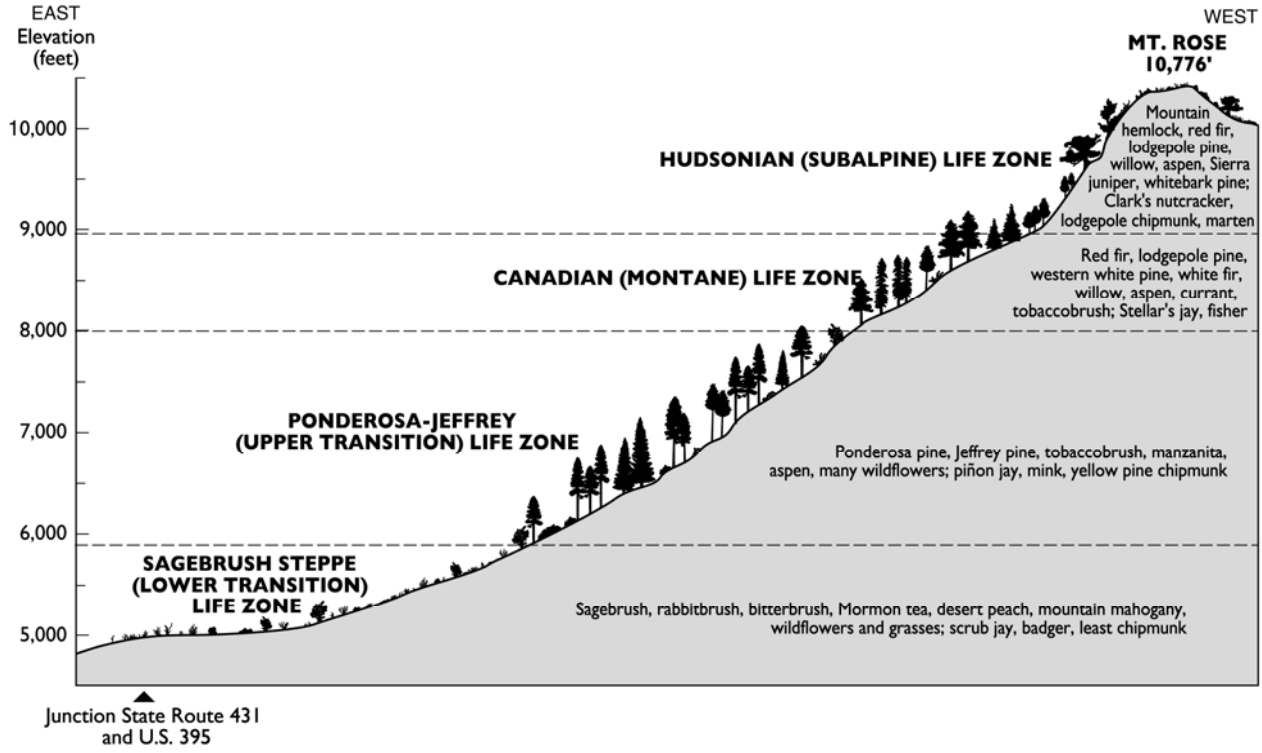


Illustration by Kris Pizarro, Nevada Bureau of Mines, special publication 19.

Interpretive Media Recommendations:
Include storylines in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at
Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

NOTE: Views will be shown in the media recommended above in a safe way. In publications and in the multi media program for use with the GPS Ranger Units, visitors will be encouraged to pull over to see views. Views can be viewed at safe pullouts along the Byway and in the GPS multi media program at any safe site to pull over. The views interpreted in the multi media program do not need to be seen at the actual physical location of the view, if a safe pullout is not available there.

Major faults along the eastern front of the Carson Range.

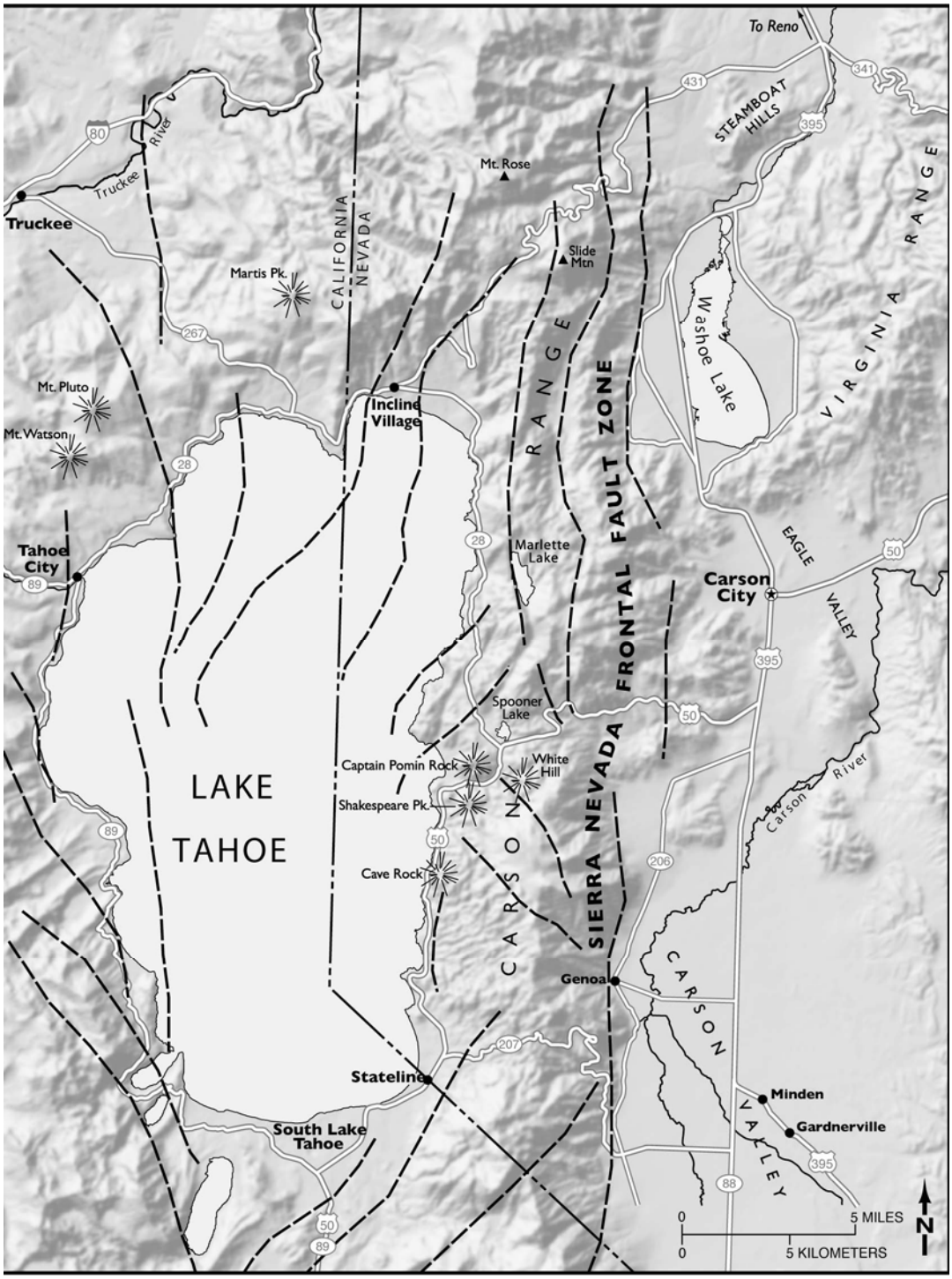


Illustration by Kris Pizarro, Nevada Bureau of Mines, special publication 19.

Interpretive Opportunity Inventory Form

Site #5: Callahan park, Galena school house and town site.

Location: Off Byway. Callahan Ranch Road, 1.7 miles from Scenic Byway.

Description: Washoe County park.

Existing Pullout: parking lot.

Seasonal Accessibility: all year

Interpretative Significance: This beautiful 25-acre park is nestled against the forested foothills of the Carson Range at the south end of Callahan Ranch Road off the Mt. Rose Hwy. This park features a group picnic area with BBQ (non-reservable), horseshoe pits, a children's playground, individual picnic sites and an open turf area. There are restrooms and water fountains, several benches, and a concrete pathway through the park. This park is also in close proximity to the Galena Creek Trail. The Galena school house is adjacent to Callahan park.

Callahan Park was inhabited by the Washoe. Later, miners came to the area looking for silver, but found only galena. It was not a prosperous place for silver mining.

Galena was once called the "Gayest, Rowdiest Little City in Western Nevada!" In the 1860s the Township was founded and developed as a silver mining property called "Galena." It was not economical to mine here because the silver content of the ore was too low to cover the cost of smelting. The town grew into a lumbering center, shipping timber to the Comstock silver mines in Virginia City. Galena housed sawmills, stores, schools and saloons. Two devastating fires in 1865 and 1867 wiped out the Galena Township and timber trade. After the second fire, the town was finally abandoned.

Then the ranchers came, and the significant ranchers were the Callahan family, two brothers from Ireland. The property is still owned by the Callahan family. The matriarch that is still here is Baye Jazmin Sloane. She was a foster mom to about a hundred kids. Washoe county

just recently bought the Galena Schoolhouse which is right next to the park and they will be restoring the schoolhouse. Callahan Ranch was one of Dr. Church's main overnight stops on his way to conduct snow surveys on Mt. Rose in early 1900's.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: restoring the schoolhouse.

Recommended Interpretive Topics: Galena town site, Callahan family ranching, Washoe.

Recommended Orientation Topics: Callahan Park.

Objectives:

- Visitors will be provided orientation to Callahan Park.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will be respectful while visiting and preserve cultural resources.

Main Theme:

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

  Subtheme:
  - The Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

    Storylines:
    - Callahan Park was inhabited by the Washoe. Though hunting occurred year round, fall was the most active time for hunting. Hunting required a great knowledge of the animals being hunted, their habits, the noises they made, etc. Deer and rabbit provided clothing and food.
    - Gathering began once the snows had melted and the first plants and early grasses appeared. The Washoe collected a wide variety of plants including, camas, bitterroot, sunflowers, pine nut seeds, choke cherry, gooseberry, currants, berries from the elderberry, miners lettuce, wild rhubarb and wild spinach greens. Indian tea and Indian balsam were gathered as medicines.
    - Through the ages, the Washoe have gained an impressive knowledge and understanding of plants. They knew what parts of a plant were edible, and what distinguished edible from poisonous plants. They even had learned where different plants could be found.

Subtheme:

- The town of Galena was formed in 1860, following the discovery of a silver-bearing lead sulfite ore (galena).

Storylines:

- In the 1860s the Township was founded and developed as a silver mining property called "Galena." It was not economical to mine here because the silver content of the ore was too low to cover the cost of smelting.

- The town grew into a lumbering center, shipping timber to the Comstock silver mines in Virginia City.

- Galena housed sawmills, stores, schools and saloons.

- Two devastating fires in 1865 and 1867 wiped out the Galena Township and timber trade. After the second fire, the town was finally abandoned.

Subtheme:

- Discovery of gold created a demand for food which was met through a thriving ranching industry established by Irish and Italian settlers.

Storylines:

- The significant ranchers were the Callahan family from Ireland.

- Suggest using quotes from the Oral History of the Harry P. Callahan as storylines, see Appendix A for detailed quotes and Oral History for very detailed quotes.

- "Our ranch was threatened by fire many times. I remember when Galena Hill east of my ranch had a timber fire on it. It was 1914, and I was a young man of 19 years. The funny part of that fire was that it left the house and the corrals and the haystacks—went round it and took that whole hill and took everything else. It went right around us! It was just a miracle. Fire does some funny things."

- "I remember one time I was looking for a bunch of horses way back of Mt. Rose in what they call Big Meadows. I came up over a hill, and horse tracks were thick up the trail. As I came over this knoll, I saw a little lake there and a log cabin. You know, I had an awful hard time dragging myself away from that. There was a feeling that I had lived there, and that was my home. I had that strong feeling. "

- "I've had a lot of happiness as a rancher. I love animals and I love nature. I always have, and I guess I got used to it when I was quite young. I think if I had to do it over again, I'd like to do it the same way. But the ranching situation is getting hopeless. I really worry about the future of ranching, because there's so many good ranches going under blacktop and houses, and the water is getting scarce. They're importing people from all over the world, and I really worry about the future. I look at some of these kids, and I kind of feel bad about what's going to happen."

- "When I was growing up, there were Indians living in this area, but not so many young people. The ones that was here were more or less old people. They'd come in sometimes and get willows and make baskets. They had a camp west of Washoe School when I went to school there in 1908. They also had a camp on the west shore of Washoe Lake. Indians never were very permanent. They'd stay a while one place and then move to a different place. They used to come to the ranch and sell pine nuts. "

- "I remember one time, there was an old Indian—Bill, we called him—and he came along with a big string of squirrels that he'd killed. My grandfather told him, "You ought to be careful with them, because we've been poisoning them. They were ruining the gardens and things." Boy, he got mad! He took them all, and throwed them all! He said, You poison squirrel, you poison Indian."

- "But I don't think there'd been any problem, because most of the squirrels looked healthy enough. They had pouches in their jaws where they carried their food, and as long as they were healthy when he killed them, I don't think that they were dangerous. But he throwed them all away. Everything."

Interpretive Media Recommendations: Exhibit inside Galena School House and two low profile interpretive panels near the entrance to Galena Creek Trail.

Design Concepts: Callahan Ranch history exhibit inside Galena School House. Audio message of selected quotes from the oral history of Harry Callahan. Visitors push a button to hear audio message. Life size cut out figure of Harry Callahan in front of wall mural of Callahan Ranch, ranch artifacts, photos of other members of the Callahan family.

- Exhibit of school teachers with photos and text.

- Panels in Callahan Park near trail:
  - Interpretive Panel one: Washoe Indian panel, featuring text and photos or illustrations.

  - Orientation Panel: Callahan Park Map.

- Nevada shaped panels near Galena Townsite NDOT Historic Marker:
  - Panel one: Galena Township panel featuring text and photos.

  - Panel two: Historic fire threat story, text and photos.

Interpretive Opportunity Inventory Form

Site #6: Byway views

Location: Mt. Rose Scenic Byway

Description: views.

Existing Pullout: no. (Field locations for Byway views will be further researched prior to development; may need roadway improvements.)

Seasonal Accessibility: all year views.

Interpretative Significance: Geology and wildfire views.
Mt. Rose Scenic Byway mile 5.0. The Galena Fire Station is constructed directly on one of the north-south-trending faults. In the pine forest area above the sagebrush-covered slopes, you can see large homes scattered throughout the Galena Forest development. These homes occupy that urban-forest interface that fire crews worry about during our long, dry, summer fire season. The Mt. Rose fan has experienced several large fires in the last two decades—these are visible as irregular-shaped greenish (in spring) or tan (in fall) patches amid the gray and olive green of the original sage/ bitterbrush steppe vegetation. The forest you see here today has very few old growth trees and is second and third generation timber. (Information from Nevada Bureau of Mines and Geology, special publication 19.)

Mt. Rose Scenic Byway mile 5.4. Timberline Road intersection on the right, Bordeaux Road on the left. The road cut on the right just beyond the intersection is composed of poorly sorted glacial outwash—boulders and cobbles of granodiorite plucked by small Mountain glaciers from the Carson Range and transported here by streams.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: geology, wildfires.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway is part of a unique ecotone between the Great Basin and the Sierra Nevada.
- Visitors will feel a sense of personal stewardship regarding the Byway's treasurers.
- Visitors will be respectful while visiting and preserve natural resources.

Main Theme:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

  Subtheme:
  - Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

    Storyline:
    - The road cut on the right just beyond the intersection is composed of poorly sorted glacial outwash—boulders and cobbles of granodiorite plucked by small Mountain glaciers from the Carson Range and transported by streams.

  Subtheme:
  - This region is a fire dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

    Storylines:
    - The Mt. Rose fan has experienced several large fires in the last two decades—these are visible as irregular-shaped greenish (in spring) or tan (in fall) patches amid the gray and olive green of the original sage/bitterbrush steppe vegetation. The forest you see here today has very few old growth trees and is second and third generation timber.

    - Fire suppression contributed to a history of recent fires. There is a possibility of catastrophic property damage from wildfire on the urban interface.

Interpretive Media Recommendations: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

NOTE: Views will be shown in the media recommended above in a safe way. In publications and in the multi media program for use with the GPS Ranger Units, visitors will be encouraged to pull over to see views. Views can be viewed at safe pullouts along the Byway and in the GPS multi media program at any safe site to pull over. The views interpreted in the multi media program do not need to be seen at the actual physical location of the view, if a safe pullout is not available there.

Interpretive Opportunity Inventory Form

Site #7: Whites Creek Trailhead

Location: Timberline Road

Description: (Off-Byway) trailhead on Forest Service land, Washoe county managed.

Existing Pullout: parking lot.

Seasonal Accessibility: Whites Creek Trailhead open during the day only in the summer; closed at night in summer, closed all winter.

Interpretive Significance: Trailhead.

Whites Creek Trailhead accesses the 19,000 acre Mt. Rose Wilderness. The Wilderness is co-managed with Lake Tahoe Basin Management Unit and the Humboldt-Toiyabe National Forest. Currently, the day-to-day activity is managed by Washoe County in the day use area. The trail also accesses the Jones Whites Creek Trail. It is a popular dog walking, hiking and biking area. Currently, the Whites Creek Trailhead is a gated trail, is closed at night in the summer, and is closed during the winter.

The trail is in a mixed conifer forest: Ponderosa, Jeffrey, and Mountain Mahogany. The Forest Service has done some fire reduction projects in the early 2000's in the mahogany stands by reducing some of the understory. The trailhead is in the urban interface zone.

Within the Thomas, Whites and Galena Creek drainages there are locations for Galena Creek Rockcress, (*Arabis rigidissima demota*) one of the U.S.D.A. Forest Service listed sensitive plants. It is a member of the mustard family. Another mustard relative which can be found at this elevation is the Sierra wallflower. This plant is actually more showy than the rockcress with its larger yellow blossoms.

Existing Media or Signage: wooden kiosk with regulation information (see photo above).

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Washoe, life zones, wildlife, fires, trail etiquette

Recommended Orientation Topics: Whites Creek Trails

Objectives:

- Visitors will be oriented to Whites Creek trail.

- Visitors will know that the Byway is part of a unique ecotone between the Great Basin and the Sierra Nevada.

- Visitors will understand urban interface issues with regard to fires, sensitive plants, animals and wilderness protection.

- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.

- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.

- Visitors will not litter and will pick up existing litter.

- Visitors will participate in conservation practices.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - Mt. Rose Scenic Byway is in Reno's backyard.

    Storylines:
    - This trail is a well-recognized natural areas in Reno's backyard.

    - Visitors are encouraged to use leave no trace principles.

  Subthemes:
  - Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storylines:
    - This area is in the Lower Transition life zone where annual precipitation is about 8 to 16 inches.

    - Visitors will find sagebrush, bitterbrush, desert peach, Mormon tea (Ephedra sp.), Mountain mahogany, and many wildflowers and grasses growing here.

- Animal inhabitants include black-billed magpie; piñon, scrub, and Stellar's jays; sage thrasher; various species of sparrow; jackrabbit; Nevada cottontail; pocket mice; kangaroo rats, and voles—and the ubiquitous coyote.

- As visitors travel into the trees, they note that all of them are in young, even-aged stands. The mix of age classes that typifies natural forests has been eliminated here by the effects of logging and fire.

- The sagebrush plant communities east and immediately west of Timberline Road are considered critical winter range for mule deer.

Subtheme:

- Sensitive plants and animals and the areas where they live need your help tprotect them.

Storylines:

- Within the Thomas, Whites and Galena Creek drainages there are locations for Galena Creek Rockcress and the Sierra wallflower, both sensitive plant species.

- Northern Goshawks have been sighted in Whites Creek drainage. Goshawks are considered a "Sensitive" species by the U.S. Forest Service.

- Galena Creek Rockcress, the Sierra wallflower and the Flammulated owl, all sensitive species, need your help to protect them.

Subtheme:

- This region is a fire-dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

Storylines:

- The Forest Service has done fire reduction projects in the mahogany stands by reducing some of the understory. The trail is in the fires and urban interface zone.

- With cheatgrass infestation, fire intervals are now as short as five years in shrubland that had 60-110 year fire intervals before conversion to cheat-grass. Forest Service is working towards minimizing cheatrass.

Subtheme:

- Learning conservation and wilderness ethics gives you the opportunity to take care of public lands in YOUR own backyard.

Storyline:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

- Visitors are encouraged to use leave no trace principles.

Interpretive Media Recommendations: Three interpretive panels placed in existing 3-panel kiosk.

Design Concept:

- White's Creek Trailhead Kiosk:
    - Panel one – Wilderness map, LNT principles and text, photos of wildlife, mule deer, goshawks.

    - Panel two – Lower transition life zone panel; Galena Creek Rockcress and the Sierra wallflower, sensitive plant species, and photos.

    - Panel three – Urban interface/fire reduction panel, text, and before and after photos of treatment.

Interpretive Opportunity Inventory Form

Site #8: Thomas Creek Trailhead

Location: Timberline Road

Description: (Off-Byway) trailhead on Forest Service land, Washoe county managed.

Existing Pullout: parking lot.

Seasonal Accessibility: Thomas Creek trailhead open all year, day use only.

Interpretive Significance: Trailhead.

Thomas Creek Trailhead - At the beginning of the Thomas Creek Trail there is a picnic site, restroom, and interpretative sign for an archeological rock petroglyph. This is a Washoe Native people site and there is some discussion about an ancient Native people before the Washoe, the Martis. This site also provides access to the Mt. Rose Wilderness, and equestrian, hiking and biking access. This trail is open all year.

The trail is in a mixed conifer forest: Ponderosa, Jeffrey, and Mountain Mahogany. The Forest Service has done some fire reduction projects in the early 2000's in the mahogany stands by reducing some of the understory. The trail is in the urban interface zone.

Within the Thomas, Whites and Galena Creek drainages there are locations for Galena Creek Rockcress, (*Arabis rigidissima demota*) one of the U.S.D.A. Forest Service listed sensitive plants. It is a member of the mustard family. Another mustard relative which can be found at this elevation is the Sierra wallflower. This plant is actually more showy than the rockcress with its larger yellow blossoms.

Existing Media or Signage: petroglyph rock interpretive panel. Three panel wooden kiosk with regulation information (see photo above.)

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Washoe, life zones, wildlife, fires, trail etiquette.

Recommended Orientation Topics: Thomas Creek Trail.

Objectives:

- Visitors will be oriented to Thomas Creek trail.
- Visitors will know that the Byway is part of a unique ecotone between the Great Basin and the Sierra Nevada.
- Visitors will understand urban interface issues with regard to fires, sensitive plants, animals and wilderness protection.
- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.
- Visitors will participate in conservation practices.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.
- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.
- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storylines:

- Suggest using the following quote as storyline: "By 1861 Washoe life had changed so much that the U.S. Indian Agent reported: They have learned that the great chief or captain at Washington, through the lesser captain here, must feed them, or help them at least. There is great justice in this request."
- "The streams in which they formerly fished are now all spoiled for that purpose by the operating of the miners and the washing off the ores and metals. They are indeed most all diverted from their original courses, or dammed so frequently that the fish have disappeared from them."
- " Lake Tahoe, lying in the county of the Washoes, and from which they formerly obtained large quantities of the best kind of fish, is now taken possession of by the Whites, and has become a watering place, to which large numbers from this

Territory and California resort, and from which this poor Native people are virtually excluded. The hills and plains over which roamed plenty of game are now occupied by the Whites, and the game has fled, like the Indians from their presence." (Ingalls 1913:35).

Subtheme:

- Mt. Rose Scenic Byway is in Reno's backyard.

Storylines:

- These trails are both well-recognized natural areas in Reno's backyard.
- Visitors are encouraged to use leave no trace principles.

Subthemes:

- Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.
- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- This area is in the Lower Transition life zone where annual precipitation is about 8 to 16 inches.
- Visitors will find sagebrush, bitterbrush, desert peach, Mormon tea (Ephedra sp.), Mountain mahogany, and many wildflowers and grasses growing here.
- Animal inhabitants include black-billed magpie; piñon, scrub, and Stellar's jays; sage thrasher; various species of sparrow; jackrabbit; Nevada cottontail; pocket mice; kangaroo rats, and voles—and the ubiquitous coyote.
- As visitors travel into the trees, they note that all of them are in young, even-aged stands. The mix of age classes that typifies natural forests has been eliminated here by the effects of logging and fire.
- Golden eagles nest in Thomas Creek Canyon. Golden eagles rely on the sagebrush ecosystems due to jack rabbit populations which inhabit those areas. Jackrabbits are an extremely important part of their diet.

Subtheme:

- Sensitive plants and animals and the areas where they live need your help tprotect them.

Storylines:

- Within the Thomas, Whites and Galena Creek drainages there are locations for Galena Creek Rockcress and the Sierra wallflower, both sensitive plant species.

- Flammulated owls have been sighted in Thomas Creek Canyon also. Flammulated owls are considered a "Sensitive" species by the U.S. FS.

- Galena Creek Rockcress, the Sierra wallflower and the Flammulated owl, all sensitive species, need your help to protect them.

Subtheme:

- This region is a fire-dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

Storylines:

- The Forest Service has done fire reduction projects in the mahogany stands by reducing some of the understory. Both trailheads are in the fires and urban interface zone.

- With cheatgrass infestation, fire intervals are now as short as five years in shrubland that had 60-110 year fire intervals before conversion to cheat-grass. Forest Service is working towards minimizing cheatrass.

Subtheme:

- Learning conservation and wilderness ethics gives you the opportunity to take care of public lands in YOUR own backyard.

Storyline:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

- Visitors are encouraged to use leave no trace principles.

Interpretive Media Recommendations: Three interpretive panels placed in existing 3-panel kiosk.

Design Concept:

- Thomas Creek Trailhead Kiosk:
  - Panel one – Wildlife panel, Flammulated owls, golden eagles, jackrabbits, text and photos.
  - Panel two – Washoe panel, text and photos.
  - Panel three –Wilderness/Conservation panel; LNT principles, trail etiquette, text, photos, and trail map.

Interpretive Opportunity Inventory Form

Site #9: Galena Creek Visitor Center

Location: Mt. Rose Scenic Byway

Description: planned visitor education center site.

Existing Pullout: None Currently

Seasonal Accessibility: all year.

Interpretive Significance: Gateway to Byway.

Galena Creek Regional Park Expansion. The visitor center will be the focal point of the Mt. Rose Scenic Byway, providing a comprehensive look at the Byway amenities and experience.

This project is a multi-million dollar partnership between Humboldt-Toiyabe National Forest, Wahose County, and Nevada Department of Transportation to expand day use recreation facilities to meet growing urban population recreation demands.

Mt. Rose Scenic Byway mile 6.8. From this point on the Byway, the vegetation changes from that of the Lower Transition life zone (mainly sagebrush) to that of the Upper Transition life zone which is characterized by ponderosa and Jeffrey pines (the pines here are second and third growth), manzanita, tobaccobrush, aspen, and many wildflowers. Annual precipitation in this zone is over 16 inches. Fauna include owls, woodpeckers, mule deer, chipmunks, and squirrels. (From Nevada Bureau of Mines and Geology, special publication 19.)

Existing Media or Signage: The Galena Visitor Education Center Interpretive Plan is complete. The exhibit Plan is 100% complete. Both of these plans were completed by a different contractor. Following are the major themes and exhibits recommended in the Visitor Center Interpretive Plan.

Statements of Significance:

- The Galena Creek region has a history of human occupation extending over at least 6000 years.
- Galena Creek is a regionally-significant natural area being impacted by its proximity to one of the fastest-growing metropolitan regions in the nation.
- The Galena Creek region is part of a unique ecotone between the Sierra Nevada and the Great Basin.
- The Galena Creek region is an important contemporary and historic travel corridor from Truckee Meadows to Mt. Rose, Slide Mountain and Lake Tahoe.

Note: This Mt. Rose Scenic Byway Interpretive Plan recommends changing the themes in the Galena Visitor Center Interpretive Plan to read as follows. These changes integrate the visitor center's themes with the Byway's objectives, themes and subthemes.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.

- Visitors will know that the Byway offers a rich natural and cultural legacy.

- Visitors will know that the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

- Visitors will understand urban interface issues with regard to fires, sensitive plants and wilderness protection.

- Visitors will understand the wilderness and conservation ethics along the Byway.

- Visitors will learn that their actions may affect life along the Byway.

- Visitors will feel that the Byway's historic, cultural and natural resources are valuable.

- Visitors will feel inspired by the cultural and historic legacy of the Byway.

- Visitors will feel part of nature along the Byway.

- Visitors will feel a sense of personal stewardship regarding the Byway's treasurers.

- Visitors will participate in conservation practices.

- Visitors will share their experiences, awareness, respect and stewardship of resources.

- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Central Theme:

- The abundance of Galena Canyon's resources has attracted humans for millennia, leaving us a rich legacy to preserve.

Main Themes:

- Exploitation of natural resources following Euro-American settlement altered Galena Canyon.

- Today, the rapid pace of modern development makes us wonder what environmental changes the future may hold, and what lessons might be learned from early cultures.

- Resource management issues are more complicated, and user conflicts are intensified in natural areas on the urban/wildland interface.

- Galena Canyon is located in a transition zone between arid, sagebrush-dotted valleys and moister, forested Mountains.

- The Galena Creek Regional Visitor Center, one of the gateways to Lake Tahoe, is located on the Mt. Rose Scenic Byway.

Subthemes:

- Galena Canyon is in Reno's backyard.

- Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

- This region is a fire dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

- Sensitive plants and animals, and the areas where they live, need your help to protect them.

- Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lessons learned here.

- Your actions teach and inspire others to follow wilderness and conservation ethics.

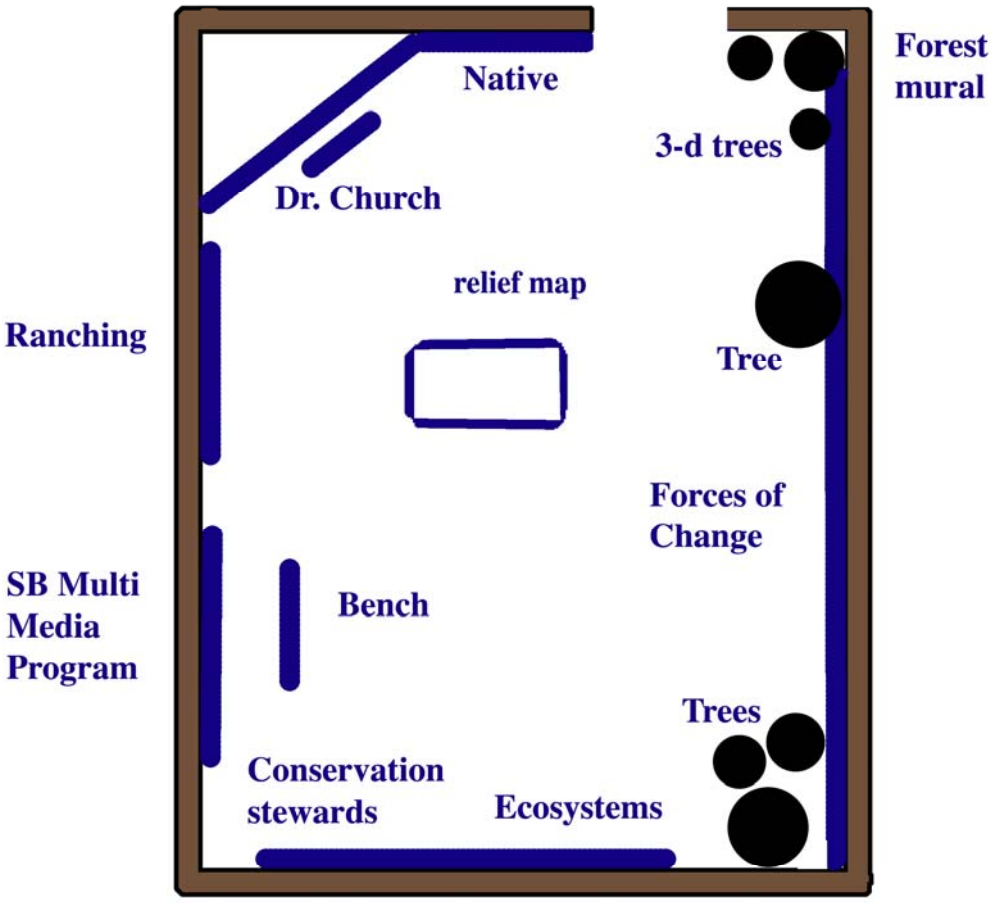
- Your desire to create a Legacy for future generations helps preserve the Mt. Rose SB.

- The Byway travels through four life zones: Lower Transition life zone, Upper Transition life zone, Canadian (montane) life zone, and Hudsonian or subalpine life zone. (See illustration, page 29.) The Byway is home to a variety of sensitive plants that occur only here. The Byway area is home to several animals that only live here.

- Mt. Rose Scenic Byway is a popular present day and historic pathway from Reno to Mt. Rose and Lake Tahoe.

Recommendations for Exhibits and Programs – Note: Another contractor completed the Visitor Center Interpretive Plan and Exhibit Plan. See Exhibit Plan dated 11/06 and Visitor Center Interpretive Plan by Exhibit Design Associates.

Although the Mt. Rose Scenic Byway Interpretive Plan contract does not include Visitor Center exhibit planning or design, this **Byway** Interpretive Plan offers the following comments to the Exhibit Plan, dated 11/06. The Scenic Byway Interpretive Plan suggests using the visitor center floor plan more effectively, possibly, as shown below.



This Mt. Rose Scenic Byway Interpretive Plan suggests the following changes to the exhibits at the visitor center. These changes are recommended to focus on the themes.

The addition of a Scenic Byway exhibit, a native exhibit, a conservation steward exhibit, and an audio visual multi media exhibit for the visitor center are recommended.

- Scenic Byway exhibit – multi-media 10 minute video program.
- Native exhibit – wall mural, text, and 3-d props.
- Change in Ranching exhibit- Suggest deleting the artifact cases and replacing them with a wall mural with 3 d props.
- Conservation exhibit – people cut outs with audio messages about conservation ethics.
- Ecosystems exhibit – instead of unique plants display. Suggest interpreting all 4 transition zones the Byway travels through, using mural, plants and animals, and text. Sensitive plant species is one part of the ecosystems exhibit.

- Tree exhibit – suggest using fabricated or plastic trees at the ends of the "Forces of Change exhibit to create a feeling of a forest scene, also plants and animals.

- DVD player to show DVD's.

It is recommended to have one relief model map in the center of the room and use the wall space for the multi-media Scenic Byway exhibit, or place the wall map or the Scenic Byway exhibit in the lobby.

The following interpretive programs are recommended at the visitor center:

- Friday Night Insight at the Visitor Center: If the multi purpose room or the amphitheater is available for community presentations, weekly or monthly presentations are recommended by the Forest Service and Washoe County and partners such as: Audubon Society, Desert Research Institute, Bureau of Mines and Geology, Nevada Land Conservancy, Friends of Nevada Wilderness, and others. The purpose of these gatherings should be to educate people about conservation and wilderness ethics, encourage them to feel a part of the Byway. and develop positive protective values and behaviors towards the resources of the Byway.

- Living History Theater: Live historic theater, i.e. Dr. Church, Native storytelling, and music once a month during the summer outside at the visitor center, once the amphitheater is built. UNR's oral history CD would be a valuable asset to a local theater group. They may wish to choose certain historic people and convey their stories through living history theater.

- Outfitter Guide possibilities: Tour guides taking visitors into the backcountry to hike trails within the Mt. Rose Scenic Byway, with box lunch, music, wilderness ethics, conservation and stewardship values, and storytelling.

- Live Interpretive Programs**:** Live interpretive programs are very popular with visitors. This plan suggests the visitor center staff or volunteers conduct weekly live interpretive programs at the visitor center. Once the trail is built at the visitor center,naturalist led guided interpretive hikes are encouraged.

- This plan encourages the continuation of existing Interpretive Programs at Galena Creek Park. Attendance at campfire programs offered during the summer at Galena Creek Park has shown a steady rise since 1990, meeting capacity in 2000. (See page 35 for list of programs offered.)

Interpretive Opportunity Inventory Form

Site #10: Galena Creek Regional Park-North

Location: Mt. Rose Scenic Byway

Description: Jones-Whites Creek Loop Trailhead & Bitterbrush Nature Trail

Existing Pullout: two parking lots

Seasonal Accessibility: open all year.

Interpretive Significance: Multi-use trailhead and site of interpretive programs.

Mt. Rose Scenic Byway mile 7.1.

The north entrance to Galena Creek Park is on the right. There are picnic facilities and a restroom here. Great hiking trails provide access to the Mt. Rose Wilderness Area. Visitors can hike along trails all the way up to Mt. Rose from here. From the picnic area visitors can enjoy the creek and the riparian stringer of vegetation—cottonwood, willow, alder, and dogwood—that lines it. This contrasting habitat supports trout, squirrels, dippers (ouzels), kingfishers, and other wetland-dependent plants and animals. On the drier slopes, shade-tolerant firs appear among the pines as the trail climbs into higher life zones. The Loop trail is second most popular on the Carson Ranger District; accesses White's Creek Canyon, Mt. Rose Wilderness and Church's Pond. There is a current amphitheatre at this site.

Existing Media or Signage: 3-panel wooden kiosk with regulations information.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: life zones.

Recommended Orientation Topics: hiking trail and site map.

Objectives:

- Visitors will understand urban interface issues with regard to fires, sensitive plants and wilderness protection.

- Visitors will feel part of nature along the Byway.

- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.

- Visitors will not litter and will pick up existing litter.

Main themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

- Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lessons learned here.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storylines:
    - Visitors can hike along streams all the way up to Mt. Rose from here.

    - Visitors can enjoy the creek and the riparian plant community.

    - On the drier slopes, shade-tolerant firs appear among the pines as the trail climbs into higher life zones.

  Subtheme:
  - The Mt. Rose Scenic Byway is in Reno's backyard.

    Storyline:
    - Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

Subthemes:

- Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

- Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lessons learned here.

- Your desire to create a Legacy for future generations helps preserve the Mt. Rose Scenic Byway.

Storyline:

- Visitors will be encouraged to use Leave No Trace principles.

Interpretive Media Recommendations: three interpretive panels placed in wooden kiosk.

Design Concept:

- Panel one - life zone illustrations, text and photos.

- Panel two - wilderness panel.

- Panel three – trail map.

Recommend new audio and visual equipment for public presentation and use by groups who rent the site, ranger led hikes, and evening amphitheatre style family programs.

Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Interpretive Opportunity Inventory Form

Site #11: Galena Creek Regional Park-North Interpretive Loop Trail

Location: Mt. Rose Scenic Byway

Description: proposed trail.

Existing Pullout: no.

Seasonal Accessibility: open all year.

Interpretive Significance: Future trailhead that leads to visitor center.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: design and construct new trail.

Recommended Interpretive Topics: snow survey science history, historic travel route, stagecoach stop, dude ranch, historic flooding, geology, life zones, conservation.

Recommended Orientation Topics: hiking trail and site map.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.
- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.
- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storyline:

- Visitors can hike from here to the visitor center and go through the lower transition life zone to the upper transition life zone?

Subtheme:

- The Mt. Rose Scenic Byway is in Reno's backyard.

Storyline:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

Subtheme:

- Innovative snow surveying techniques used around the world began at Mt. Rose.

Storylines:

- Dr. James Church was the founder of the modern snow survey, a technique that is used throughout the world today to predict seasonal water flow from precipitation stored in the form of snow.

Subtheme:

- Mt. Rose Scenic Byway is a popular present day and historic pathway from Reno to Mt. Rose and Lake Tahoe.

Storylines:

- **I need information about stagecoach stop, dude ranch and historic flooding.**

Recommended Interpretive Media: Once trail is built, possible interpretative media include: trailside panels, artifacts, reconstructed Dr. Church cabin, stagecoach, Washoe homesite. (Note these are not included in budget figures, since trail is not designed nor built yet.)

Interpretive Opportunity Inventory Form

Site #12: Galena Creek Regional Park- South

Location: Mt. Rose Scenic Byway

Description: Camp We-Ch-Me Lodge, Stone House, Fish Hatchery

Existing Pullout: parking lot.

Seasonal Accessibility: open all year.

Interpretive Significance: Stone House, Fish Hatchery, Camp We-Ch-Me, history of park and park site as former ranch.

Stone House

Mt. Rose Scenic Byway mile 7.3. The south entrance to Galena Creek Park shares the entrance to the Nevada Department of Transportation facility on the right.

This is a flood area, and the runoff goes into the Great Basin/desert. The Forest Service removed their former campground here after it was flooded out in the 1940's. Campfire Girls Camp We-Ch-Me lodge is at this site. The Civilian Conservation Corps built Stone House (former Ranger residence) is also at this site.

The lodge is called Camp We-ch-me which means "where children meet."
Washoe County remodeled the lodge over the last couple of years. The tent cabins were torn down 3-4 years ago. Camp We-Ch-Me is not used in the winter-time. The road is not plowed in the winter. Washoe County purchased a facility that was owned by the Campfire Girls. Washoe County, with a whole lot of partners, and over several years, has extensively renovated it. The lodge is a highly desirable facility and it is available for rent by the public.

There was an actual fish hatchery on this site. Three years later Galena Creek flooded, and silted in the intakes, and it was too much work to try to clean everything out.
The Nevada Department of Wildlife stocks the ponds in the summer. People fish at the pond year round.

The Civilian Conservation Corps built Stone House which became a Forest Service Ranger residence. The Stone House will house new interpretive panels in 2007. These panels may eventually be moved to outside the new Visitor Education Center. The Stone House was built as a warming hut for snow play hill.

This site is also in the urban interface zone, so Washoe County, the U.S.D.A. Forest Service and Nevada Division of Forestry have done a lot of fuel reduction work to reduce fire danger. (Off-Byway) Earthquake fault below Galena Creek, near Galena Estates.

Physical Infrastructure Changes Recommended: none

Existing Media or Signage: Current exhibits inside the Stone House. New panels have been designed conveying the following information. These panels may be eventually moved to the visitor center, once it is built.

Existing Panel Interpretive Topics: Galena history, native history, snow surveying, wildfires, birds, animals, trees, wildflowers.

Recommended Orientation Topics: Galena Regional Park south.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel part of nature along the Byway.
- Visitors will share their experiences, awareness, respect and stewardship of resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.
- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

Existing Panels Subthemes and Storylines:

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- What Type of Bears Live in the Galena & Mt. Rose Area?
- Do Mountain Lions Live Here?
- Did You Know Bats are NOT Blind?
- What Do Great Horned Owls Eat?
- How Do You Recognize a Stellar's Jay?
- What Bird Walks Under Water?
- The Jeffrey Pine's cones are gentle to the touch, unlike the Ponderosa's cones.
- The largest living organism in the Galena forest is an Aspen "clone."
- There are hundreds of wildflowers that bloom throughout the park at different times.
- The Washoe Pine is a rare Galena area tree that was the last native pine species to be discovered. Found in 1938 on Mt. Rose, this pine was named to honor the Washoe Indians in 1945.

Subtheme:

- The town of Galena was formed in 1860, following the discovery of a silver- bearing lead sulfite ore (galena).

Storyline:

- The Township was founded and developed as a silver mine called "Galena."

Subtheme:

- Washoe and Paiute people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storylines:

- The Washoe and Paiute were among the region's original inhabitants. Historic and prehistoric findings locate the Paiute from Carson Valley to Pyramid Lake. Campsites for both Native peoples still can be found in this area.

- Fall was a time for gathering and hunting to enable the Native peoples to sustain themselves over the winter months. Pine nuts, mule deer, fish and rabbits provided much of their diet. The Indians used snowshoes for travel in heavy snow.

- With the impact of Euro-Americans in the 1800s, the Washoe and the Paiute adapted to changing times and a new economy by weaving and selling beautiful basketry and becoming ranchers, farmers and guides. The Native peoples continue to live in the region.

Subthemes:.

- Innovative snow surveying techniques used around the world began at Mt. Rose. In 1906, Mt. Rose was used as an "outdoor lab by Dr James E. Church.

Storylines:

- In1906, the 10,776- foot Mountain was used as an "outdoor lab" by Dr. James E. Church, Jr. Dr. Church perfected a method of measuring depth and water content of snow by collecting a core sample in a tube and weighing it. This method is now called the Nevada System. As a child, Church got this idea from watching the grocer measure density of butter with a tube.

- In 1895, on a dare, the 26 - year - old Church became the first person to climb Mt. Rose in winter. Church had a simple philosophy: "Nature tells you things if you question her and open your eyes." In 1980 the north summit of Mt. Rose was officially named "Church Peak."

Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

Storylines:

- The snow pack in the Galena and Mt. Rose area can average 400 inches per year (the height of a three story building!) providing the ultimate winter playground.

- Humans have been using skis, snowshoes and sleds as a means of travel and fun for hundreds of years. Today, visitors to the Galena Creek Regional Park enjoy cross country skiing, snow shoeing, hiking and snow play.

Subtheme:

- Mt. Rose Scenic Byway is a popular present day and historic pathway from Reno to Mount Rose and Lake Tahoe.

Storyline:

- This 22-mile stretch of road is no picnic for the Nevada Department of Transportation to keep open. Snow can pile up over 30 feet - a difficult job for dedicated road crews.

Subtheme:

- This region is a fire-dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

Storyline:

- Not all fires are bad. A constructive fire helps maintain a healthy forest.

Recommended New Interpretive Media: Include storylines in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

This plan encourages the continuation of existing Campfire Programs at Galena Creek Park. (See page 35 for list of programs offered.)

Interpretive Opportunity Inventory Form

Site #13: Byway views

Location: Mt. Rose Scenic Byway

Description: geology Byway views.

Existing Pullout: (Field locations for Byway views will be further researched prior to development; may need roadway improvements.)

Seasonal Accessibility: all year views.

Interpretive Significance: geologic views.

Mt. Rose Scenic Byway mile 8.5. Beginning as you round the tight bend and extending for about the next 0.6 mile, andesitic mudflow (lahar) deposits are exposed in the highway cuts on the right. Mudflows look just like their name implies—they are poorly stratified to unstratified (non layered) volcanic debris flows containing rounded to angular cobbles and pebbles of volcanic rock embedded in a mud-like matrix.

Mt. Rose Scenic Byway mile 9.2. Weathered granodiorite is exposed on the left. What was once forest floor in this area is now covered with a thick shrubbery of manzanita, tobaccobrush, and bitterbrush which followed a fire that burned stands of Jeffrey pine. Mountain mahogany and squaw carpet are also found here. Bitterbrush yields quality forage and provides good habitat for mule deer.

Mt. Rose Scenic Byway mile 10.9. Mt. Rose (elev. 10,776 feet), with a light brown mantle of andesite at its summit, is directly ahead. Note how aspect (direction the slope faces) influences the distribution of trees at higher elevations. (Information from Nevada Bureau of Mines and Geology, special publication 19.)

Coopers hawk, a cousin to the northern goshawk nests in the local area. Coopers and goshawks nest in similar habitat, although coopers hawks tend to be a bit more opportunistic than goshawks, nesting in more open canopy conditions and often even in urban environments.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: geology and wildlife.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway is part of a unique ecotone between the Great Basin and the Sierra Nevada.

- Visitors will feel part of nature along the Byway.

- Visitors will be respectful while visiting and preserve natural resources.

Main theme:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

  Subtheme:
  - Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

    Storylines:
    - Mt. Rose (elev. 10,776 feet), with a light brown mantle of andesite at its summit, is directly ahead.

    - Andesitic mudflow deposits are exposed in the highway cuts on the right.

    - Weathered granodiorite is exposed on the left.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storyline:
    - Coopers hawk, a cousin to the northern goshawk nests in the local area.

    - Mountain mahogany and squaw carpet are also found here. Bitterbrush yields quality forage and provides good habitat for mule deer.

  Subtheme:
  - This region is a fire-dependent ecosystem.

    Storyline:
    - What was once forest floor in this area is now covered with a thick shrubbery of manzanita, tobaccobrush, and bitterbrush which followed a fire that burned stands of Jeffrey pine.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

NOTE: Views will be shown in the media recommended above in a safe way.
In publications and in the multi media program for use with the GPS Ranger Units, visitors will be encouraged to pull over to see views. Views can be viewed at safe pullouts along the Byway and in the GPS multi media program at any safe site to pull over. The views interpreted in the multi media program do not need to be seen at the actual physical location of the view, if a safe pullout is not available there.

Interpretive Opportunity Inventory Form

Site #14: Sky Tavern Ski Area

Location: Mt. Rose Scenic Byway

Description: ski area owned by City of Reno.

Existing Pullout: parking lot.

Seasonal Accessibility: all year.

Interpretive Significance: Sky Tavern historic development.

Mt. Rose Scenic Byway mile 11.7. Sky Tavern is on the right. This site has a rich local history of community support and offers ski education for families by the City of Reno. The old Ringer chair lift started here and transported skiers to the Mt. Rose Ski Bowl. This was the end of the plowed road, and the old highway is still visible. This is a good place to interpret movie star days and the first ski area in the Carson Range.

If you research the history books, this was the place to come ski when skiing was very popular and Reno was a big jet-set place in the 1900's. All the movie stars used to come up here and there are some great photos in the lodge with movie stars and their old equipment, the old wood skis and the old bindings and the leather boots. Now that the City of Reno owns it, it is the Youth Ski Program.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: history of Sky Tavern.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Theme:

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

  Subtheme:
  - Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

    Storylines:
    - The first ski area in the Carson Range, Sky Tavern, opened in 1945.
    - Sky Tavern was the place to come ski when skiing was very popular and Reno was a big jet-set place in the 1900's.
    - Movie stars came to Sky Tavern with their old wood skis, old bindings and boots.
    - The City of Reno now owns it and it is the Youth Ski Program.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Interpretive Opportunity Inventory Form

Site #15: Browns Creek Trailhead

Location: Joy Lake Road – Washoe County land.

Description: trail.

Existing Pullout: ?

Seasonal Accessibility: ?

Interpretive Significance: County trail and lake.

Existing Media or Signage: ?

Physical Infrastructure Changes Recommended: ?

Recommended Interpretive Topics: Reno's backyard, fire, trail etiquette.

Recommended Orientation Topics: hiking trail and site map.

Objectives:

- Visitors will know how to access Brown's Creek trail.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.

Main Theme:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the sierra Nevada and the Great Basin.
- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- This trail travels through the lower transition life zone to the upper transition life zone?

Subtheme:

- The Mt. Rose Scenic Byway is in Reno's backyard.

Storyline:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

Subtheme:

- This region is a fire-dependent ecosystem.

Storyline:

- What was once forest floor in this area is now covered with a thick shrubbery of manzanita, tobaccobrush, and bitterbrush which followed a fire that burned stands of Jeffrey pine.?

Recommended Interpretive Media: Trailhead stone monument, one panel interpreting fire, conservation and trail etiquette.

Orientation Media: Trail map.

Interpretive Opportunity Inventory Form

Site #16: Old rustic historic red ski tower ("Ringer" chair lift).

Location: Mt. Rose Scenic Byway

Description: historic chair lift

Existing Pullout: no…and unsafe to stop on highway at actual location.

Seasonal Accessibility: visible year round.

Interpretive Significance: This chair lift used to carry skiers to the Reno Ski Bowl from Sky Tavern. (old drawing in Mt. Rose lodge shows this chair lift on it.)

In the old days they didn't plow the road past Ski Tavern, and then later they didn't plow past Slide Mountain ski area and travelers could not travel over the pass in the winter. There have been 3 versions of Mt Rose Highway. In the past Lake Tahoe pretty much shut down in the winter, so there was no need to plow the road past the ski areas.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: The Forest Service and Washoe County are discussing moving the tower from its present location to another location where it could be interpreted. Washoe County has suggested moving it to the East Bowl parking lot and incorporating it into the County's interpretive and trail developments there. Other potential sites might include sky Tavern (site #10) or Galena Park – South (Site #8), near the old ski jump hill.

Recommended Interpretive Topics: ski history.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Theme:

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.
  Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

  Storyline:
  - This chair lift used to carry skiers to the Reno Ski Bowl from Sky Tavern.

Recommended interpretive media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Interpretive Opportunity Inventory Form

Site #17: The Chutes and Chuter Chair lift

Location: Mt. Rose Scenic Byway; Road junction with State maintained access road to East Bowl, (Highway to the Sky).

Description: chair lift.

Existing Pullout: no pullout. People pull off on the shoulder of the road now.

Seasonal Accessibility: visible year round.

Interpretive Significance: Best place to view fall color on the Byway. The Chutes and Chuter Chair lift ; aspen grove at base of chair lift; popular fall Aspen color stop; nearby Hidden Lake filling in and being overgrown by pines. No trail to Hidden Lake, but it is 1/4 mile away from Byway, on west side of highway.

This is a Class A avalanche zone. Before NDOT started to control avalanches here, to keep the road open, the avalanche zones extended farther across the slopes than they do now. For centuries the avalanches were falling down the slopes and knocked down everything in their path. Another avalanche slide path is up further on the highway on the east side of pass.

When the Nevada Department of Transportation decided to keep the road open they then needed to control the avalanches. They created a way to create artificial avalanches using a French technology known as “gas exchange” or “gas-ex”. (See paragraph below for definition of Gaz-ex). Avalanche control is also done with explosive charges into avalanche-prone areas to release the dangerous snow slides.

In 1992 NDOT installed the unique Gaz-ex avalanche control system. Gaz-ex (Gas explosive) are large, downward facing pipes that are frequently seen on known avalanche prone ridges and couloirs. The Gaz-ex pipe is principally an expansion chamber that directs the hot gases to the zone at risk. The actual technology consists of a propane and oxygen tank located at a distance from the Gaz-ex tube. The gases are piped to an expansion chamber located at the base of the tube, mixed and ignited as directed by computer from a safe distance away.

Under natural conditions, the pile of snow comes down the hill and piles up, picks up rocks and debris and scrapes the hill and cleans it off. Disturbance and lots of water are good conditions for aspen. Because the conditions have been right, the aspen grown larger at the bottom of the hill. The slides have not been as big, since NDOT starting controlling the avalanche slides and the Chutes are now managed for downhill skiing. Because of this, the

aspens are now big trees. Every fall when the trees change color, people stop and take photos. Historic avalanches have created the environment for the aspens!

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: aspen, avalanches, Hidden Lake, succession.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel part of nature along the Byway.
- Visitors will be respectful while visiting and preserve natural resources.

Main Theme:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

  Subtheme:
  - Geologically, the Byway is in a transition zone between the Sierra Nevada province and the Basin and Range province.

    Storylines:
    - Historic avalanches have created the environment for the aspens!

  Subtheme:
  - Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

    Storyline:
    - Hidden Lake is a good example of succession.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour. Name of lake should not be mentioned since access is restricted. The succession story can be told in a generic way.

Interpretive Opportunity Inventory Form

Site #18: East Bowl parking lot of Mt. Rose Ski Tahoe

Location: .9 mile off Byway on access road, (the Highway to the Sky).

Description: Joint partnership between private (Mt. Rose Ski Tahoe) and public (Washoe County). This is a public-private partnership with most of the development for the trail head and the trail interpretative information being paid for by funds from Mt. Rose Ski Tahoe.

Existing Pullout: parking lot.
Seasonal Accessibility: after snow is gone.

Interpretive Significance: Best views of Washoe Valley and Virginia Range.

Mt. Rose Scenic Byway mile 13.1. The access road and the beginning of the parking lot offers fantastic views of the Virginia Range and the Washoe Valley area. The access road is a well known glider launch location. This is a private ski area operating on leased Washoe County property, and in the summer of 2007 Washoe County will be installing a picnic area off of the parking lot where people can picnic and enjoy the views of the Washoe Valley which is east of here. Also a trail will be built on Washoe County property which is next to the parking lot. Washoe County already has some interpretative panels under design which they are working on with Mt. Rose Ski Tahoe. Directional signage will be added to direct people to the picnic area. It is a beautiful place to be able to interpret the environmental mitigation efforts that Mt. Rose Ski Tahoe is doing to preserve the Mountain in the summer time as well as during the winter time.

This site offers a spectacular view of Great Basin valleys and ranges. Washoe Lake and Little Washoe Lake are in the valley immediately below and the Virginia Range is in the background to the east. The gray out wash between the view point and the north end of Washoe Lake is debris from the Slide Mountain landslide. The Scripps Wildlife Area and Washoe Lake State Park are visible up the center of Washoe Valley.

Existing Media or Signage: Three interpretive panels have been fabricated and will be installed in the summer of 2007 in the Washoe County picnic area site.

Physical Infrastructure Changes Recommended: Mt. Rose Ski Tahoe is planning for a new lodge and there may be interpretive opportunities available on their view decks.

Recommended Interpretive Topics: Virginia Range, Washoe Valley area, wildlife.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

- Visitors will know that the Byway offers a rich natural and cultural legacy.

- Visitors will feel that the Byway's historic, cultural and natural resources are valuable.

- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving a rich legacy.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- Geologically, the Byway is in a transition zone between the Sierra Nevada province and the Basin and Range province.

Storylines:

- This site offers a spectacular view of Great Basin valleys and ranges.

- Washoe Lake and Little Washoe Lake are in the valley immediately below and the Virginia Range is in the background to the east.

- The gray outwash between the view point and the north end of Washoe Lake is debris from the Slide Mountain landslide.

- The Virginia Range is a northeast-trending Mountain block that lies between the drainages of the Truckee and Carson Rivers.

- Washoe Valley is a fault-bounded, north-trending structural depression along the east side of the Carson Range. This area of abundant sagebrush and bitterbrush provides winter protein and thermal cover for the Sierra Nevada mule deer herd.

- Washoe Lake is a shallow natural lake and is mostly dependent on snowmelt from the Carson Range. It is a handy gage of wet and dry years—in wet years it threatens the highway, in dry years it sometimes disappears.

- Steamboat Creek flows north out of Little Washoe Lake through a deeply incised channel in Washoe Hill, continues north through Pleasant Valley to Steamboat Hot Springs where it collects outflow from the mineral springs, then winds along the eastern margin of the Truckee Meadows to eventually merge with the Truckee River.

- If one looks below Washoe Valley into Pleasant Valley, the hills along both sides of the road are formed mainly of Miocene andesite mudflow breccias.

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- The Scripps Wildlife Area and Washoe Lake State Park are visible up the center of Washoe Valley.

- Scripps Wildlife Area offers visitors a chance to see pelicans, harriers, egrets, avocets, phalaropes, and coots. Native vegetation includes Great Basin wild rye, rushes, and cattails, all of which were extensively used by Native Americans.

- Washoe Pines ranch is now an institute for environmental education. This was a famous divorce ranch during the days when liberal residence requirements made Nevada a popular place to dissolve marriage (known as "taking the Nevada cure").

- Marten are considered a Management Indicator Species on the Carson Ranger District. Marten occur in the northern Sierra Nevada at elevations of 3,400 feet to 10,400 feet, averaging 6,600 feet. Martens have been detected at local ski resorts including Mt. Rose Ski Resort.

Washoe County Interpretive Trail subthemes and storylines for existing panels:

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- This area is home to some of the most rare and beautiful plants and animals in the world.

- Some of the more familiar animals in the surrounding forest include the Coyote, Mule Deer, Bobcat and many species of birds, insects, reptiles and amphibians.

- The beautiful Black Bear and the majestic Mountain Lion also live here.

Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

Storyline:

- Mt. Rose-Ski Tahoe has a long history of providing a quality outdoor recreation experience, while complementing the natural beauty that draws us here.

Subtheme:

- Your actions teach and inspire others to follow wilderness and conservation ethics. (Mt. Rose Ski Tahoe conservation story on existing Washoe county panel.)

Storylines:

- Current practices to conserve the natural resources of the area include: protection of sensitive species and habitat, erosion control measures, water quality improvement and native vegetation restoration.

Recommended Interpretive Media: Include storylines in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Interpretive Opportunity Inventory Form

Site #19: Byway views

Location: Mt. Rose Scenic Byway.

Description: Byway views.

Existing Pullout: yes. (Field locations for Byway views will be further researched prior to development; may need roadway improvements.)

Seasonal Accessibility: all year views.

Interpretive Significance: Canadian life zone, glacial cirque, Mt. Rose andesite flow.

(From Nevada Bureau of Mines and Geology, special publication 19):
Mt. Rose Scenic Byway mile 14.9. As visitors continue their trip up the Mt. Rose Highway, they are now within the Canadian (montane) life zone where red fir, lodgepole pine, and western white pine create a dense forest growth. Along streams in this zone, willow, aspen, alder, currant, and lupine are a few of the dominant plant types.

Mt. Rose Scenic Byway mile 15.8. Looking to the right at about 2:00, the pointy peak sitting lower and to the northeast of Mt. Rose is also capped with light brown andesite. This rock was probably part of the same volcanic flow that covers the top of Mt. Rose, now down-faulted into its present position. Andesitic magmas tend to be thick and flow slowly. They also tend to contain a lot of gas. These conditions promote explosive eruptions. One such violent eruption produced the rugged breccia here on the south flank of Mt. Rose. From 22 million to 2 million years ago, western Nevada was the scene of much volcanic activity. Explosive eruptions poured sheets of lava over the landscape
and sent billowing clouds of ash and steam into the air.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: geology.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

- Visitors will feel a part of nature along the Byway.

- Visitors will be respectful while visiting and preserve natural resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storylines:
    - As visitors continue their trip up the Mt. Rose Highway, they are now within the Canadian (montane) life zone.

  Subtheme:
  - Mt. Rose is unqiue within the Carson range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

    Storyline:
    - Looking to the right, the pointy peak sitting lower and to the northeast of Mt. Rose is also capped with light brown andesite.

    - From their car, visitors can see a cirque carved by a small alpine glacier.

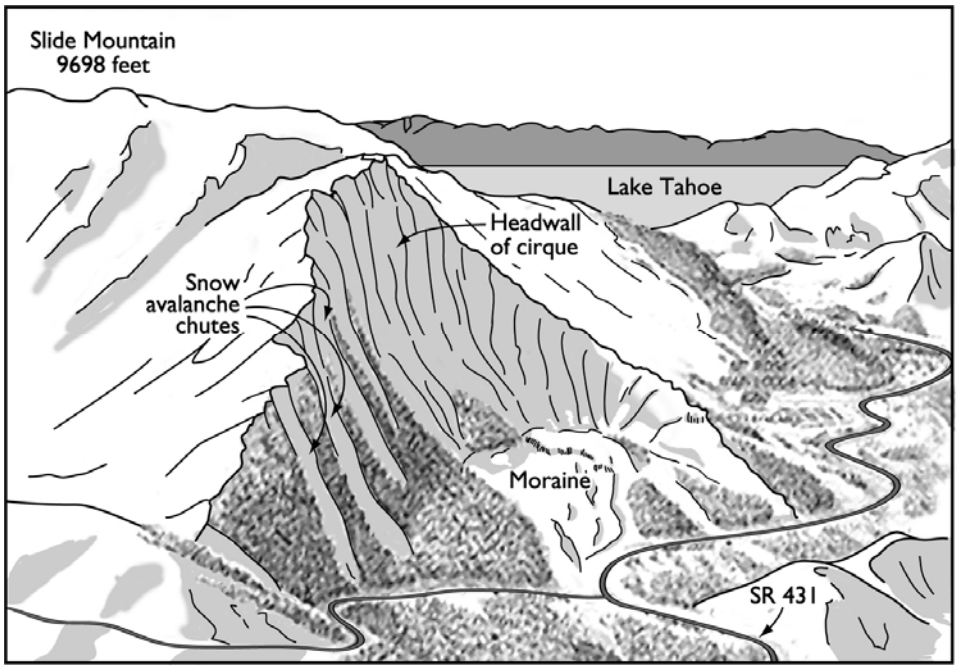


Illustration by Kris Pizarro, Nevada Bureau of Mines and Geology, special publication 19.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

NOTE: Views will be shown in the media recommended above in a safe way. In publications and in the multi media program for use with the GPS Ranger Units, visitors will be encouraged to pull over to see views. Views can be viewed at safe pullouts along the Byway and in the GPS multi media program at any safe site to pull over. The views interpreted in the multi media program do not need to be seen at the actual physical location of the view, if a safe pullout is not available there.

Site #20: Mt. Rose Ski Tahoe main ski lodge

Location: Mt. Rose Scenic Byway.

Description: About 50% under a national forest Ski Area Special Use Permit. The Chutes, added under FS special use permit in January 2003.

Existing Pullout: parking lot.

Seasonal Accessibility: lodge open in winter.

Interpretive Significance: ski lodge.

Mt. Rose Scenic Byway mile 15.9. The entrance to the Mt. Rose Ski Resort (and the Mt. Rose Main Lodge) is on the left. Mt. Rose ski area is actually located on Slide Mountain. Until the late 1980's, these were operated as separate ski areas but now they have been combined and are managed as one resort. With an 8,260-foot base elevation, Mt. Rose Ski Resort is the highest resort in the Lake Tahoe area, and boasts of an average of over 400 inches of snow per year.

Mt. Rose Ski Resort is a favorite with locals as well as visitors. In fact, their ski school instructors are local doctors, lawyers, dentists, etc. that fill in on the weekends, and during the week as their schedules permit. A benefit of skiing Mt. Rose is the opportunity to interact and get to know the locals. They offer a program on Saturdays called Ski with a Ranger program. It is a free program and includes: Dr. Church and snow measurement, wildlife, fire and archaeological presentations.

They also offer Rosebuds Children's Camp, specifically geared to children. From kids who have never seen snow, to kids who yearn for steeps, their skilled instructors keep the day fun and safe. Parents must remain on site. Ski: ages 4-10, Snowboard: ages 7-10.

Mt. Rose Scenic Byway mile 15.0. From their car, visitors can see a cirque carved by a small alpine glacier. Taking advantage of seasonal melting and later re-freezing, the glacier plucked chunks from the bedrock beneath it, which were caught up and frozen into the base of the ice. The entire mass then crept slowly (at "glacial" speed) downhill where rock was eventually disgorged at the face of the glacier. When the glacier finally disappeared, the rubble pile (moraine) left behind filled across the mouth of the cirque. The moraine is partly covered by the dense growth of stunted aspen just above the road. Note the snow avalanche chutes high on the side of the bowl to the left (south). While the north-facing slope here might appear favorable for conifers, the aspen are here because in this stunted form they survive avalanches that topple the tall pines and firs.

Along the crest of the ridge on the skyline is one of the chairlifts serving the Mt. Rose Ski Resort. This is the Northwest Magnum 6 lift that carries skiers to the top of Slide Mountain. Skiers who ride this lift are at one point suspended over the edge of the ridge—which happens to be the head wall (the upper edge) of the rugged cirque carved by the Mountain glacier.

When the Nevada Department of Transportation decided to keep the road open they then needed to control the avalanches. They created a way to create artificial avalanches using a French technology known as "gas exchange" or "gas-ex". (See site #15 (Chutes) for details of this story.)

Existing Media or Signage: Historic photos, posters and enlarged newspaper articles on main level interpreting the history of the ski area.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Geology of Mt. Rose and Slide Mountain, Mt. Rose Ski Area history, on mountain environmental implementation of improvements (e.g. Tahoe Draba), historic travel corridor, avalanche control.

Recommended Orientation Topics: Mt. Rose Ski Area.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will share their experiences, awareness, respect and stewardship of resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.
- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.
- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Existing storylines, (covered in the lodge and at Mt. Rose Welcome Plaza Summit):

Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

Storylines:

- With an 8,260-foot base elevation, Mt. Rose Ski Resort is the highest resort in the Lake Tahoe area, and boasts of an average of over 400 inches of snow per year.

- Mt. Rose screamed into the 21st century with its first high speed lift when the Northwest triple became the Norwest Magnum 6.

- Separating the east and north slopes of Slide Mountain lives the extreme terrain known as The Chutes. After 10 years of groundwork, Mt. Rose officially adopted these 200 acres into its trail system including the addition of the Chuter lift providing an exit back to the Slide lodge. The mid 1960's saw the closure of this area until its official opening in 2004.

New recommended subthemes and storylines:

Subtheme:

- Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

Storylines:

- Mt. Rose (the Mountain) is the high peak (10,776 feet) to the right. The Carson Range dominates the skyline to the west. Slide Mountain (elev. 9,698 feet), marked by ski runs radiating down from its top, is on the far left. Mt. Rose (elev. 10,776 feet), distinguished by its saddle-shaped peak, is to the right. Peavine Peak (elev. 8,266 feet) is on the far right, separated from the Carson Range and north of the Truckee canyon.

- The broad bowl on the side of Mt. Rose and its high U-shaped valleys were scoured out by glaciers during Pleistocene time (the last few hundred thousand years). |

- Skiers who ride the Northwest Magnum 6 lift can see a cirque carved by a small alpine glacier.

- When the Nevada Department of Transportation decided to keep the road open they then needed to control avalanches. They created a way to create artificial avalanches using a French technology known as “gas exchange” or “gas-ex”.

Subtheme:

- Your actions teach and inspire others to follow wilderness and conservation ethics.

Storyline:

- Mt. Rose Ski Tahoe has implemented a number of environmentally sensitive improvements contained in their 2001 Master Plan.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Recommend updating existing wall mounted pictures with historic pictures and exhibits and text if Mt. Rose Ski Tahoe, the Forest Service, and Washoe County agree to that concept. Continuation of “Skiing with a Ranger Program is encouraged.

Site #21: Mt. Rose Ski Tahoe New Slide Lodge

Location: Mt. Rose Scenic Byway.

Description: About 50% under a national forest Ski Area Special Use Permit. The Chutes, added under FS special use permit in January 2003.

Existing Pullout: parking lot.

Seasonal Accessibility: lodge open in winter.

Interpretive Significance: potential new ski lodge.

Mt. Rose Scenic Byway mile 15.9. The entrance to the Mt. Rose Ski Resort (and the Mt. Rose Main Lodge) is on the left. Mt. Rose ski area is actually located on Slide Mountain. Until the late 1980's, these were operated as separate ski areas but now they have been combined and are managed as one resort. With an 8,260-foot base elevation, Mt. Rose Ski Resort is the highest resort in the Lake Tahoe area, and boasts of an average of over 400 inches of snow per year.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: design and construction of new lodge.

Recommended Interpretive Topics: Geology of Mt. Rose and Slide Mountain, on mountain environmental implementation of improvements, Great Basin region and formation, snowpack relating to wildlife, water supply, etc.

Recommended Orientation Topics: Mt. Rose Ski Area.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will share their experiences, awareness, respect and stewardship of resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subtheme:

- Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

Storylines:

- Slide Mountain and the core of Mt. Rose are composed mainly of granitic rock, but the lower slopes of Mt. Rose, and most of the long, lower ridge of the Carson Range to the north, are draped with Tertiary volcanic rocks.

- The top of Mt. Rose is also capped with a layer of Tertiary volcanic rocks. These rocks weather to dark gray and brown, causing the peak to appear darker than other nearby peaks in the Carson Range.

- Just east of Slide Mountain a north-northeast-trending group of faults cuts transversely across the range, roughly paralleling the steep southeastern face of the Mountain. The fractured, unstable rock along this fault zone sets the stage for landslides that can be triggered by unseasonably heavy precipitation or earthquakes.

- Geologists studying the degree of weathering on this boulder-strewn landscape at the mouth of Ophir Creek believe that Slide Mountain has shed rock slides into the valley at least nine times in the past 50,000 years.

- Members of the Washoe and Paiute Native peoples of the area had a name for the Mountain which translated as "Mountain which fell in upon itself." Their verbal records from the early nineteenth century tell of at least one slide that may have been the result of an earthquake.

Subtheme:

- Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

Storylines:

- From here you have a good view of the west edge of the Great Basin. The Great Basin is a vast, closed basin in which all streams eventually terminate in valleys having no external drainage.

- When the snow pack melts it supplies water to the Great Basin desert and to Lake Tahoe. This water is important to plants, animals and people.

Subtheme:

- Your actions teach and inspire others to follow wilderness and conservation ethics.

Storyline:

- Mt. Rose Ski Tahoe has implemented a number of environmentally sensitive improvements contained in their 2001 Master Plan.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

There is a potential for new interpretive panels at the new Slide Lodge, if Mt. Rose Ski Tahoe, the Forest Service, and Washoe County agree to that concept.

Design Concept for interpretive panels at future Slide Lodge:

- Panel one: Geology of Mt. Rose and Slide, illustrations, text, and photos.
- Panel two: Great Basin story text and photos.
- Panel three: Mt. Rose Ski Tahoe environmental improvements story, text, and photos.

Site #22: Atoma Building

Location: Mt. Rose Scenic Byway

Description: Potential backcountry access or future trailhead

Existing Pullout: yes; exiting to the east is dangerous.

Seasonal Accessibility: year round.

Interpretive Significance: proposed early 1980s Galena Resort development.

This was within the proposed site for the early 1980s era Galena Resort development. Pierre Mousset-Jones is the leader of the group called Friends of Mt. Rose. The Friends Group did not want to see this area developed into a resort. They helped this area be sold to the government (US Forest Service).

This building is currently being permitted to Nevada Conservation Corp for use as a barracks. The building was originally used to run a nordik ski center until the property was acquired by the United States Forest Service in the mid 1990s.

There is a potential here for future non-motorized winter recreation use. There is no development now.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: The building could be used for interior exhibits if the present day use were to change. There is sufficient room for parking, exterior exhibits and a trailhead. It also represents the potential to be used again as a nordik ski center. Potential for interpretive trail here.

Recommended Interpretive Topics: Friends of Mt. Rose Group, life zones.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich cultural legacy.
- Visitors will feel inspired by the cultural and historic legacy of the Byway.
- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Themes:

- Mt. Rose scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storyline:
    - This site is within the Canadian (Montane) Life Zone. Red fir, lodgepole pine, western white pine, white firm, willow, aspen, currant, tobaccobrush; Stellar's jay, fisher are found here.

  Subtheme:
  - Your desire to create a Legacy for future generations helps preserve the Mt. Rose Scenic Byway.

    Storylines:
    - This was within the proposed site for the early 1980s era Galena Resort development.

    - Pierre Mousset-Jones is the leader of the group called Friends of Mt. Rose. The Friends Group did not want to see this area developed into a resort. They helped this area be sold to the government (US Forest Service).

Recommended interpretive media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour. Future opportunity for interior exhibits and outdoor panels if site usage changes.

Site #23: Pullout with views

Location: Mt. Rose Scenic Byway, northside pulloff 1/4 mile from Atoma building.

Description: NDOT pullout.

Seasonal Accessibility: all year.

Existing Pullout: pullout with views of Mt. Rose, Tamarack Ridge and Truckee Meadows. (Field locations for Byway views will be further researched prior to development; may need roadway improvements.)

Interpretive Significance: Geology view pullout.

(From Nevada Bureau of Mines and Geology):
Mt. Rose Scenic Byway mile 16.5. The wide turnout on the right provides a good view of Mt. Rose at about 3:00. The peak at about 2:30 is composed of granodiorite, its light color contrasting with the darker volcanic rock that caps Mt. Rose. The ridge extending from 1:00 to 2:30—the western wall of another cirque—is a closely-watched "calving ground" for avalanches in the winter months. During times of heavy snowfall, avalanche control crews are usually busy keeping the road between here and Mt. Rose Summit open. The aptly named lodgepole pines are now dominant. Note the krummholz, or wind-shaping effect on the trees, especially on the exposed ridges (krummholz) German for "crooked wood"—the stubby, matted appearance is caused by great environmental stress, such as high wind and heavy snow).

Mt. Rose Scenic Byway mile 16.8. On the left, a cross section of glacial moraine material is exposed in the road cut.

Mt. Rose Scenic Byway mile 17.3. From here to Mt. Rose Summit, jointed granodiorite is exposed in the road cuts. The prominent jointing seen here (the several sets of parallel fractures that cut through the rock) is probably the result of several processes; primary cooling features (as the magma cooled, it contracted and fractured), unloading features (residual stress within these rocks was relieved as the weight of overlying rock was stripped off—they relaxed and fractured), and tectonic fracturing (the rock was broken as the Carson Range was uplifted).

The steamboat buckwheat is thought to be closely related to the Slide Mountain buckwheat occurring at the top of the summit.

This area is sometimes used as winter play/sledding hill.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: geology, wildlife, Washoe.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel inspired by the cultural, natural and historic legacy of the Byway.
- Visitors will share their experiences, awareness, respect and stewardship of resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevad and the Great Basin.
- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

  Subthemes:
  - Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

    Storylines:
    - The wide turnout on the right provides a good view of Mt. Rose at about 3:00. The peak at about 2:30 is composed of granodiorite, its light color contrasting with the darker volcanic rock that caps Mt. Rose.
    - The ridge extending from 1:00 to 2:30—the western wall of another cirque—is a closely-watched "calving ground" for avalanches in the winter months. During times of heavy snowfall, avalanche control crews are usually busy keeping the road between here and Mt. Rose Summit open.
    - On the left, a cross section of glacial moraine material is exposed in the road cut.
    - From here to Mt. Rose Summit, jointed granodiorite is exposed in the road cuts. The prominent jointing seen here is probably the result of several processes; primary cooling features (as the magma cooled, it contracted and fractured), unloading features and tectonic fracturing).

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storylines:

- The aptly named lodgepole pines are now dominant. Note the krummholz, or wind-shaping effect on the trees, especially on the exposed ridges, the stubby, matted appearance is caused by great environmental stress, such as high wind and heavy snow.

- The steamboat buckwheat is thought to be closely related to the Slide Mountain buckwheat occurring at the top of the summit.

- Mountain lions are ambush hunters, often dropping on prey from a tree or rock. In the Byway area they live primarily on deer, but also eat rabbits, rodents, bighorn sheep, and occasionally domestic pets and livestock.

Subtheme:

- Washoe and Paiute people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storyline:

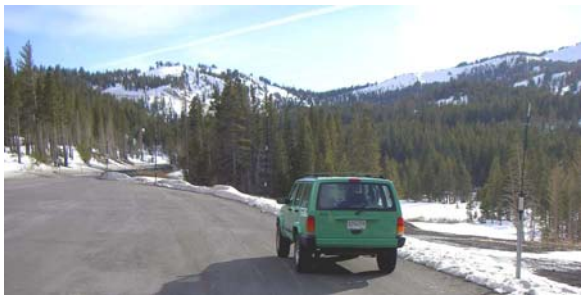
- The Washoe and the Paiute tended to have large winter villages down by Steamboat Springs and then they would move up in elevation gathering different types of plants and using different resources.

Recommended Interpretive Media: Include storylines in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Potential Interpretive Site Inventory Form

Site #24: Galena Backcountry Pullout

Location: NDOT paved pullout approx. 1 mile east of Mt. Rose Summit on Mt. Rose Highway; pullout on east side of highway and is approx. 120' long and wide enough to park about 12 vehicles head-in.



Description: Heavily used winter parking (NDOT routinely plows it out after storms) for access to Galena watershed undeveloped backcounty; used extensively for snowshoe, backcountry skiing, snowboarding, closed to motorized vehicles and travel year-round by Forest Special Order; vehicle parking often exceeds 20 vehicles immediately after snow events and during weekends and holidays; patrolled by volunteer partnership with Tahoe Backcountry Ski Patrol.

Existing Pullout: yes, extensively used in winter, summer use negligible

Seasonal Accessibility: year-round.

Interpretive Significance: Major winter access to 3,700 acre non-motorized Galena backcountry (adjoining Mt. Rose Wilderness) acquired in 1994 from Alpine Meadows Co. The area originally was part of the former Redfield Estate. Friends of Mt. Rose grassroots organization was instrumental in the 1980's in raising public awareness and support to move the area into public ownership. Galena Resort included up to 13 lifts, 1400 condominium units, casino, golf course, convention center, and private house over 800 acres. Upper ski lift towers were proposed on national forest system lands. Preliminary development started, including a water well, sewage system, and roughed in unpaved access roads. The upper drainage was leased to the Atoma Cross Country Ski Center which was operated by Greg Poulson until about 1993. The "Atoma Building" still remains immediately across the Byway from the main entrance to Mt. Rose Ski Area and is currently under special use permit to the Nevada Conservation Corps.

Numerous newspaper articles from 1994 document the chronology of what transpired to transfer the Galena Resort into public ownership:

<u>November 1983:</u> Washoe County Commission approves $500 MM Galena Resort despite 3,300 signatures in opposition.

October 1986: Resort is scaled down to appease U.S. Army Corps of Engineers. Price tag drops to $400MM, 3,600 condominiums reduced to 1,400.

September 1987: County Commissioners approve a $25MM sewer plan near Huffaker Hills that would accommodate the project.

April 1988: Galena Resort Environmental Impact Statement approves project but shows it will bring more cars to the Mt. Rose Highway, destroy pristine views, and 800 acres of wildlife habitat.

July 1990: Opponents put up protest signs on Mt. Rose Highway along property. Police are called after a resort official and protester get into a confrontation involving rock throwing and sideswiping cars.

October 1990: U.S. Army Corps of Engineers issues final permit to allow ski resort.

February 1991: Sen. Richard Bryan introduces bill to allow federal government to enter into negotiations to buy property.

August 1991: Trust for Public Lands joins buyout efforts, but drops out six months later after the non-profit group and resort owners disagree on what role each would play in the negotiations.

January 1993: The government and developers fail to agree on price, call off negotiations.

March 1993: Talks resume.

October 1993: Developers agree to sale price of $19.4MM. Down payment due in January (American Land Conservancy of San Francisco stepped in to provide $1.3MM down payment), remainder due by end of September.

August 12, 1994 After 11 years of hard work by citizens and government officials property, including the infamous "Chutes" on the south side of Highway 431 adjacent to Mt. Rose Ski Area private property, added to Toiyabe National Forest.

August 28, 1994 Mountainside picnic to celebrate the public acquisition sponsored by Friends of Mt. Rose, Galena Resort Partners, and American Land Conservancy.

The Galena backcountry now provides a unique combination of snow conditions for public non-motorized winter recreation. Due to its location on the east side of the mountains along the east shore of Lake Tahoe, its snowpack exhibits unusual characteristics of the maritime snow province in which the Sierra lies.

Existing Media or Signage: none

Physical Infrastructure Changes Recommended: any improvements and signage will have to be reviewed and approved by NDOT.

Recommended Interpretive Topics: 1. Grassroots participation and success in converting watershed into public ownership following proposal to develop upper watershed into another ski resort and real estate development 2. winter backcountry access; interrelationship between snow stability based on maritime snowpack, topography, elevation, aspect, and urban proximity; 3. clearcutting and forest ecology.

Recommended Orientation Topics: (if approved as a backcountry parking area or stop for vehicles by NDOT) Access to Galena backcountry, an undeveloped recreation mecca adjacent to the Mt. Rose Wilderness.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel that the Byway's historic, cultural and natural resources are valuable.
- Visitors will use proper trail etiquette and practice "Leave no Trace ethics.

Main Themes:

- The abundance of nature's resources has attracted people to the Byway area, leaving a rich legacy.
- Enjoying and protecting the Mt. Rose Scenic Byway allow YOU to create and share a legacy for future generations.

Subtheme:

- In 1859, the Comstock Lode's demand for timber led to clearcutting which had a profound on forest ecology and water that is still evident today.

Storylines:

- Before there were national forests, the Galena backcountry fell under the lumberman's axe and was pitted by the miner's shovel and continues to struggle to revive its former self over 30 years later
- Decades after providing timber to feed the silver mines around Virginia City, new resource (undeveloped public recreation land including Wilderness area) has replaced timber as the greatest need for this land.

Subthemes:

- Mt. Rose Scenic Byway is in Reno's backyard.
- Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lesson learned here.

Storylines:

- The story of how the 3,700-acre Galena watershed almost became a highly developed ski resort is one of people who loved a mountain and fought to make it accessible to everyone.

- The role and value of the Galena watershed is increasingly priceless as the human population continues to grow in the valleys below.

Recommended Interpretive Media: GPS Ranger, Nevada State Historic Marker, Scenic Byway Travelers Guide publication, video presentation in Galena Visitor Education Center.

Site #25: Mt. Rose Summit Welcome Plaza

Location: Mt. Rose Scenic Byway

Description: (dedicated 9/04, partnership between H-TNF, NDOT, Washoe County)

Existing Pullout: parking lot.

Seasonal Accessibility: all year.

Interpretive Significance: parking lot, restrooms, interpretive and information signing, trail and backcountry access.

Mt. Rose Scenic Byway mile 18.3. Mt. Rose Summit on highway 431 is at an elevation of 8,900 feet. Pull into the paved parking area of the Mt. Rose Summit Welcome Plaza on the right. There are informational signs to read, and there are restrooms here also. The Mt. Rose Summit Trailhead is just to the rear of the building. From here there is a good view of Mt. Rose to the north, and other volcanic-capped peaks to the west. The Truckee Meadows are visible in the background to the north.
The 10,775' summit within Mt. Rose Wilderness is clearly visible from the parking lot. Mt. Rose was named for Jacob Rose, a rancher who settled first in Eagle Valley then in Washoe Valley in the 1850s.

At this pass through the Carson Range, vegetation consists of Mountain hemlock, red fir, lodgepole pine, willow, aspen, Sierra juniper, and whitebark pine—all characteristic of the Hudsonian (subalpine) life zone. (From Nevada Bureau of Mines and Geology, special publication 19.)

The summit is the site of America's first high altitude weather observatory, established in 1905 by Dr. James Church, Jr., a professor of classics at the University of Nevada from 1890 to 1939. He was the founder of the modern snow survey, a technique that is used throughout the world today to predict seasonal water flow from precipitation stored in the form of snow. There is a State roadside historic marker dedicated to Dr. Church's work.

This site is busy year round, with snow mobiling, snow play, cross country skiing, hiking, biking, dog walking, and snow shoeing use. There is an interpretive panel at the Trailhead kiosk completed by the Tahoe Rim Trail Association. The new Mt. Rose Summit Trail is most popular trail on Carson Ranger District. It is used as a loop, destination (waterfall), and trail into the Mt. Rose Wilderness, and for hiking to the actual Mountain summit of Mt. Rose (10, 775').

This is the upper end of the watershed for Galena Creek. This is the crest of the Sierras and the Great Basin. This is where the Carson Range splits and water goes to Lake

Tahoe or it goes towards the Great Basin.

The Mt. Rose Scenic Byway is the highest plowed, maintained highway in the country. The Forest Service, Washoe county parks and Nevada Department of Transportation combined to build a wonderful trailhead here that links to the Tahoe Rim Trail.

The Tahoe Rim Trailhead is behind the restroom building. The Tahoe Rim Trail encircles the Mountain tops here above Lake Tahoe. This is one of the places to see Lake Tahoe, within two minutes you are seeing it from here.

Existing Media or Signage: 4 temporary interpretive panels are being replaced by permanent panels. Eight interpretive panels have been fabricated.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Existing panel topics include: Skiing, Lake Tahoe, Washoe, Comstock logging, Dr. Church and snow measurement, year-round pass, avalanche control, history of the road, wildfires. New topics include: geologic views, sub-alpine ecosystem, and upper Galena Creek watershed.

Recommended Orientation Topics: Mt. Rose Scenic Byway, Mt. Rose Trailhead, Into the Woods panel with nearby hiking trail map, showing hiking, horseback riding and Mountain biking opportunities. All three of these orientation panels currently exist.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will understand the wilderness and conservation ethics along the Byway.
- Visitors will feel that the Byway's historic, cultural and natural resources are valuable to their personal lives.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.
- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - Mt. Rose is unique within the Carson Range, because it is a remnant of a later period of violent volcanism from 22 to 2 million years ago.

    Storylines:
    - The 10,775' summit within Mt. Rose Wilderness is clearly visible from the parking lot. From here there is a good view of Mt. Rose to the north, and other volcanic-capped peaks to the west. The Truckee Meadows are visible to the north.

    - Visitors are encouraged to use Leave No Trace principles while hiking in the Mt. Rose Wilderness.

  Subtheme:
  - The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

    Storylines:
    - At this pass through the Carson Range, vegetation consists of Mountain hemlock, red fir, lodgepole pine, willow, aspen, Sierra juniper, and whitebark pine—all characteristic of the Hudsonian (subalpine) life zone.

    - Here is the upper end of the watershed for Galena Creek.

Existing panel storylines:

  Subtheme:
  - Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

    Storylines:
    - On the Mt. Rose Trail, you are most likely to see a variety of native plants and animals. Typical trees include the Jeffrey Pine, and the occasional Washoe & Ponderosa Pines. Wildlife most common on the trail includes marmots, golden mantle & grey squirrels, raccoons, and the Stellar's Jay.

- The views from the top of Mt. Rose are astounding. To the north are the Boca, stampede, and Prosser reservoirs, to the east Reno, to the south Lake Tahoe and the Carson Range, and to the west Houghton and Relay Peaks.

Subtheme:

- Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storyline:

- The Washoe (Washo) Indian Native people of Nevada/California lived off these lands for 10,000 years before the westward expansion of the US.

Subtheme:

- In 1859, the Comstock Lode's demand for timber led to clearcutting which had a profound effect on forest ecology and water that is still evident today.

Storyline:

- In 1859, the Comstock Lode became one of the largest strikes in America. By the early 1880s when the mines were on the decline, loggers had cut all the large trees in the area. Today's forests in the basin are mostly second and third growth trees.

Subtheme:

- Innovative snow surveying techniques used around the world began at Mt. Rose. In 1906, Mt. Rose was used as an "outdoor lab" by Dr. James E. Church.

Storyline:

- Dr. James E. Church snow-shoed to the top of Mt. Rose in 1896 (on a dare) becoming the first white man to summit the peak during the winter snows. A decade later Church devised his method of measuring the water content of the snow at his high-altitude meteorological observatory. His method of snow measurement, known as the 'Nevada System,' became standard in western North America and is continued to be used worldwide.

Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

Storylines:

- Skiing in the Lake Tahoe Area originated as a form of individual transportation in logging communities during the long winters. The recreational component evolved from weekend races and in the 1930s, Sugar Bowl Ski Resort on Donner Summit was the first established area in the region.

- From this point, a multitude of ski resorts evolved in the area. The Reno Ski bowl opened in 1952 on the summit of Slide Mountain (now Mt. Rose – Ski Tahoe.)

- In 1960, Squaw Valley hosted the VIII Winter Olympic Games bringing

international attention to Lake Tahoe skiing.

- The Lake Tahoe Area is home to the largest concentration of ski areas in North America with well over a dozen downhill and cross-country resorts, many of which are partially or totally located on national forest land.

- Mt. Rose – Ski Tahoe covers 1200 acres on neighboring Slide Mountain. With its roots dating back to the pre World War II era, Mt. Rose evolved out of the Reno Ski Bowl, which became Slide Mountain Ski Area in the early 1960's, and in 1987 Mt. Rose Ski Resort merged with Slide Mountain Ski Area.

- 2004-05 marked an historic year at Mt. Rose – Ski Tahoe with the opening of lift-accessed extreme terrain commonly referred to as "The Chutes." Boasting almost 200 skiable acres and plunging 1,500 vertical feet, this legendary north-facing bowl brought double-black diamond terrain to Mt. Rose – Ski Tahoe as well as some of the longest sustained vertical in North America.

Subtheme:

- Mt. Rose Scenic Byway is a popular present day and historic pathway from Reno to Mt. Rose and Lake Tahoe.

Storylines:

- Back in 1913 the notion of a route from Reno to Incline Village began to take shape with a completed hard surfaced road in place by 1938.

- In 1953 the "Highway to the Sky" was completed connecting the Reno Ski Bowl (located on the East Slope of Slide Mountain) to SR 431 and 431 maintained year round status in 19_ _.

- At 8,911' the Mt. Rose Highway is the Highest Year Round Pass in the Sierra. The Nevada Department of Transportation (NDOT) works tirelessly to keep the Mt. Rose summit pass open year-round.

- Avalanche control work is performed along prone sections of the Mt. Rose highway through both traditional as well as high tech methods.

- In 1992 NDOT installed the unique Gaz.ex avalanche control system which allows remote control work whenever there's the threat of snow slides.

Subtheme:

- Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

Storylines:

- Perched atop the Sierra Nevada, straddling the California/Nevada border, Lake Tahoe is a truly spectacular body of water.

- Lake Tahoe is 22 miles long and 12 miles wide, covering an area of 193 square miles. The shoreline is 72 miles around at 6,225' elevation.

- At one time Lake Tahoe and Pyramid lake were part of the inland sea, that is now known as the Great Basin. None of the water in Lake Tahoe makes its way to the Pacific Ocean.

Subtheme:

- This region is a fire-dependent ecosystem. Homeowners can learn ways to protect their homes from wildfires.

Storylines:

- Since this region is a fire-dependent ecosystem, there really is no such thing as a good or bad fire. Fire can be both a constructive and a destructive force. The U.S. Forest Service uses both prescribed fires and occasionally naturally occurring fires to reduce the catastrophic effects of wildfires and improve forest health.

- The US Forest Service collects seeds near a fire area. These seeds are grown in nurseries and then transplanted in the burned area to help speed up nature's process.

Recommended Interpretive Media: Add two interpretive panels in a new wooden structure similar to the TRT kiosk.

Design Concepts:

- Interpretive panel one – geology and life zones of Mt. Rose, text and photos and illustrations.

- Interpretive panel two –Galena Creek watershed map, photos and text.

Note: There are no existing panels along the Byway interpreting geology, watershed, or life zones. (LNT principles are conveyed on the TRT panel at this location.)

Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Tour guides taking visitors into the backcountry to hike trails within the Mt. Rose Scenic Byway, with box lunch, music, wilderness ethics, conservation and stewardship values, and storytelling. Naturalist led guided interpretive hikes are encouraged.

Interpretive Opportunity Inventory Form

Site #26: Mt. Rose Campground

Location: Mt. Rose Scenic Byway

Description: Forest Service campground.

Existing Pullout: campground

Seasonal Accessibility: open in summer; closed in winter.

Interpretive Significance: Forest Service campground with connector trail to Tahoe Meadows Interpretive Loop Trail and Trailhead.

This is the only campground on the Mt. Rose Scenic Byway. This campground is very high in elevation making it a popular summer destination at about 8900 feet. There are 24 camping sites. Each camp site has water, picnic table, and fire pit. The USFS research branch is conducting a long term scientific study of whitebark Pine.

Existing Media or Signage: none.

Interpretive Topics: Botany, Clark's Nutcracker and whitebark pine, geology of the Sierra Nevada and the rain shadow effect.

Orientation Topics: trail map.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel that the Byway's historic, cultural and natural resources are valuable to their personal lives.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Subthemes:

- Stretching for over 400 miles, the granitic peaks of the Sierra Nevada provide a barrier to moisture carried by west winds from the Pacific Ocean.

Storylines:

- Lake Tahoe and the Sierra Nevada crest are straight ahead. Stretching for over 400 miles, the granitic peaks of the range provide a geographical barrier for travel from either east or west, as well as a barrier to moisture carried by west winds from the Pacific Ocean.

- Much of the rain and snow is captured by the western slope and peaks of the Sierra, never reaching the basins to the east.

- This "rain shadow" effect is responsible for the "snowy Mountain range" to the west, as well as rain-parched desert basins to the east.

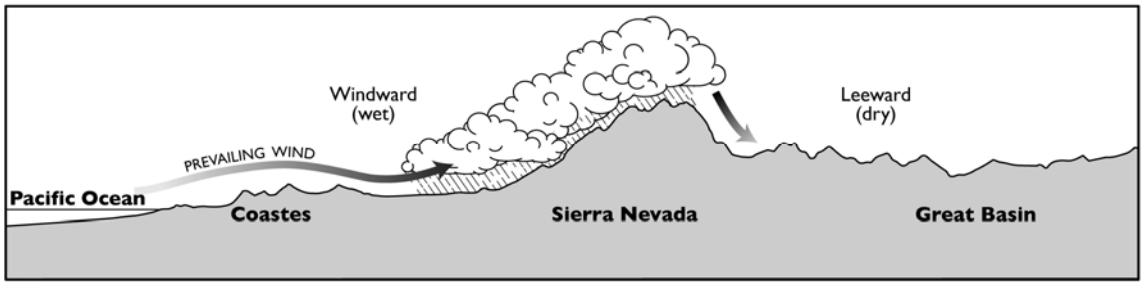


Illustration by Kris Pizarro, Nevada Bureau of Mines and Geology, special publication 19

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storyline:

- Clark's Nutcrackers play an important role in seeding the whitebark pine. Relatives of jays and ravens, Clark's nutcrackers have done more to shape western forests than probably any other animal except for man. One by one, they pull pine seeds from cones, collecting 100 or more in a pouch under the tongue. They then transport the seeds, perhaps for miles, and plant them one by one underground, in groups of four or five. In winter, the birds return to recover and eat the seeds.

Subtheme:

- Learning conservation and wilderness ethics gives you the opportunity to take care of this trail in YOUR own backyard.

Storylines:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

- Visitors are encouraged to use Leave No Trace principles while hiking.

Subtheme:

- Sensitive plants and animals and the areas where they live need your help to protect them.

Storyline:

- Visitors are encouraged to be aware of plants while hiking. (see quote by former USFS ranger, Archie Murchie, on following page.)

Recommended Interpretive Media: Three low profile interpretive panels along trail. Design concepts:

- Panel one - conservation panel, with quote below from Archie Murchie, photos and text.

- Panel two – Clark's nutcracker and whitebark pine panel, photos and text.

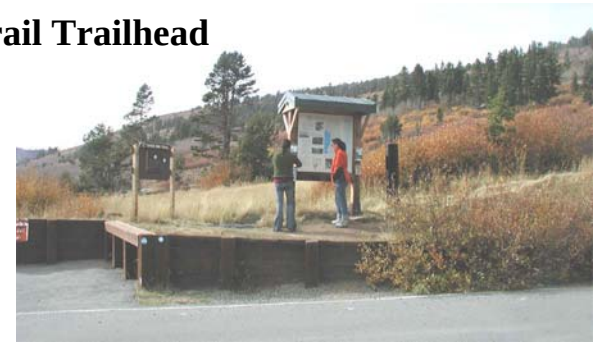
- Panel three – Rain shadow panel, photos and text.

Also Include storylines in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Quote from "The Free Life of a Ranger" book….Archie Murchie in the US Forest Service, 1929 – 1965, page 248.

"Ivan Sack was a good man to work for. Ivan was a range man. Sometimes when things were kind of quiet he would come in and say, "Arch, I want to show you something," and we would get in the car and drive up in the Sierra a ways to look at different plants or flowers. One time late in a winter he wanted to show me a primrose that had bloomed through the snow at the edge of a snowbank. Ivan thought I was a lot better botanist than I really was, because every time he'd find a plant that he'd try to stump me on, I'd nearly always know it; but I wasn't near as good as he thought. Ivan was a good botanist, and he was experienced. Years ago he had worked on the old range surveys for a number of summers. We had a lot of enjoyable times out there in the Mountains. A good way to get to know a man is to get him out like that where pressures are really off of him and off you and you can look at a plant and talk man-to-man without anything influencing your conversation." Ivan Sack was the Forest Supervisor for the Toiyable National Forest when Archie Murchie was the staff officer in charge of range, wildlife and watershed.

Site #27: Tahoe Meadows Tahoe Rim Trail Trailhead



Location: Mt. Rose Scenic Byway

Description: Tahoe Rim Trail access and Tahoe Meadows.

Existing Pullout: parking lot.

Seasonal Accessibility: In the winter months, it is snowed in but the restroom is kept open.

Interpretive Significance:
Tahoe Meadows and Trails.

Mt. Rose Scenic Byway mile 19.0. The road to the south is the entrance into the parking area for the Tahoe Meadows Trailhead, constructed in 1990. The kiosks in the lower parking area display information on the 1.2 mile long Tahoe Rim Trail and on a short interpretive trail that explores the head of Tahoe Meadows. Almost everyone from Reno who cross-country skis or snowshoes starts their learning process here on the Tahoe Meadows and, on busy winter weekends, skiers fill the meadow to capacity. This is also the trailhead for hiking down Slide Mountain past Upper Price and Lower Price Lakes to Davis Creek Regional Park on Franktown Road. (From Nevada Bureau of Mines and Geology.)

The Tahoe Rim Trail heads south from here to Lake Tahoe Nevada State Park. Odd/even Mountain bike advisory 9.2 miles to Tunnel Creek Road. Mountain bikes are advised to use this section on even numbered days only.

The Tahoe Rim Trail is one of the most beautiful in the world. Hikers can hike more than 165-miles along Mountains as high as 9,400 feet. The trail encircles Lake Tahoe, following the route of Basque sheepherders in the 1800s. Hikers will pass the hunting grounds and game trails once used by the Washoe Indian Native people many moons ago. If visitors come to Lake Tahoe to commune with nature, this trail is a must, although its popularity make sections during the summer quite busy with trail users.

There is a brochure hikers can pick up at the trailhead. Entitled “Following their Footsteps…lessons in stewardship from the Washoe Native people”. This is an excellent brochure that interprets plants in the meadow, lodgepole pine forest, and sub alpine forest. It interprets sierra onion, indian paintbrush, corn lily, willow, lodgepole pine, red sierra onion, and manzanita. It also encourages hikers to follow the stewardship model of the Washoe people.

This is a good site to discuss the concept of "holding it all together" which could focus on the mosses and sedges within this riparian environment and stream bank stability.

The Tahoe Meadows Interpretive Loop Trail is 1.2 miles and is designed to be ADA accessible. The north section of trail follows the old Mt. Rose Highway

Tahoe Meadows (formerly known as "Sheepherders Flat) is rich in Washoe archeological sites. The meadow is the most heavily used snowmobile and non-motorized winter recreation site on the Carson Ranger District, with upwards of 400 vehicles parked on a weekend day.

This is a very sacred Washoe site. This was a Washoe summer migratory and food/trade route to Lake Tahoe. The whole Tahoe Meadows area was a rites of passage area for members of the Native people as they grew up. They came up during the summer and they have stories about celebrations that took place here and how special it is for them.

Existing Media or Signage: Tahoe Meadows Interpretive Loop Trail – (1.2 miles) – 8 porcelain enamel interpretive signs currently in storage for winter in restroom building. Interpretive panel completed by TRTA under NCOT grant.

Physical Infrastructure Changes Recommended: Tahoe Meadows future plans to rehabilitate the public user path along creek (W side of Meadow) into "Tahoe Meadows Loop Trail".

Interpretive Topics: Existing panel topics include: basque sheepherders and logging, clark's nutcracker and whitebark pine, life in a frozen world, living on the edge, current events (creeks, streams and meadows), forces of fire, from the fire and ice…a meadow is born, the Washoe people, and looking over the meadow into the future.

Recommended new interpretive topics: Wahoe migratory route; sedges and mosses riparian community.

Recommended Orientation Topics: Tahoe Rim Trail and Interpretive Loop Trail. Orientation map panels already exist at the site.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located and weather and road safety information.
- Visitors will know that the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.
- Visitors will feel part of nature along the Byway
- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.
- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.
- Visitors will not litter and will pick up existing litter.

- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

Existing panel subthemes and storylines:

Subtheme:

- Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

Storylines:

- From fire and ice, a meadow is born. Becoming a meadow isn't easy. In the last 500 million years the rocks of these Mountains have been melted, exploded, broken, thrust upward, downward and sideways, bent, folded, frozen and crumbled into tiny bits.

- Creeks and streams are an essential part of meadow ecosystems. The water and nutrients provided by Ophir Creek are critical to the existence of Tahoe Meadows.

- The transition between meadow and forest, referred to as an "edge" may appear to have little significance. However, some plants and animals thrive in this narrow life zone. If undisturbed by a major event such as fire, edges will gradually creep inward, replacing the meadow with forest.

- A frozen landscape may appear lifeless at first. But often there is much life within a snowy environment. Tahoe Meadows is no exception.

- In exploring some of the wonders of Tahoe Meadows, you have experienced a complex yet intricate web of life.

Subtheme:

- Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storyline:

- Let's step back 10,000 years. At the sound of approaching voices, you turn, smiling as you recognize good friends. They join you again in this meadow, on your annual journey to Da ow a ga, lake Tahoe, crystal clear giver of life to all creatures.

Subtheme:

- This region is a fire-dependent ecosystem.

Storyline:

- Fire plays a vital role in the shaping of ecosystems, it can stimulate growth of vegetation and trees. Some plants are dependent on fire for their survival and regeneration.

Subtheme:

- Your desire to create a Legacy for future generations helps preserve the Mt. Rose Scenic Byway.

Storylines:

- The number of visitors is likely to increase in the coming years, what can each of us do to help ensure the continual survival of Tahoe meadows for future generations?

- Existing storyline conveyed in brochure at site: "Following their Footsteps…lessons in stewardship from the Washoe Native people".

New subthemes and storylines:

Subtheme:

- Washoe and Paiute people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

Storyline:

- This was a Washoe summer migratory and food/trade route to Lake Tahoe.

Subtheme:

- The Byway travels through four life zones and is home to a variety of plants and animals that occur only here.

Storyline:

- Mosses and sedges here "hold it all together" and keep the stream bank stable.

Subtheme:

- Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

Storylines:

- Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

- Visitors are encouraged to use Leave No Trace principles while hiking here.

Recommended New Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Tour guides taking visitors into the backcountry to hike trails within the Mt. Rose Scenic Byway, with box lunch, music, wilderness ethics, conservation and stewardship values, and storytelling.

Naturalist led guided interpretive hikes are encouraged.

Three new interpretive panels near the restrooms:
Design Concepts:

- Panel one – Washoe migratory panel, text and photos.

- Panel two – Mosses and sedges panel, plant illustrations and text.

- Panel three – Conservation panel and Trail etiquette, photos and text.

Interpretive Opportunity Inventory Form

Site #28: Tahoe Meadows Ophir Creek Interpretive loop Trail

Location: Mt. Rose Scenic Byway, Tahoe Meadows

Description: Proposed new trail.

Existing Pullout: parking lot.

Seasonal Accessibility: In the winter months, it is snowed in but restroom is kept open.

Interpretive Significance: The Tahoe Meadows represents a highly accessible sub-alpine meadow at nearly 9000'. The Meadow sits atop solid rock that blocks deep absorption of winter snow runoff (creating a "perched water table") so it remains unusually wet year-round for a meadow at this elevation. However, the high elevation, short growing season, and long winter weather make life here difficult and precarious. Washoe Indians unobtrusively used this meadow for centuries during the summer seasons and left little evidence of their occupation. However, over 7,000 commercial, commuter, tourists, and local recreationists travel modern Highway 431 on the average every day. Their increasing number of visits, along with their pets, to the meadow have resulted in visible damage to the fragile part of the meadow known as Ophir Creek. The proposed Interpretive Trail will become part of the Tahoe Rim Trail and offer the many visitors using the streamside area for recreational hiking along a less damaging sustainable route while having the opportunity to learn about this unique historical, botanical, and scenic respite along the Mt. Rose Scenic Byway.

Existing Media or Signage: none

Physical Infrastructure Changes Recommended: new trail design and construction.

Recommended Interpretive Topics: User impacts, trail etiquette, stewardship, proper pet control, prehistoric and historic travel way.

Recommended Orientation Topics: Trail

Objectives:

- Visitors will know how to access trail.
- Visitors will understand the wilderness and conservation ethics along the Byway.
- Visitors will learn that their actions may affect life along the Byway.
- Visitors will feel part of nature along the Byway.

- Visitors will feel a sense of personal stewardship regarding the Byway's treasures.

- Visitors will use proper trail etiquette and practice "Leave no Trace" ethics.

- Visitors will not litter and will pick up existing litter.

- Visitors will participate in wilderness and stewardship efforts along the Byway to leave a legacy for their grandchildren and future generations.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - Washoe and Paiute people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

    Storyline:
    - Washoe Indians unobtrusively used this meadow for centuries during the summer seasons and left little evidence of their occupation.

  Subtheme:
  - Ecologically the Byway is part of a unique ecotone between the Sierra Nevada and the Great Basin.

    Storyline:
    - This sub-alpine meadow sits atop solid rock that blocks deep absorption of winter snow runoff (creating a "perched water table"), so it remains unusually wet year-round for a meadow at this elevation. The high elevation, short growing season, and long winter weather make life here difficult and precarious.

  Subtheme:
  - Learning conservation and wilderness ethics gives you the skills to take care of public lands in YOUR own backyard.

    Storylines:
    - Dog walkers and equestrians who clean up after their animals and keep their dogs on leashes inspire others to do the same.

    - Visitors are encouraged to use Leave No Trace principles while hiking here.

Recommended Interpretive Media: Tour guides taking visitors into the backcountry to hike trails within the Mt. Rose Scenic Byway, with box lunch, music, wilderness ethics, conservation and stewardship values, and storytelling.

Naturalist led guided interpretive hikes are encouraged.

Self guided trail publication is recommended.

Interpretive Opportunity Inventory Form

Site #29: Forest Service boundary

Location: Location of actual Carson Ranger District/LTBMU administrative boundary

Description: Forest service management boundary

Existing Pullout: no.

Seasonal Accessibility: n/a.

Interpretive Significance: Forest Service boundary.
Important transition into Lake Tahoe hydrologic basin, managed by the US Forest Service, Lake Tahoe Basin Management Unit (LTBMU).

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Natural resource management, tourism, and development challenges.

Recommended Orientation Topics: none.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Theme:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

  Subtheme:
  - Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

    Storylines:
    - The Lake Tahoe Basin Management Unit is unique in the forest service, in that the boundary is the hydrologic area surrounding Lake Tahoe.

- If a snow flake or water drop falls in the Basin, it ultimately ends up in Lake Tahoe.

Subtheme:

- Your desire to create a Legacy for future generations helps preserve the Mt. Rose Scenic Byway.

Storylines:

- Before establishment of LTBMU, three National Forests and seven counties were all trying to find out what was best for the lake.

- The Lake Tahoe Basin Management Unit, a couple of municipal and other state organizations comprising the Tahoe Regional Planning Agency (TRPA) have formed a coalition to preserve Lake Tahoe's quality.

Recommended interpretive media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

Interpretive Opportunity Inventory Form

Site #30: Incline Lakes General Improvement District (IVGID)

Location: Mt. Rose Scenic Byway

Description: Proposed 5-acre site at Incline Lakes

Existing Pullout: yes

Seasonal Accessibility: n/a

Interpretive Significance: property land acquisition potential site.
Incline Lakes property land acquisition process is currently underway. It is going through appraisal and political processes for public acquisition from Incline Lake Property Owners, Assoc. Incline Village General Improvement District plans to build
a multi-purpose building for year-round uses. There is a potential for indoor exhibits.

This is the last large private enclave on the Nevada border of Lake Tahoe. If this site is sold to the US Forest Service it would be open to the public for the first time in 70 years. This property includes a dam, an observatory and several buildings. Forest Service officials say they cannot maintain the observatory and other structures on the property. The shareholders company, Incline Lake Corp has offered Washoe County a $10 million endowment to maintain existing structures. The county has offered to build parking and trailheads at the site and manage the buildings. Another 11 acres bordering Nevada 431 (the Mt. Rose Scenic Byway) would be managed by the Nevada Department of Transportation as a parking easement. The Forest Service has discussed working with Washoe County Parks, Sierra Nevada College, Sage Ridge School and others to keep the celestial observatory and family lodge in operation for educational purposes. If the sale goes through, the Incline Village General Improvement District has agreed to spend $1 million to purchase five acres at Incline Lake including 245 acre-feet of water rights.
In July, Nevada officials approved $772,500 in grants to help Incline Village offset the purchase. The parcel also could host a visitors center, a Nordic ski center and a meeting conference facility.

“The lake is beautiful, and when you think about the history that is contained in the buildings and the common areas, you can’t help but feel like you have a very special place there”, said Ryan Jerz, a University of Nevada, Reno graduate student in environmental journalism who helped document the property last year. “The observatory needs to be accessible”, he said. “It’s completely unique and would offer residents at Lake Tahoe and Reno the opportunity to learn and have a great time while doing it. There are also some great trails on the property that the public could really take advantage of.”
Mt. Rose Scenic Byway mile 20.4. Byway turnout on the right. From the turnout, Incline Lake is visible through the trees in the valley below at about 3:00. This lake was created by a small glacier that descended out of Ginny Lake basin located to the northwest. The glacier terminated just downstream from here and the terminal moraine dammed the drainage, creating the lake behind it.

The United States Congress designated the Mt. Rose Wilderness in 1989 and it now has a total of 31,310 acres. All of the wilderness is in Nevada and is managed by the Forest Service. Due to its proximity to urban centers, Mount Rose is easily Nevada's most heavily used Wilderness. But portions of the interior hide small meadows and smaller lakes seldom seen by humans.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: Incline Lake, life zones, Mt. Rose wilderness, Tahoe Rim Trail history, use and trail etiquette, history of acquired Incline lakes Property Corp into public ownership; wettest place in driest State, hydrologic divide into Tahoe Basin.

Recommended Orientation Topics: Mt. Rose Scenic Byway.

Objectives:

- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel appreciative about wilderness and conservation ethics.
- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience “life on the edge” of the Sierra Nevada and the Great Basin.
- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - Ecologically, the Byway region is part of a unique ecotone between the Sierra Nevada and the Great Basin.

    Storylines:
    - Incline Lake was created by a small glacier that descended out of Ginny Lake basin located to the northwest. The glacier terminated just downstream from here and the terminal moraine dammed the drainage, creating the lake behind it.
    - This location is the "hydrologic divide" between the Lake Tahoe basin and Washoe Valley to the east. Water dropped on the ground to the west of here flows into Lake Tahoe, whereas water dropped to the east will enter Ophir Creek and flow down over a mile vertically into Washoe Lake.

- Water entering Lake Tahoe to the west of this site, can leave the Lake Tahoe basin only by evaporation or through the one exit point in the northwest corner of the Lake i.e. the Truckee River.

- Since water entering the hydrologically sensitive Lake Tahoe basin will eventually enter the Lake, the Tahoe Regional Planning Agency was created in 1970's to protect and manage human activities in this environmentally sensitive "enclosed" watershed.

- The United States Congress designated the Mt. Rose Wilderness in 1989 and it now has a total of 31,310 acres. All of the wilderness is in Nevada and is managed by the Forest Service.

Subtheme:

- Your actions teach and inspire others to follow wilderness ethics.

Storylines:

- The Lake Tahoe Basin Management Unit, a couple of municipal and other state organizations comprising the Tahoe Regional Planning Agency (TRPA) have formed a coalition to preserve the water and scenic resources at Lake Tahoe.

- Incline Lakes property land acquisition process is currently underway.

- Tahoe Rim Trail is 165 miles of trail, winding peak to peak around Lake Tahoe. The Tahoe Rim Trail is open to bikers, hikers, and equestrians but closed to motorized vehicles.

Subthemes:

- Discovering the Mt. Rose Scenic Byway gives each person an opportunity to share the unique lessons learned here.

- Your desire to create a Legacy for future generations helps preserve the Mt. Rose Scenic Byway.

Storylines:

- As you enter the Lake Tahoe watershed/basin you inherently take on a personal responsibility for all your actions, as they affect this sensitive unique mountain environment today and into the future.

- Visitors are encouraged to use Leave No Trace principles while hiking along the Mt. Rose Scenic Byway.

Recommended interpretive media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour.

If the building is constructed, this space offers interior and exterior panels, exhibits, electronic media opportunities.

Interpretive Opportunity Inventory Form

Site #31: North Flume trail access

Location: Mt. Rose Scenic Byway

Description: flume trail access

Existing Pullout: no

Seasonal Accessibility: year round

Interpretive Significance: flume trail access.
LTBMU says this unmarked access is unofficial and they don't want attention or more use drawn to it e.g. to protect the flume trail resources. LTBMU does not wish to interpret this.

Existing Media or Signage: none.

Physical Infrastructure Changes Recommended: none.

Recommended Interpretive Topics: none.

Recommended Orientation Topics: none.

Site themes: none.

Interpretive Opportunity Inventory Form

Site #32: NDOT Lake Tahoe wayside

Location: Mt. Rose Scenic Byway

Description: Nevada Department of Transportation pullout

Existing Pullout: yes. Parking area is on a curve with limited parking available on south side of highway only.

Seasonal Accessibility: all year.

Interpretive Significance: Best views of Lake Tahoe.

Mt. Rose Scenic Byway mile 22.9. This is the most spectacular sweeping view of Lake Tahoe from the scenic Byway or any paved road at Lake Tahoe. There are a lot of opportunities here to discuss the lake, the color, the depth, the Crystal Range, and the Carson Range – you can see them both from here.

Visitors can use the geographic pointers built onto a rock wall to pick out landmarks around the Lake Tahoe basin and on the Sierra crest west of the lake.

Existing Media or Signage: existing Rotary Club display. It needs to be updated; it has terms and names that don't exist anymore.

Physical Infrastructure Changes Recommended: A cantilevered deck with interpretive panels might be a good possibility here.

Recommended Interpretive Topics: Double block fault geology, glaciation, Carson Range visible to south, Comstock logging history, George Whittell ownership, Diamond Peak Ski Area, Incline Village (history of name), special management of Lake basin to preserve unique water and scenic resources.

Objectives:

- Visitors will know how to access Byway recreation and interpretive attractions, where restrooms are located, and weather and road safety information.
- Visitors will know that the Byway offers a rich natural and cultural legacy.
- Visitors will feel that the Byway's historic, cultural and natural resources are valuable to their personal lives.

- Visitors will feel a sense of pride and ownership for the Byway.

- Visitors will be respectful while visiting and preserve natural and cultural resources.

Main Themes:

- Mt. Rose Scenic Byway invites you to experience "life on the edge" of the Sierra Nevada and the Great Basin.

- The abundance of nature's resources has attracted people to the Byway area, leaving us a rich legacy to preserve.

- Enjoying and protecting the Mt. Rose Scenic Byway allows YOU to create and share a legacy for future generations.

  Subtheme:
  - Lake Tahoe is commonly included in the Sierra Nevada province but its creation is due to block-faulting and volcanism, features more commonly associated with the Basin and Range province to the east.

    Storylines:
    - Most of the major landforms that we see today in the Lake Tahoe area formed by faulting and warping that followed the major period of andesitic volcanism and lahar deposition (mainly in the last 10 million years). This landscape was then sculpted by glaciation that probably began about 1.5 million years ago near the beginning of the Pleistocene Epoch.

    - In the Carson Range on the eastern side of the Lake Tahoe basin, glaciers developed only on the northern exposures of the highest peaks. Since the highest elevations in both ranges are about equal, the difference in glaciation was directly related to the snowfall each side of the basin received.

    - Sixty-three streams flow into Lake Tahoe and only one stream, the Truckee River, flows out of the lake. The Truckee exits at the northwest corner of the lake, flows through Reno and into Pyramid Lake. Tahoe's water never reaches the ocean, because Pyramid is a landlocked desert lake within the Great Basin.

  Subtheme:
  - Washoe people traveled the Byway region during their seasonal migrations from Washoe Valley to Lake Tahoe.

    Storyline:
    - The Lake Tahoe area was part of the summer range of the Washoe Indians. They left the deserts to the east, seeking the cooler Mountain temperatures in the summer months, and lived in temporary villages at several sites around the lake shore.

Subtheme:

- The Comstock Lode in 1859 brought miners; the demand for timber led to clearcutting which had a profound effect on forest ecology and water that is still evident today.

Storylines:

- Virginia City's mines produced an amazing amount. of silver and also a lot of gold from a system of quartz veins known around the world as the Comstock Lode.

- During its main production period from 1860 to 1880, the Comstock Lode produced more precious metals than all of the rest of the United States and, before it finally came to a rest in 1984, 192 million ounces of silver and 8.2 million ounces of gold were dug from a roughly 3-mile-long stretch of ground along the base of Mt. Davidson. Valued at over $405 million at the time of production, this bonanza would be worth about $4.5 billion at today's (2005) metal prices.

- As mining developed, water became as valuable as the ore being sought. Mountain springs, snowmelt, and tunnels dug into the Virginia Range near the mines just couldn't meet the needs of the growing population.

- In desperation, engineers next turned their gaze to the deep spring snowpack of the Mountain ranges to the west, and an ambitious plan was devised to construct a system of dams, reservoirs, flumes, tunnels, and pipelines to carry water from the Carson Range to Virginia City.

- Flumes and tunnels would transport the water down from the Carson Range to the valley, but a pipeline would be needed to carry it across the valley and back up into the Virginia Range. The low spot on the proposed pipeline route was at Lakeview Summit, between the two ranges.

- When completed, the water supply system included three reservoirs, over 21 miles of pressure pipes across Lakeview Summit, about 46 miles of covered box flumes, and a 3,994-foot tunnel built at elevations of between 7,000 and 8,000 feet. The pipeline is still in place, and serves as Virginia City's water supply system. The State of Nevada purchased the water system in 1963, however, and an increasingly thirsty Carson City is the major user of Marlette Lake water today.

- Timber resources in the Lake Tahoe basin became valuable following the discovery of the Comstock Lode and the development of deep underground mines. A timber industry developed along the eastern shore of the lake in the 1860s and 1870s.

- Incline Village began as a settlement around 1879 when the Sierra Nevada Wood and Lumber Company erected a sawmill.

- Incline Village received its name from an "incline", a 4,000-foot long tramway that, during Comstock days, lifted cut lumber from a sawmill located along Mill

Creek 1,400 vertical feet up the steep slope to a V-shaped flume.

- The lumber interests sold most of the Nevada North Shore from Crystal Bay to Zephyr Cove to a multimillionaire real estate magnate, "Captain" George Whittell. Captain Whittell built his stone castle on a point south of Sand Harbor. Captain Whittell was quite a character, and at one time had wild animals roaming his reserve. In the late 1950s Crystal Bay Development Company approached Captain Whittell, then in his declining years, with an offer to purchase the 9,000 acres, which is Incline Village today.

- At the end of the 19th century, when both the mines and the timber had been depleted, the scenery and solitude of the lake attracted wealthy visitors from San Francisco and other areas who acquired estates along the lakeshore.

- Public use of the lake for recreation expanded greatly during the years following World War II: boating and fishing on the lake became popular, ski resorts were built in the Mountains surrounding the lake, and gaming on the Nevada side flourished.

Subtheme:

- Development of alpine skiing in the Lake Tahoe region started on the Byway at Mt. Rose.

Storyline:

- Diamond Peak began forty years ago as Ski Incline. It was the first resort in the west to have snowmaking equipment.

Subtheme:

- Your actions teach and inspire others to follow wilderness and conservation ethics.

Storyline:

- The Lake Tahoe Basin Management Unit, a couple of municipal and other state organizations comprising the Tahoe Regional Planning Agency (TRPA) have formed a coalition to preserve the water and scenic resources at Lake Tahoe.

Recommended Interpretive Media: Include storyline in Scenic Byway Travelers Guide publication, in multi-media presentation to be viewed on GPS Ranger Units, in video presentation at Visitor Center, on website, on ipod downloads, on DVD and audio CD tour. Since maintenance is an issue for all agencies involved, only a metal interpretive panel that will withstand snow loads is recommended.

A telescope or Binocular Viewscope is recommended. This will allow visitors to focus on surrounding Mountains, forest and Lake Tahoe. A live webcam is recommended for the site. This will allow visitors to have their photo taken in front of Lake Tahoe and pick up a print at the Galena Creek Visitor Center.

Appendix A – Visitor Analysis

This appendix (from the Visitor Center Interpretive Plan) presents an overview of tourism and recreation trends on the national level, discusses recreation, tourism and conservation issues specific to Nevada, and takes a look at resident and visitor populations in the Reno-Tahoe area.

Profile of the American Tourist

The average American tourist is middle-aged (nearly half are between 36 and 54 years of age), traveling without children, by car, between April and August, to a destination within 300 miles of their home. The American population is aging, and as the baby-boom generation begins to retire, the age of the typical tourist can be expected to continue to increase (locally, the median age of Reno-Tahoe visitors increased from 50 to 55 years in the decade1994-2003).

Recreation Preferences

The activities favored by domestic travelers appear in the table below.

Top Ten Activities for Domestic Travelers

Activity	% of Travelers
1. Shopping	34%
2. Outdoor Recreation	17
3. Historical Places/Museums	14
4. Beaches	11
5. Cultural Events	10
6. National/State Parks	10
7. Theme/Amusement Parks	9
8. Gambling	8
9. Nightlife/Dancing	8
10. Sports Events	6

source: Travel Industry Association of America (TIAA), 2001

More than one in every four leisure trips taken in 2001 included outdoor recreation or visiting a national/state park, and 65 million Americans took at least one trip of 50 miles or more (one-way) away from home to visit a national/state park (or forest) in 2001.

Another important trend apparent in the above table is the popularity of cultural and historic tourism ("recreational" or "informal" learning), with nearly one in four trips including either a visit to an historical place/museum or attending a cultural event. The increasing popularity of trips that include recreational or informal learning is one of the most robust trends in modern American tourism. 81% of U.S. adults who traveled in the past year (2003 data) are considered historic/cultural travelers (TIAA, 2003). This percentage represents 118 million people who took part in historical or cultural activities during a total of almost 217 million person-trips, an increase of 13% from 1996-2001. This trend reflects a growing public interest in learning about culture and nature: about 60% of Americans visit a nature center,

nature trail or zoo every year, and there has been a strong up-trend in participation in wildlife-viewing.

The number of sites supporting recreational and informal learning experiences has increased significantly in the last two decades. Terms such as ecotourism, free-choice learning," and heritage tourism are no longer used exclusively by interpreters and museum educators, but have become part of the standard lexicon of the travel industry. Affluent, well-educated baby-boomers entering retirement can be expected to swell the ranks of recreational learners in the immediate future (an expanded discussion of recreational learning can be found in Appendix D).

More than 97% of Americans report that they participate in outdoor recreation activities, and annual national forest visits totaled over 137 million at the turn of the century. Rising population and demand for outdoor recreation is leading to a decline in per-capita acres of forest land available for recreation. Increased competition for limited resources will probably lead to increased conflict between user groups, particularly as new forms of recreation create new demands on public lands.

New Activities

While participation in some traditional sports such as hunting has been on the decline, participation in other activities has increased, and new sports have appeared on the national scene. Snowboarding, OHV-riding and Mountain-biking placed scant demands on public land only a few decades ago, but managing these forms of recreation and their impacts is a major management challenge today. Other activities such as geo-caching have made their appearance only in the last few years as new technologies have become available and affordable. The sports that showed the greatest increases in participation from 1995-2000 are shown in the following table.

Fastest-Growing Outdoor Recreation Activities

Activity	% Increase Since 1995
1. Kayaking	330%
2. Jet-skiing	226
3. Snowboarding	223
4. Viewing/Photographing Fish	131
5. Snowmobiling	100

source: National Survey on Recreation and the Environment 2000

Value of Wildlands

Americans place a high value on their wild lands: 69.8% of respondents to the National Survey on Recreation and the Environment favored the designation of more federal lands as wilderness, and 92.1% believed that the resources protected by wilderness have value whether or not humans benefit from them. The table on the next page shows the varying degree to which respondents valued certain perceived benefits of wilderness. A relatively low number of survey respondents (33.1%) placed the same degree of importance on the economic benefits of wilderness to the tourism industry as they did on other benefits.

Accurate knowledge about the types of uses allowed in wilderness areas did not correspond to the high degree of importance placed on their benefits. Nearly half (43.6%) of respondents believed that motor vehicles were allowed in wilderness areas, over half (61.4%) believed that bicycles were allowed in wilderness areas and 72.4% thought that roads were developed in wilderness areas for fire protection and recreational access.

Importance Attached to the Benefits of Wilderness Areas

Benefit of Wilderness Area	% of Survey Respondents Who Rated the Benefit "Extremely Important" or "Very Important"
protecting water quality	91.4%
knowing that future generations will have wilderness areas	85.0
providing recreation opportunities	66.6
protecting wildlife habitat	86.8
providing spiritual inspiration	58.0
preserving natural areas for scientific study	57.1
preserving unique wild plants and animals	79.7
knowing that in the future I will have the option to visit a wilderness area or primitive area of my choice	73.1
protecting air quality	91.7
providing income for the tourist industry	33.1
protecting rare and endangered species	82.7
providing scenic beauty	74.1
just knowing that wilderness and primitive areas exist	74.0

source: National Survey on Recreation and the Environment 2000

Credibility of Information Sources

What source do Americans trust to get accurate information about outdoor recreation opportunities? Federal agency sources, with the exception of the Bureau of Land Management (which administers 68% of all the land in Nevada), rank higher than university sources or electronic media.

Degree of Trust in Information Sources

Information Source	% of Survey Respondents Who Said They "Always" or "Usually" Trusted Information from the Source
1. National Park Service	61.1%
2. National Forest Service	56.6
3. U.S. Fish and Wildlife Service	53.6
4. University sources	51.3
5. Friends or acquaintances	50.6
6. State natural resource agencies	49.2
7. Fellow outdoor enthusiasts	43.9
8. Environmental organizations	38.5
9. Newspapers	37.5
10. Bureau of Land Management	33.5
11. Radio	33.2
12. Magazines	28.8
13. Television	28.8
14. Internet	18.6

Strategic Implications of National Tourism and Recreation Trends

- The average age of "typical" visitors can be expected to increase.
- The "typical" visitor will be seeking an informal learning experience that adds value to their trip, not just information.
- Types of recreational activities and levels of participation will change, and overall user numbers will increase.
- The use of interpretive media as a tool to manage user conflicts and inappropriate behavior is a given.
- Positioning the Forest Service and the Washoe County Regional Parks and Open Space as "defenders of wilderness" and "protectors of the wild" will resonate powerfully with most visitors, who place a high value on wilderness.
- Many Americans do not fully understand the wilderness concept or the rules and regulations associated with wilderness areas. This is two-edged sword. More information and education is clearly indicated to help people understand the legal concept of wilderness and encourage appropriate behavior, but the strong support for "wilderness" evidenced in surveys might be assumed to be support for open space and natural areas in general, not just "official," congressionally-designated wilderness areas.
- Prominent display of the Forest Service shield and/or Smokey the Bear or Woodsy Owl images on informational media, especially web-based messages, will take advantage of the relatively high degree of trust information-seekers place in the agency, and help to mitigate the relatively low degree of trust placed in the internet as a source.

Tourism and Recreation Trends in Nevada

The outdoor recreation and tourism situation in Nevada is unique and unusual. Positioned in the early years of its tourism development as a gambling/entertainment destination, the state increasingly relies on its immense inventory of public land, wealth of natural resources and

abundant open space to draw visitors. The Reno-Sparks Convention and Visitors Authority now positions the area as an "adventure destination with gaming."

The 1998 Southern Nevada Public Lands Management Act (SNPLMA) has provided funding for recreation development, environmental protection and conservation education at a level unmatched in any other state. Over $67 million dollars has been spend in Washoe County for the acquisition of environmentally-sensitive lands, mostly on the urban-rural fringe. These acquisitions help public land management agencies to protect natural and cultural resources, but also provide a much-needed buffer between natural and developed areas.

Nevada's Public Lands and Natural Resource Base

The federal government owns 87% of the land in Nevada, and maintaining access to public lands was the single most important issue identified (through a public input process) in Nevada's 2003 Statewide Comprehensive Outdoor Recreation Plan (SCORP):

"There is a growing need to protect, maintain and increase public access to public lands for the greatest diversity of outdoor recreational users."

There is strong sentiment statewide to return at least some federal lands to state or local control, and this is one of the action items the plan identified. The other two high-priority issues identified in the 2003 SCORP were "funding parks and recreation" and "recreational trails and pathways."

Nevada has more Mountain ranges than any other state in the Lower 48. The state's Mountains offer both residents and visitors a wide variety of recreational opportunities and escape from the heat of summer. Even remote ranges are generally accessible to the well-equipped hiker or backpacker since the desert climate is such that most areas are free of snow and ice most of the year, and do not require technical Mountaineering skills or equipment for travel. Several ranges are high enough to offer snow-based winter sports, and these are a vital component of the state's recreation opportunity spectrum.

Water resources in Nevada, the driest state in the nation, are strained by increasing human consumption, and three of its rivers are listed among the twenty most-threatened rivers in the nation (American Rivers, 2001). Perennial streams are the exception rather than the rule. Seasonally-intermittent and ephemeral streams are much more common, but there are 684 fishable rivers and streams in the state. Several large lakes and manmade reservoirs offer a surprising abundance (for an arid state) of opportunities for boating and other water-based recreation.

Population Trends and Attitudes Toward Conservation

Nevada is the fastest-growing state in the nation. The population grew from 1.2 million in 1990 to 2.0 million in 2000, a 66% increase. On average, the state added 6,600 new residents each month during the ten-year period.

Nevadans are concerned about and supportive of natural resource conservation and the protection of historic/cultural resources. In November 2002, state voters approved a ballot proposal to issue $200 million in bonds to fund the preservation of water quality, the

protection of open space, lakes, rivers, wetlands and wildlife habitat, and the restoration and improvement of parks, recreation areas and historic and cultural resources.

In a 1997 study, 100% of urban residents and 99% of rural residents said that management of the state's public lands was "very important" or "important" to them.

A 2001 survey found that 67% of Nevada residents "strongly agreed" or "somewhat agreed" with designating more wilderness areas in the state. The same survey found that 92% of Nevadans felt it was "very important" or "somewhat important" to maintain unique or unusual areas in a natural state, while 93% felt it was "very important" or "somewhat important" to set aside Nevada's historic areas, ghost towns and other examples of its cultural heritage.

Nevada was, however, the birthplace of the Sagebrush Rebellion, and many citizens are concerned that resource protection will come at the cost of access. The fourth-most important issue identified through public input in the 2003 SCORP was:
"Protection of natural, cultural and scenic resources needs to be put in balance with users. Create opportunities for users to participate in the protection, i.e. as site stewards. Mandate that a majority of fees paid in a recreation area stay in that area for improvements and maintenance. Citizens acknowledge this as an investment and a way to participate in the conservation of these resources."
Maintaining access for diverse user groups to public lands was the highest-rated issue in the 2003 SCORP, and this is obviously a priority concern for many Nevadans. But the issue statement above indicates that Nevadans realize user groups must bear at least some of the responsibility for avoiding and mitigating resource degradation because of recreational use. A campaign to educate and inform the public about natural and cultural resource issues was recommended as one of the action items to address this issue.

The sixth-most important issue identified in the 2003 SCORP was:

"Encourage, fund and provide environmental, cultural and heritage interpretation and educational programs and opportunities, especially outdoor opportunities, throughout Nevada."

One recommended action was to develop public education programs both within and outside the state (to dispel the myth that Nevada is all about gambling/adult entertainment). Another recommendation suggested working with public land management agencies to develop statewide curricula regarding Nevada's cultural and natural heritage.

Some residents view development as one of the major threats to recreational access:

"We are allowing/encouraging development…at all costs, restricting use of public land in surrounding rural towns as the exchange, and then watching as urban residents misuse outlying public land, shutting down its use by all, even those living in the rural areas. Education and expanded use need to be the answers before restricting access."

Recreation Preferences

Nevadans are enthusiastic users of their public lands. In the year 2000, 84% of state residents (age 16 or older) participated in at least one outdoor recreational activity. Preferred activities for residents recreating within the state are shown in the table below.

Top Ten Outdoor Activities for Nevadans Recreating in Nevada

Activity	% of Nevadans Participating
1. driving for pleasure	44%
2. picnicking	37
3. swimming in a pool	32
4. walking without a dog	32
5. wildlife viewing	31
6. swimming in a lake or stream	30
7. hiking	28
8. walking with a dog	28
9. motorboating	27
10. lake fishing	26

source: 2003 Nevada Statewide Comprehensive Outdoor Recreation Plan

The Galena Creek Regional Visitor Center will be located in a tourist area, so it is appropriate to consider the preferred activities within the broader Nevada Market Region, which consists of Nevada, California, Oregon, Idaho, Utah and Arizona. These preferences are shown in the table below.

Top Ten Outdoor Activities for the Nevada Market Region

Activity	% of Persons in Nevada Market Region Participating
1. walking for pleasure	79%
2. family gathering	73
3. view/photograph natural scenery	62
4. visit nature centers, etc.	57
5. gardening or landscaping for pleasure	56
6. picnicking	56
7. sightseeing	49
8. driving for pleasure	47
9. view/photograph wildflowers, trees, etc.	45
10. visit historic site	43

source: 2003 Nevada Statewide Comprehensive Outdoor Recreation Plan

Nevadans listed the following five items as the most-needed recreation facilities and opportunities within their communities:

1. parks/greenbelts
2. children's parks/playgrounds
3. bicycling trails
4. soccer fields
5. swimming pools

and outside their communities:

1. camping
2. fishing
3. parks
4. hiking
5. biking.

A number of the popular activities in the preceding tables and lists are trail-based (walking, hiking, various viewing activities). How do Nevadans use their trails? The table on the following page shows a breakdown of trail uses.

Percentage of Nevadans Participating in Trail-Based Activities

Activity	% of Nevadans Participating
1. Walking without a dog	41%
2. Hiking	38
3. Walking with a dog	35
4. Bicycling	28
5. Off-road 4WD	20
6. Jogging	17
7. Off-road ATV	14
8. Mountain-biking	13
9. Backpacking	11
10. Off-road motorcycle	8
11. Snowmobiling	5
12. Cross-country skiing	4
13. Snowshoeing	2

source: Nevadans Outdoors-A Survey on Outdoor Recreation in Nevada

National Visitor Use Monitoring Data

The National Forest Service collects information about its visitors through on-site interviews in a process called National Visitor Use Monitoring. This data is compiled at the Forest, rather than the District level. Since the Humboldt-Toiyabe National Forest covers a vast geographic area that includes public lands next to urban areas (such as the Carson Ranger District) as well as lands in more remote, sparsely-populated regions, the assumption that Forest-wide statistics hold true at the District level may be erroneous, and inferences based on that data should be made with appropriate caution. Preferred activities on the Forest are shown in the following table.

Top Ten Activities on the Humboldt-Toiyabe National Forest

Activity	% of Visitors to Humboldt-Toiyabe National Forest Participating
1. Hiking or walking	52%
2. Viewing wildlife, birds, fish, etc.	51
3. Viewing natural features such as scenery, flowers, etc.	46
4. General/other-relaxing, hanging out, escaping noise and heat, etc.	39
5. Hunting	26
6.Visiting historic and prehistoric sites/areas	18
7. Primitive camping	17
8. Driving for pleasure	17
9. Picnicking and family day-gatherings at developed sites	13
10. Downhill skiing or snowboarding	12

source: National Visitor Use Monitoring Results, Humboldt-Toiyabe National Forests, 2001

Urban Users

One of the important trends in Nevada recreation is a shift in types of uses, which might be attributed partly to an increase in the number of urban users. Nevada's population is highly-urban, with 94% of the state's population concentrated in metropolitan areas. A Bureau of Land Management recreation planner noted in the 2003 SCORP that:

"recreation use is shifting from the old traditional uses of hunting, fishing and camping to OHV's, rock climbing, dune buggies, etc. More and more visitor use is changing from local to urban visitors and they expect recreation enhancements, toilets, developed and maintained campsites, trails, signage, brochures, site interpretation, etc."

User Satisfaction

The users of Humboldt-Toiyabe National Forest appear to be fairly well-satisfied with the recreation enhancements and other infrastructure they encountered at developed overnight and day-use sites on the Forest. Visitors ranked their satisfaction with fourteen items ranging from condition of parking lots, roads and trails to helpfulness of employees to value for fee paid on a five-point scale (poor, fair, average, good, very good). The only items that received a significant number of responses in the "poor" or "fair" categories at both day-use and overnight sites Forest-wide were:

- cleanliness of restrooms
- availability of information on recreation
- adequacy of signage, and
- value for fee paid.

"Availability of information on recreation" was rated "poor" or "fair" by 22% of visitors at day-use sites and 29% of visitors at overnight sites. "Adequacy of signage" was rated poor or fair by only 3% of visitors at day-use sites, but 43% of visitors at overnight sites rated it "poor" or "fair."

Users at developed day-use and overnight sites in the Lake Tahoe Basin Management Unit rated the same fourteen items, and "availability of information on recreation" was the lowest-

rated item at day-use sites (23.8% found it to be "poor" or "fair") and the second lowest-rated item at overnight sites (11.7% rated it "poor").

Reno-Tahoe Area Visitors

Demographics

Nearly half of Reno-Tahoe area visitors in 2004 were married empty-nesters. Another 36% were married with no children or children at home. Single persons constituted only 8% of total visitation, a significant decline (27%) since 1993. Estimated total visitation in 2004 was 5,535,812, up from 5,073,641 in 1999 (a 9% increase).

More visitors (43%) to the area come from California than any other state. Over half of all visitors (55%) arrive by car, 35% by air, 6% by bus. As previously noted, the median age of Reno-Tahoe area visitors is 55, up from 50 in 1993. The proportion of visitors in the age group from under-30 to 50 decreased in that ten-year period, while the proportion of visitors in the age group above 50 increased.

Median household income of visitors increased during the decade as well, up from $43,900 to $63,300 (in a period when inflation was relatively low). The proportion of visitors with household incomes under $50,000 decreased, while the proportion of visitors with household incomes greater than $50,000 increased

The proportion of Hispanic visitors more than doubled from 1993-2004 (2%-5%), while the proportion of Caucasian visitors declined (92%-81%).

Purpose of Trip/Preferred Activities

Only 8% of 2004 visitors (down from 23% in 1994) stated that the primary purpose of their trip was gambling, but 89% gambled. The primary reason for most visitors' trips was getaway/vacation. The purpose of visitors' trips is shown in the table below.

Primary Reason for Trip to Reno-Tahoe Area

Primary Reason for Trip	% in 1994	% in 2004
1. Getaway/Vacation	38%	35%
2. Gamble	23	8
3. Business	7	9
4. Convention	6	11
5. Bowling	0	8
6. Visit Friends/Relatives	6	6
7. Marriage/Wedding	4	4
8. Sightsee/Visit Lake Tahoe	1	1
9. Special Event	1	5
10. Shopping	2	1

source: Reno-Sparks Convention & Visitor Authority, 2005

The most popular activities for area visitors are shown in the table below.

Preferred Activities of Reno-Tahoe Area Visitors

Activity	% Participating in 1996	% Participating in 2004

Activity	% Participating in 1996	% Participating in 2004
1. Gambling	90%	89%
2. Shopping	24	56
3. Sightseeing/Touring	21	38
4. Watching Shows/Lounge Acts	31	33
5. Visiting Lake Tahoe	19	22
6. Visiting Friends/Relatives	12	24
7. Conducting Business	9	19
8. Visiting Virginia City	7	16
9. Attending Convention or Trade Show	5	18
10. Attending a Special Event	5	16
11. Attending a Wedding	4	10
12. Visiting Museum/Exhibits	1	7
13. Visiting National Auto Museum	6	5
14. Playing Golf	2	4
15. Skiing	2	3
16. Visiting Nevada Museum of Art	0	2

source: Reno-Sparks Convention and Visitor Authority, 2005

Internet Use

The proportion of Reno-Tahoe area visitors who use the internet to book lodging has increased dramatically since 1998, from 2% to 17%. During that same period, the number of visitors with internet access increased from 46% to 76%, the proportion of visitors who used the website www.renolaketahoe.com increased from 7% to 24% and the proportion of visitors with personal e-mail addresses increased from 43% (in 1999, no figures are available for 1998) to 68%.

Strategic Implications of Local Tourism and Recreation Trends

Reflecting national trends, the age of Reno-Tahoe area visitors is increasing.

- ➔ Visitors are more affluent than they were ten years ago.
- ➔ The proportion of Hispanic visitors has increased by well more than 100% in the last ten years (2%-5%).
- ➔ Interest and participation in recreational learning activities is on a dramatic upswing. The proportion of visitors visiting museums/exhibits at some point during their trip increased 700% in the last decade (1%-7%), and the proportion of visitors going to Virginia City more than doubled (7%-16%). Visiting the Nevada Museum of Art did not even appear on the list of activities in 1994, but 2% of visitors went there in 2004.
- ➔ Internet access and use of e-mail among visitors are increasing.
- ➔ The proportion of visitors who use the internet to book rooms has increased more than 800% in the 6-year period from 1998-2004 (2%-17%), and these visitors now represent a market of nearly a million people (941,088).

Reno and Washoe County Area Residents

Demographics

Reno is the county seat of Washoe County, the second-fastest growing county in Nevada. The population of Washoe County increased from 339,486 in 2000 to 380,754 in 2004, a 4% increase. Census data indicate that 26.6% of the total in-migration was international in origin.

Data suggest that most of the international in-migration originated in Latin American countries. The proportion of households in Washoe County reporting Spanish as the language spoken at home rose from 6.7% in 1990 to 13.6% in 2000. This is supported by statewide data. In 1990, 7.7% of the households in Nevada were Spanish-speaking, in 2000, 16.2% were. Increases in the proportion of Spanish-speaking households at both the state and county level exceeded 100%.

Levels of educational attainment in Washoe County are roughly similar to national levels. 83.9% of Washoe County residents have a high-school diploma or higher (versus a national figure of 80.4%) and 23.7% have a bachelor's degree or higher (versus a national figure of 24.4%).

Income levels in the county are significantly higher than the national average, even though the proportion of workers (19.9%) employed in the service industry is well above the national figure (14.9%). The median household income in Washoe County is $45,815 versus $41,994 nationally, a difference of nearly 10%.

Poverty levels in Washoe County are also well below national averages, with 6.7% of families below the poverty level in the county versus a national figure of 9.2%.

Hispanic Participation in Outdoor Recreation

Various data suggest that rates of participation in outdoor recreation are lower for Hispanic citizens than the U.S. population in general. Cluster analysis of recreational participation from the 2000 NSRE data revealed eight recreational "personalities." The three least-active categories ("Inactives," "Passives," and "Non-consumptive Moderates") contain disproportionately high levels of Hispanics (as well as Blacks, Asians and females). NVUM data from the Humboldt-Toiyabe National Forest and the Lake Tahoe Basin Management Unit show that Hispanics account for 3.1% of total Forest visits, versus a statewide proportion of Spanish-speaking households previously noted at 16.2%.

School Population

A total of 89,970 persons are enrolled in school in Washoe County, including 22,839 at the college level which represents a higher proportion than the national average. Excluding college students and nursery/pre-school enrollees, the potential audience for exhibits and programming targeted at students K-12 (2000 Census) is 62,229. The recent growth rate for Washoe County (4% between 2000 and 2004) suggests that the total K-12 audience at this point in time is approximately 64,718.

Within the Washoe County School District, 13.9% of students are classified as having limited English proficiency. 36% of students meet the income guidelines to qualify for free school lunches.

The proportion of Washoe County School District students who exceeded standards in the High School Proficiency Exam was significantly higher than the statewide average in all three categories (reading, writing, mathematics). The proportion of students graduating was also higher than the statewide average, and the dropout rate was less than half the statewide average.

Rental facilities at Camp We-Ch-Me and the recently-renovated fish hatchery have not been available to the public for a long enough period of time to assess usage trends, but park staff expressed the opinion that the rather spotty overnight rentals of the Camp We-Ch-Me lodge in the last year could probably be improved with better marketing.

The most recent in-depth data on park users was collected in 1990 through a telephone survey of Washoe County residents. Because of the age of the data, Washoe County's rapid population growth (and associated social changes) in the intervening fifteen years, and the skewed nature of the sample, any projections or assumptions based on information from that survey should be approached with a high degree of caution.

The 1990 survey found that the average education level and income of the county residents who used the park were slightly above the county average. Most respondents (62.6%), when asked what they would like to change about the park, said that they would prefer to change nothing and leave the park as natural as possible. The preferred activities of 1990 park users who lived in Washoe County were:

- relaxing outdoors (91.1% participated)
- hiking walking (82.2%)
- picnicking (71.1%)
- nature observation (71.1%)
- exploring (64.4%)
- snow play (48.9%).

Appendix B – Funding Opportunities

On August 10, 2005, President George W. Bush signed the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009.

Transportation Enhancement Program

Contact: Leis Anderson
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Carson City, Nevada 89712
775-888-7121
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What is the Transportation Enhancement (TE) program?

Program Purpose

To strengthen the cultural, aesthetic, and environmental aspects of the Nation's intermodal transportation system.

Nevada receives about $12 million every 2 years. A local or State funding share is required in each reimbursed phase of work. The TE Program is a reimbursable capital-improvement program. Projects must comply with federal environmental requirements and other federal regulations, including those for considering disadvantaged business enterprises in consultant selection and for paying prevailing wages during construction.

What makes a project eligible for Transportation Enhancement Funds?
Transportation Enhancement activities must have a direct relationship – by function, proximity or impact – to the surface transportation system. Activities must be over and above normal projects, including mitigation.

These activities are eligible to be accounted for as Transportation Enhancement activities:

1. Provision of facilities for pedestrians and bicycles.
2. Provision of safety and educational activities for pedestrians and bicyclists.
3. Acquisition of scenic easements and scenic or historic sites.
4. **Scenic or historic highway programs (including the provision of tourist and welcome center facilities).**
5. Landscaping and other scenic beautification.
6. Historic preservation.
7. Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals).
8. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle trails).
9. Control and removal of outdoor advertising.
10. Archaeological planning and research.
11. Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity
12. Establishment of transportation museums.

The federal Transportation Enhancements (TE) program funds 12 different types of transportation-related activities. Through activity 4, known in law as "Scenic or historic highway programs, including tourist and welcome center facilities," communities develop the scenic and historic character of highways. These programs make the travel experience educational and attract tourists to local roads. Since the TE program began in 1992, approximately 5 percent of available TE funds have been programmed for scenic and historic highway program projects. Working within Federal Highway Administration (FHWA) guidelines, each state Department of Transportation (DOT) determines the eligibility of TE projects for funding. Examples of projects that may
be eligible include:

- Construction of tourist and welcome centers related to scenic or historic highway programs.

- Purchase and installation of items which support or interpret the scenic or historic highway program or site such as brochure racks, maps, or kiosks.

- Construction of turnouts and overlooks.

- Design, fabrication and installation of designation signs, markers, and interpretive displays.

The FHWA TE Guidance stipulates that in order to be eligible, "The tourist or welcome center does not have to be on a designated scenic or historic Byway, but there must be a clear link to scenic or historic sites." In determining the historic value of a particular site, project sponsors should have documented evidence of consultation with the State Historic Preservation Officer (SHPO) or similar authority. A tourist or welcome center should be publicly owned and open to the public; proposals for privately owned facilities to be used as a tourist or welcome center will be reviewed on a case-by-case basis through the state DOT and the FHWA division office. TE funds may not be used for the construction or restoration of rest areas not related to scenic or historic sites or road lanes. Tourist center funds cannot be used for marketing or promotion not related to the scenic or historic highway program, nor can they be used for the staffing, operating, or maintenance costs of the facility.

The Transportation Enhancement Program (TEP) was established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and was continued, with minor modifications, under the Transportation Equity Act for the 21st Century (TEA-21). SAFETEA-LU continues the requirement that ten percent or the amount. set aside in FY 2005, whichever is greater, of Surface Transportation Program (STP) funds be set aside for transportation
enhancement activities.

The TEP provides for the implementation of a variety of non-traditional projects, such

as the restoration of historic transportation facilities, bicycle and pedestrian facilities, landscaping and scenic beautification, and mitigation of water pollution from highway runoff.

Applications for enhancement projects are solicited on a two-year cycle, beginning in July with the application due in December. **The next application period will be in July 2008.** Prior to submittal of the applications, potential applicants must submit an Intent-to-Apply Form. After the Intent-to-Apply forms have been received, the NDOT will hold a workshop that is video conferenced from the NDOT Headquarters to centralized locations around the state. The workshops are advertised for public participation and letters are sent to the all the counties and major cities requesting their participation. Only applications submitted to the NDOT by state agencies, eligible federal agencies, city/county governments or other eligible local public agencies (including general improvement districts), and tribal governments will be accepted for consideration. Private groups may apply for project funding, but must apply through a public entity or agency. Projects must be for an eligible enhancement activity and must be related to surface transportation. A local match of 5 percent is required for this program.

A special subcommittee of the Statewide Transportation Technical Advisory Committee (STTAC) prioritizes projects from the non-urban areas of the state. Following an extensive review of the applications for eligibility and consistency with state and federal requirements, projects are prioritized for funding by the STTAC. The STTAC recommends to the NDOT a final priority list of projects. Once approved by the NDOT, the enhancement projects are included in the applicable MPO's RTIP and in the STIP.

Selected applicants are notified as to whether or not their project was selected for funding. The NDOT retains responsibility for the projects funded under the Enhancement Program.

Applicants must check with their Regional Transportation Planning Agency to obtain the deadline for application. Dates vary by Region.

Federal Lands Highways Program (FLHP)

The Federal Lands Highways program authorizations thru 2009 total $4.5 billion for Indian Reservation Roads (IRR), Park Roads and Parkways, Public Lands Highways (discretionary and Forest Highways), and Refuge Roads programs. FLHP funds can be used for transportation planning, research, engineering, and construction of highways, roads, parkways and transit facilities within public lands, national parks, and Indian reservations. In addition, FLHP funds can be used as the State/local match for most types of Federal-aid highway funded projects.

FEDERAL LANDS HIGHWAYS

	2005	2006	2007	2008	2009
Indian Reservation Roads	$300M	$330M	$370M	$410M	$450M
Park Roads & Parkways	$180M	$195M	$210M	$225M	$240M
Refuge Roads	$29M	$29M	$29M	$29M	$29M
Public Lands	$260M	$280M	$280M	$290M	$300M
Total	**$769M**	**$834M**	**$889M**	**$954M**	**$1,019M**

Program Purpose

The Federal Lands Highways program provides for transportation planning, research, engineering, and construction of highways, roads, and parkways and transit facilities that provide access to or within public lands, national parks, and Indian reservations.

Statutory References

SAFETEA-LU Section(s): 1119
Other: 23 USC 202, 203, 204

Funding

Federal Lands Highways (FLH) program authorizations thru 2009 for Indian Reservation Roads (IRR), Park Roads and Parkways, Refuge Roads, and Public Lands Highways total $4.5 billion.

Direct transfer of apportioned funds to a Federal agency upon State request is now allowed.
FLHP funds can be used as the State/local match for Federal-aid highway or transit projects that provide access to or within Federal or Indian lands.

Public Lands Highways

New eligible uses of Public Lands funds include up to $20 million per year for maintenance of Forest Highways, $1 million per year for signage identifying public hunting and fishing access, and $10 million by the Secretary of Agriculture to facilitate the passage of aquatic species beneath roads in the National Forest System.

Public Lands Highway Discretionary (PLHD) Program

Contact: FHWA HEADQUARTERS PROGRAM OFFICE
Larry Beidel, Highway Engineer, Office of Program Administration
Phone: (202) 366-4653
Fax: (202) 366-3988
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Program Information (February 2007)

***** PROCEDURES FOR FY 2007 *****

For FY 2007, it appears that Congress may pass a continuing resolution at FY 2006 funding levels through the end of FY 2007, without any specific designating of the funds. Therefore, we are anticipating an open competition for these FY 2007 PLHD funds for the first time since FY 2001. Therefore, the procedures for "Projects Not Designated by Congress" outlined above under Eligibility, Selection Criteria, Solicitation Procedure, and Submission Requirements shall be used. If the situation changes, and Congress does designate our funding, the procedures will be adjusted accordingly.

This information last modified on February 8, 2007 by FHA, PLHD.

BACKGROUND:

The Public Lands Highways (PLH) Program was originally established in 1930 by the Amendment Relative to Construction of Roads through Public Lands and Federal Reservations. Funding was provided from the General Fund of the Treasury. The intent of the program is to improve access to and within the Federal lands of the nation. The Federal-Aid Highway Act of 1970 changed the funding source for the program from the General Fund to the Highway Trust Fund, effective in fiscal year (FY) 1972. The program has been continued with each highway or transportation act since then, and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU, Public Law 109-59) continues the program through FY 2009.

STATUTORY REFERENCES:
23 U.S.C. 202, 203 & 204; SAFETEA-LU, Section 1101(a)(9)(D)

FUNDING:

Fiscal Year	2005	2006	2007	2008	2009
Authorization	$88.4M	$95.2M	$95.2M	$98.6M	$102.0M

The amount of available funding is also impacted by any obligation limitation imposed on the Federal-aid highway program under the provisions of SAFETEA-LU section 1102(f), Redistribution of Certain Authorized Funds. Under this provision, any funds authorized for the program for the fiscal year, which are not available for obligation due to the imposition of an obligation limitation, are not allocated for the PLHD program,
but are redistributed to the States by formula as STP funds.

In addition, in accordance with 23 U.S.C. 204(i), some of these PLHD funds are also provided for administration expenses and transportation planning costs of Federal land management agencies.

FEDERAL SHARE:

In accordance with 23 U.S.C. 204(b), the Federal share of the costs for any project eligible under this program is 100 percent.

OBLIGATION LIMITATION:

The PLHD funds are subject to obligation limitation; however, 100 percent obligation authority is provided with the allocation of funds for the selected projects. The obligation limitation reduces the available funding for the program under the provisions of SAFETEA-LU section 1102(f) discussed above.

ELIGIBILITY:

Projects Not Designated by Congress

Under the provisions of 23 U.S.C. 202(b)(1)(A), the funds shall be allocated "among those States having unappropriated or unreserved public lands, nontaxable Indian lands or other Federal reservations, on the basis of need in such States." Since all of the States have some Federal lands, all are eligible to apply for PLHD funding.

In accordance with 23 U.S.C. 204(b)(5), the PLH funds are available for "any kind of transportation project eligible for assistance under title 23, United States Code, that is within, adjacent to, or provides access to" Federal lands or facilities. Under the provisions of 23 U.S.C. 204(b)(1)(A), the PLH funds are available for transportation planning, research, engineering, and construction of the highways, roads, and parkways, and of transit facilities within the Federal public lands. Under the provisions of 23 U.S.C. 204(b)(1)(B), the PLH funds are also available for operation and maintenance of
transit facilities located on Federal public lands.

Under 23 U.S.C. 204(h), eligible projects under the PLH program may also include the following:

Transportation planning for tourism and recreational travel, including the National Forest Scenic Byways Program, Bureau of Land Management Back Country Byways Program, National Trail System Program, and other similar Federal programs that benefit recreational development.

- Adjacent vehicular parking areas.
- **Interpretive signage.**
- Acquisition of necessary scenic easements and scenic or historic sites.
- Provision for pedestrians and bicycles.

- Construction and reconstruction of roadside rest areas, including sanitary and water facilities.
- Other appropriate public road facilities such as **visitor centers** as determined by the Secretary.
- A project to build a replacement of the federally owned bridge over the Hoover Dam in the Lake Mead National Recreation Area between Nevada and Arizona.

Projects Designated by Congress

Since FY 2002, Congress has been fully designating all of our available PLHD funding for specific projects that they list in the Statement of Managers in the conference report that accompanies the annual transportation appropriations act. In addition, Congress has established a provision in the annual transportation appropriations act that declares these listed projects eligible for PLHD funding "notwithstanding any other provision of law." Therefore, the projects designated by Congress in the Statement of Managers are eligible for PLHD funding provided the proposed work in the application submitted by the State falls within the description of the designated project, as listed in the Statement of Managers.

SELECTION CRITERIA:

Projects Not Designated by Congress

The only statutory criterion is found in 23 U.S.C. 202(b)(1)(B): "The Secretary shall give preference to those projects which are significantly impacted by Federal land and resource management activities that are proposed by a State that contains at least 3 percent of the total public land in the United States." The following eleven States have at least 3 percent of the Federal public lands in the United States: Alaska, Arizona, California, Colorado, Idaho, Montana, **Nevada**, New Mexico, Oregon, Utah, and Wyoming.

FHWA has not established regulatory criteria for selection of PLHD projects; however, in its annual solicitation, FHWA notes that the following criteria are also considered in the evaluation of candidates for this program:

- Equitable distribution of funding among the States - In applying this criterion, the PLHD funding distributed over the past 20 years is considered and two factors are used to determine a State's fair share of this distribution: (1) the State's share of the Nation's Federal public lands and (2) the percentage of an individual State's area that is comprised of Federal public lands. Preference is given to those States that are "behind" in their fair share of the funding.

- Leveraging of private or other public funding - Because the annual requests for funding far exceed the available PLHD funds, commitment of other funding sources to complement the requested PLHD funding is an important factor.

- Expeditious completion of project - Preference is also given to requests that will expedite the completion of a viable project over requests for initial funding of a project that is dependent on future commitment of funding before a usable project can be completed.

Projects for construction of a usable project are given preference over projects for planning or design. For large-scale projects consideration is given to the State's total funding plan to expedite the completion of the project.

- Amount of PLHD funding - The requested amount of funding is another consideration. For States that have a relatively small amount of Federal public lands, moderately sized (< $500,000) project requests are given more favorable consideration than projects requiring a large amount of PLHD funds.

- State priorities - For States that submit more than one project, consideration is given to the individual State's priorities.

- Special or unique Federal public lands transportation needs - This criterion considers those special or unique Federal public lands transportation needs for a particular project that merit additional consideration, or satisfy a particular emphasis area.

- Congressional direction or guidance - Often Congress specifies in the legislative process that funding be designated for specific projects. This congressional intent is honored provided that the designated projects meet the statutory eligibility criteria for the program.

Projects Designated by Congress

Since FY 2002, Congress has been fully designating all of our available PLHD funding for specific projects that they list in the Statement of Managers in the conference report that accompanies the annual transportation appropriations act. In addition, Congress has established a provision in the annual transportation appropriations act that declares these listed projects eligible for PLHD funding "notwithstanding any other provision of law." Therefore, the projects designated by Congress in the Statement of Managers are selected for PLHD funding provided the proposed work in the application submitted by the State falls within the description of the designated project, as listed in the Statement of Managers.

SOLICITATION PROCEDURE:

Projects Not Designated by Congress

Prior to FY 2002, usually around March of each year, a memorandum was sent from the FHWA Headquarters Office of Program Administration to the FHWA division offices requesting the submission of candidate projects by States for the following fiscal year's funding. This solicitation is also be posted on FHWA's website at http://www.fhwa.dot.gov/discretionary/. The FHWA division offices provide this solicitation request to the State transportation departments, who are the only agencies that can submit candidates for this program under the provisions of 23 U.S.C. 202(b)(1)(A). The State transportation department coordinates with local and Federal agencies, and with Indian Tribal governments within their State to develop viable candidate projects. The State transportation department submits the candidate applications to the FHWA division office. After the division office has reviewed the submission and ensured that the submission and all

applications meet the requirements, they send the applications to the Office of Program Administration in Headquarters. Candidate projects are due in FHWA Headquarters usually in July. The specific timetable for the solicitation process for any particular fiscal year is provided in the solicitation memorandum. **The next Application due date will be March 30, 2007, with a possible extension to April 30, 2007.**

The candidate project applications are reviewed and evaluated by the Office of Program Administration, and an allocation plan is prepared for presentation of the candidate projects to the Office of the Federal Highway Administrator, where the final selection of projects for funding is made.

Projects Designated by Congress

When Congress fully designates all of our available PLHD funding for specific projects that they list in the Statement of Managers in the conference report that accompanies the annual transportation appropriations act, FHWA does not solicit for candidate projects until after passage of the annual appropriations act. At that time, we know the extent of the congressional designating of funds, and will solicit applications only for those designated projects, because the law [23 U.S.C. 202(b)(1)(A)] still requires allocations to be made on the basis of applications from the States transportation agencies.

Because it is often October or November before the annual appropriations act is passed, the solicitation for applications from the State transportation departments may not be issued until November or even December. With applications due a month or two after that, it may well be March or April before awards are actually announced and funds available for allocation.

SUBMISSION REQUIREMENTS:

Projects Not Designated by Congress

Only State transportation departments may submit applications for funding under this program. The application for each project must include the following information (17 items) so that a proper evaluation may be made of all candidate projects. Those applications that do not include these items are incomplete and will not be considered in the evaluation and selection process. The application for each project must be submitted electronically in MS Word format, and be limited to two pages.

1. State in which the project is located.

2. County in which the project is located.

3. U.S. Congressional District No.(s) in which the project is located. This is the U.S. Congressional District, not the State district.

4. U.S. Congressional District Member's Name(s). This is the U.S. Congressional District representative, not the State legislature. Please ensure that the member listed is the current member (new 110th Congress).

5. Project Title - This should be a very short project description that readily identifies the project.

6. Project Location - Describe the specific location of the project, including route number and termini, if applicable. Also include appropriate local jurisdiction in which the project is located.

7. Proposed Work - Describe the project work that is to be completed under this particular request, and whether this is a complete project or part of a larger project.

8. Public Lands Category - Specify what Federal public lands are being served by the project and whether the project is within, adjacent to, or provides access to these Federal public lands. State or local public lands do not make a project eligible, and should not be included here.

9. Project Purpose & Benefits - The States' submission should show how the proposed project meets the Federal land and resource management needs in the State. This should include a list of the needs for the project and how each of those needs will be addressed by completion of the project. Particular attention should be given to how the proposed project will benefit access to Federal public lands, as well as other transportation benefits that will result from completion of the project. Other benefits may include improved public safety, economic development, community enhancement, etc. Specifics, such as anticipated reductions in accident rates, etc. should be provided if available.

10. Planning and Coordination - For the proposed project, describe the coordination with and input from the various Federal land management, State, Indian Tribal governments, and metropolitan planning agencies involved. Section 204(a) of title 23, United States Code, requires all regionally significant Federal lands highways program projects to be developed in cooperation with States and metropolitan planning organizations, and included in appropriate Federal lands highways program, State, and metropolitan plans and transportation improvement programs.

11. Current and Future Traffic - For highway projects, provide the current and design year traffic volumes. For other facilities, such as visitor centers or pedestrian facilities, provide information on current and projected users of the facility.

12. Project Administration - Indicate whether the project is being administered by the State transportation agency, a county or other local jurisdiction, a Federal Lands Highway division of FHWA, Indian Tribal governments, or another Federal agency. This information is needed to determine to whom to allocate the funds if the project is selected for funding.

13. Amount. of Federal PLHD Funds Requested - Indicate the amount. of Federal PLHD funds being requested for the fiscal year. Candidates should only be submitted from projects that are ready to advance in that fiscal year. If a State is willing to accept partial funding of the request, that amount. should also be indicated, and should be based upon the ability to fashion a project that is ready to advance in the fiscal year

with that amount. of funding. Sometimes partial funding of requests is utilized to provide funding to more projects, since the requests far exceed the funding available.

14. Commitment of Other Funds - Indicate the amount and sources of any private or other public funding being provided as part of this project. Only indicate those amount of funding that are firm and documented commitments. Do not include funding that was provided for previous projects or previous or future phases of work. Only the committed funding to go with this fiscal year's PLHD request is to be included. Only specific amount with the source identified will be considered in the evaluation process.

15. Previous PLHD Funding - Indicate the amount. and fiscal year of any previous PLHD funds received for this project. Only include previous PLHD funds, not other funding sources.

16. Future Funding Needs - Indicate the estimated future funding needs for the project, including anticipated requests for additional PLHD funding and the items of work for which the funds are needed. For example, if the current request is for design work or an initial phase of construction, funding needs for future construction should be included.

17. Project Schedule - The anticipated project schedule (assuming the requested PLHD funding is provided) is required. The schedule should show how the work will be commenced in the fiscal year for which the funds are being requested. Applications should only be submitted for projects that are ready to advance (funds obligated) in the current fiscal year, if the funding request is met.

If the State desires to submit additional information, such as maps, pictures, copies of support letters etc., those items must be submitted by hard copy to the FHWA division office, who will submit them to the Office of Program Administration. This additional information should be identified by the State and Project Title that matches items 1 and 5 of the electronic application. These additional items are not required and are not to be sent electronically. Any support letters should be addressed and sent to the Federal Highway Administrator, who is the official ultimately responsible for selecting projects.

If submitting more than one application, the State must also list their priority for each project. This may be noted on each application or in the State's submission email.

Projects Designated by Congress

Only State transportation departments may submit applications for funding under this program. The application for each project must include the following information (12 items) so that a proper evaluation may be made of all candidate projects. Those applications that do not include these items are incomplete and will not be considered in the evaluation and selection process. The application for each project must be submitted electronically in MS Word format, and be limited to two pages.

1. State in which the project is located.

2. County in which the project is located.

3. U.S. Congressional District No.(s) in which the project is located. This is the U.S. Congressional District, not the State district.

4. U.S. Congressional District Member's Name(s). This is the U.S. Congressional District representative, not the State legislature.

5. Project Designation (Title) - This should be the description of the project as listed in the Statement of Managers in the conference report accompanying the annual appropriations act.

6. Project Location - Describe the specific location of the project, including route number and termini, if applicable. Also include appropriate local jurisdiction in which the project is located.

7. Proposed Work - Describe the project work that is to be completed under this particular request, and whether this is a complete project or part of a larger project. Please ensure that the proposed work falls within the description of the designated project (Item 5 above).

8. Public Lands Category - Specify what Federal public lands or facilities are being served by the project, and whether the project is within, adjacent to, or provides access to these Federal public lands or facilities. If no Federal public lands or facilities are being served by the project, please indicate that.

9. Project Purpose & Benefits - Describe the purpose of the project and the expected benefits to be realized upon completion of project. Particular attention should be given to how the proposed project will benefit access to Federal public lands or facilities, as well as other transportation benefits that may include improved public safety, economic development, community enhancement, etc. Specifics, such as reductions in accident rates, etc. should be provided if available.

10. Project Administration - Indicate whether the project is being administered by the State transportation agency, a county or other local jurisdiction, a Federal Lands Highway division of FHWA, Indian Tribal government, or another Federal agency. This information is needed to determine to whom to allocate the funds for the project.

11. Amount. of Federal PLHD Funds Requested - Indicate the amount. of Federal PLHD funds being requested for the fiscal year. This should be the amount. designated by Congress in the Statement of Managers. States should be aware that, with the required reductions to the PLHD funding, the actual award amount will be less that these designated amount.

12. Project Schedule - The anticipated project schedule is required, including anticipated contract award and proposed project completion.

ANNOUNCEMENT OF AWARDS / ALLOCATION OF FUNDS

After the applications are received and projects are selected for funding, it is required that Congress be notified before the funds are allocated to the States. When this Congressional notification process is completed, the Office of Program Administration will issue an announcement by email to all FHWA division offices, announcing the PLHD projects that will be funded and the amount. of funding for each project.

At that time, States may request that funds be allocated for any projects for which the funds are ready to be obligated. The State transportation agency shall send an email to the FHWA division office indicating the project, the amount. requested for allocation, and the date by which the funds will be obligated. The Office of Program Administration will issue the allocation memorandum within a few days of receiving the allocation request.

STATE TRANSPORTATION AGENCY RESPONSIBILITIES:

1. Coordinate with State, local, and Federal agencies within the State to develop project applications.

2. Ensure that the applications are completed for candidate projects in accordance with the submission requirements outlined above.

3. If required, establish priorities if submitting more than one project.

4. Submit the applications electronically to the local FHWA division office on time so that the submission deadline can be met.

5. Submit request to FHWA division office for allocation of funds, after awards are announced and when project funds are ready to be obligated.

FHWA DIVISION OFFICE RESPONSIBILITIES:

1. Provide the solicitation memorandum and this program information to NDOT electronically to facilitate their electronic submission of applications.

2. Request candidate projects be submitted by the State to the FHWA division office electronically to meet the submission deadline established in the solicitation.

3. Review all candidate applications submitted by the State prior to sending them to FHWA HQ to ensure that they are complete and meet submission requirements.

4. Submit the candidate applications electronically to FHWA Headquarters Office of Program Administration as outlined in the solicitation memorandum. Include the following with the transmitting Email message:

a. Statement from the division office that the State's submittal has been reviewed by the division office and that it meets the submission requirements.

b. State transportation department submission email or letter to the FHWA division office. (This will document that all applications were submitted by the State transportation department, as required by law.)

c. Each MS Word two-page application as a separate attachment.

5. Forward award announcement to the State.

6. Forward allocation requests from State to the Office of Program Administration, via email to Larry Beidel (Larry.Beidel@dot.gov).

FHWA HEADQUARTERS PROGRAM OFFICE RESPONSIBILITIES:

1. Solicit applications from the States through annual solicitation memorandum.

2. Review applications and compile appropriate program and project information for the Office of the Federal Highway Administrator.

3. Issue award announcement via email to all FHWA division offices.

4. Allocate funds upon receipt of request from State through the FHWA division office.

Scenic Byways Program

Contact: Sydnie Schlachta
State Systems Coordinator
Roadway Systems Division,
NDOT
1263 S. Stewart St.
Carson City, NV 89712
775-888-7179 fax 775-888-7019

SAFETEA-LU authorizes a total of $175 million through 2009 for technical assistance and grants to States and Indian Native peoples to develop scenic byways programs, and to implement projects on highways of outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities designated as National Scenic Byways, All-American Roads, America's Byways, State scenic or Indian Native people scenic byways. Additional authority totaling $13.5 million is provided to fund technical support and educational activities provided by the America's Byways Resource Center. [1802,1803]

National Scenic Byways Program

Year	2005	2006	2007	2008	2009
Authorization	$26.5M	$30M	$35M	$40M	$43.5M

Program Purpose
The program recognizes roads having outstanding scenic, historic, cultural, natural, recreational, and archaeological qualities and provides for designation of these roads as National Scenic Byways, All-American Roads or America's Byways.

Statutory References
SAFETEA-LU Section(s): 1101(a)(12), 1802
Other: 23 USC 162

Funding

Funded by contract authority, to remain available for 4 years. Funds are subject to the overall Federal-aid obligation limitation.

Grants and technical assistance are provided to States and Indian Native peoples to implement projects on highways designated as National Scenic Byways, All-American Roads, America's Byways, State scenic or Indian Native people scenic byways; and to plan, design, and develop a State or Indian Native people scenic byway program.

The mission of Nevada's Scenic Byway Program is: "To identify, promote, and protect the State's most exceptional roadways for the traveling public and for the betterment of Nevada communities."National Scenic Byways Program (NSB) discretionary funds are available to develop scenic byways programs, and to implement projects on highways of outstanding scenic, historic, cultural, natural,recreational, and archaeological qualities designated as National Scenic Byways, All-American Roads, America's Byways, State scenic or Indian Native people scenic byways. SAFETEA-LU provisions include additional funding for technical support and educational activities provided by the 'America's Byways Resource Center'. There are eight eligible grant categories for the use of these funds: Establishing State Byway Programs, Developing Corridor Management Plans, Safety Improvements, Byway Facilities, Access to Recreation, Resource Protection, Interpretive Information, and Development of a Byway Marketing Plan. Annually, Scenic Byway grant applications are solicited from state agencies, local governments, and various local groups who support the Byways. Prioritization of Scenic Byways discretionary grants is a cooperative effort between local communities, local governments, and state agencies.

Completed applications are submitted to the Scenic Byways Committee. The Committee conducts a preliminary review of the grant applications and prioritizes them before they are sent to the FHWA Divisional Office. Prioritization of the applications is based on overall project appeal, the project's benefit to the Byways and the State, community support, right-of-way needs and the project costs. Additional criteria include: is the project on a National or All-American Byway, consistent with the Corridor Management Plan, and/or based on a prior grant award. The categories used for project prioritization are not weighted. The FHWA divisional office reviews the applications and provides their recommendations before they are submitted to the FHWA national headquarters. Final project selections are made by the FHWA on a national level. Passing lanes are no longer eligible for expenditure of Scenic Byway Program funds.

America's Byways Resource Center

The Center provides technical support to conduct educational activities for National Scenic Byways, All-American Roads, and America's Byways. Funds are available to provide proactive, technical and on-site assistance that includes training, communications, publications, conferences, meetings, and other appropriate assistance to local officials and organizations associated with the byways program.
Funding provided by authorizations of $1.5 million for FY 2005 and $3 million for each FY 2006 –2009. Funds are available until expended, and subject to the overall Federal-aid obligation limitation. Federal share is 100 percent and funds are not transferable.

Eligible Use of Funds

Funds shall be available for:

- an activity related to the planning, design, or development of a State or Indian Native people scenic byway program;
- development and implementation of a byway corridor management plan;
- safety improvements to accommodate increased traffic; improvements that enhance access; protection of resources adjacent to the byway;
- development and implementation of a marketing program;
- development and provision of tourist implementation; and construction of bicycle and pedestrian facilities, interpretive facilities, overlooks and other enhancements for byway travelers.

Federal Share

The Federal share remains at 80 percent. A Federal land management agency may use agency funds as the non-Federal share.

Web Site: www.byways.org . Projects are submitted each year for federal "discretionary" funds. The selections are decided in Washington DC. Nevada does not receive any guaranteed amount.. Projects must be on or adjacent to a designated Scenic Byway. The program provides reimbursement, not grants. Applicant agency must provide matching funds—at least 20% of the total cost. Funds authorized for use by a federal land management agency can be used as the state's matching share for a project located along a public road that provides access to or is within federal or Indian land.

Forest Highway Program FHP
Contact: Nevada Department of Transportation,?

The Forest Highway Program (FHP) is a direct federal program, managed through the Central Federal Lands Highway Division (CFLHD) of the Federal Highway Administration (FHWA). The purpose of the program is to improve roads that connect National Forests to the main state transportation network. The primary goal is to provide improved access to the National Forests for projects and recreation.

The majority of FHP funds are used for road construction and reconstruction projects. *Some of the funds can be used for enhancements.* Projects are selected by the Tri-Agency Committee, with representation from the Nevada Department of Transportation (NDOT) FHWA, and the Forest Service. The projects become part of the State Transportation Improvement Program, with normal time lines for development and delivery. The Tri-Agency meets annually in the spring and coordinates on the Nevada Forest Highway Program 7 Year Plan. *Matching funds are not required* but will be considered in evaluating and prioritizing projects.

Forest Highway enhancements are not the same as the STP Transportation Enhancements. Eligible activities include *interpretive signs, scenic sites, viewpoints and pullouts; and other*

road-related activities, including short trails to points of interest near a highway. Scenic Byway corridor improvements will also be considered. The strongest candidates will be high priority, simple projects that are relatively low in cost. According to the Forest Service, *the optimum size is $50,000 to $400,000*.

To qualify for this program, projects must be on or adjacent to a forest highway, as designated by the Forest Highway Program. A map of qualifying road segments is available. All projects must be submitted jointly with the US Forest Service. The evaluation criteria favor projects that will increase recreational use of the National Forests, protect the rural environment, improve safety or access, or improve the function, capacity, or aesthetics of a specific site.

High Priority (DEMO) Projects Program.
Contact: NDOT ?

A demonstration (demo) project is a project that has been specifically established and funded by Congress through Federal law. They are earmarked projects. Demo projects are generally provided as part of the periodic transportation authorization acts or the annual transportation appropriations acts.

Project Eligibility--The designated funding can only be used for projects as described in the law; however, demo projects may be any type of transportation project.

Funding—This is a reimbursed program, not a grant program. For projects earmarked in transportation acts, applicants must provide 20% match for the federal funds. In addition, transportation acts distribute the allocations incrementally, on a yearly basis, over the life of the act.

Annual Appropriations Acts usually provide 100% reimbursement and makes available the full allocation in the year of the act.

Local agencies may request Advance Construction Authority, which authorizes them to begin work prior to the full availability of the demo funds as long as they use non-federal funds for the advance work. However, there is not a 100% guarantee that the federal funds will become available and, therefore, the local agency accepts the risk of not being reimbursed for their project.

Demo funds subject to Obligation Authority (OA) is set aside specifically for this program and may not be used elsewhere. The OA for project from transportation acts is also subject to annual limits set by Congress known as "obligational limitation". Even though a certain amount. of funds is authorized by legislation, the transportation acts place limits on how much can actually be spent. The affect this has on transportation act funds is that only about 88% of the total allocation is expected to be available to the sponsoring agency for the project. Obligation Authority does not expire at the end of the fiscal year, but carries over until obligated. The funds allocated to these projects are often far less than requested. Historically, some demo projects have not gone forward, even though funds have been earmarked, due to lack of local agency or regional support needed to match, fully fund, or

administer the project. It is important that the support needed to implement proposed projects be generated in advance of the application to Congress.

Project Selection Process--Demonstration projects are initiated by Congress, usually at the request of constituents within a given Congressperson's district. Applications from constituents are often solicited by their respective Congressperson. NDOT recommends that the local agency sponsor of a potential demo project submit a copy of the application sent to their Congressman to their NDOT District Local Assistance Engineer who will forward it to the NDOT HQ Program Coordinator. This information allows the Program Coordinator to identify the project's sponsor and scope in anticipation of the new legislation and avoid delays in project implementation common at the start of new legislation.

Specific Recommendation: US Forest Service could contact Washoe County Transportation Commission and ask them to include the Mt. Rose Scenic Byway Visitor Center and/or Scenic Byway interpretive media in the 2008 annual appropriations act. The project would need to be listed on the FTIP program document. Support of your Congress person is also required.

When writing the project description to be included in the legislation, it is important to keep it broad enough to include your project and any alternatives that may be chosen in lieu of the preferred alternative. Funds can only be used for those projects which fall within the legislated description. Any changes to the legislated description require an act of Congress and can take up to two years to complete.

Key Decision Makers--US Congress.

Recreational Trails Program

Year	2005	2006	2007	2008	2009
Authorization	$60 M	$70M	$75M	$80M	$85M

Program Purpose

The Recreational Trails program provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non motorized and motorized recreational trail uses.

Statutory References
SAFETEA-LU Section(s): 1101(a)(8), 1109; Other: 23 USC 104(h) & 206

Funding/Formula
Funded by contract authority, to remain available for 4 years. Funds are subject to the overall Federal-aid highway obligation limitation.

Before apportioning funds to the States, there will be a takedown of $840,000 each fiscal year (2005-2009) for program research, technical assistance, and training expenses. Funds will be distributed to the States by formula as follows:

- 50% of the amount. will be apportioned equally among eligible States;
- 50% of the amount. will be apportioned among eligible States proportionate to the amount. of non-highway recreational fuel used in each State during the preceding year.

Eligible Use of Funds
Funds are available to develop, construct, maintain, and rehabilitate trails and trail facilities. Trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

Continued eligibilities include:

- maintenance and restoration of trails
- development and rehabilitation of trailside and trailhead facilities
- purchase and lease of trail construction and maintenance equipment
- construction of new trails (with some limits on Federal lands)
- acquisition of easements and fee simple title to property
- assessment of trail conditions for accessibility and maintenance
- development and dissemination of publications and operation of trail safety and trail environmental protection programs (including non-law enforcement monitoring and patrol programs and trail-related training), not to exceed 5% of the annual apportionment
- State costs for administering the program, not to exceed 7% of the annual apportionment

New eligible activities include:

- assessment of trail conditions for accessibility and maintenance
- clarification that educations funds may be used for publications, monitoring and patrol programs and for trail-related training

Program Features

States must meet minimum funding between motorized, non-motorized and diverse trail use:

- 40% for diverse trail use;
- 30% for non-motorized recreation
- 30% for motorized recreation
- The ability for a State recreational trails advisory committee to waive the setasides for non-motorized and motorized recreation has been eliminated by SAFETEA-LU.

States are encouraged to enter into contracts and cooperative agreements with youth conservation and service corps to perform trail construction and maintenance.

Federal Share

The Federal share will be in accordance with section [23 USC 120(b)] (i.e. the sliding scale provision), but funds from other Federal programs outside the U.S. Department of Transportation may be used to fulfill the non-Federal share requirement, except that the combination of the U.S. DOT other Federal agency share may not exceed 95 percent.

Upon approval, planning and environmental assessment costs incurred prior to project approval may be credited toward the non-Federal share cost of the project, limited to costs incurred not more than 18 months prior to project approval.

Recreational Trails program funds may be used to match other Federal program funds for purposes that would be eligible under the Recreational Trails program.

Appendix C – Detailed Research Information

The research information in this Appendix is grouped by Site #. This Appendix contains more research on the storylines presented in the Site Opportunity Forms of the Plan.

Steamboat Hot Springs, Site 3, page 65.

(Detailed research information below is from the Nevada Bureau of Mines and Geology, special publication 19.)

The main spring terrace is the white area just above highway 395 near the valley floor. Before geothermal wells for the power plant were drilled, several springs vented to the surface here and created the steamboat effect that earned the area its name. In the 1850s these springs were a favorite camping ground for early emigrants to California who were traveling through the Truckee Meadows. The travelers marveled at the sight of the springs puffing and blowing off large wreaths of steam like a steamboat and, by 1857, the name “Steamboat” was firmly affixed to the feature.

The large structures to the right of the terrace are cooling towers for one of the geothermal power generating plants at the site. Above the cooling towers is the high terrace of the springs and Sinter Hill. Pine Basin, to the left and slightly above Sinter Hill, stands out as the sole outpost of pine trees on these barren hills. A second, smaller geothermal plant is located high on the hills to the south of Pine Basin.

Following the discovery of the Comstock Lode, the opening of the Geiger-Tilton Toll Road to Virginia City, and the later extension of the V&T Railroad to this point, Steamboat grew from a loosely knit assemblage of shanties into a bustling shipping point on the railroad.

Over the succeeding years, a number of spas and resorts were developed at the hot springs and currently, there is one privately owned and operated spa in operation in the lower terrace area.

Historically, the hot springs displayed much more surface activity than at present. Drilling for geothermal development has relieved the pressure on the system; hot water still flows to the surface, but the springs no longer huff, puff, or emit geysers as in the past.

Steamboat Hot Springs is located in a shattered zone created by a system of north-trending faults (the Steamboat Hot Springs fault system, part of the Sierra Nevada frontal fault zone) and is the site of frequent earthquake swarms probably related to tectonic processes. Hot springs deposits are known to be present beneath some of the 2.5-million-year-old basalt flows that crop out in the Steamboat Hills, indicating that the hot springs system has been at least intermittently active for at least 2.5 million years.

The springs at Steamboat are near boiling, and temperatures as high as 442°F have been recorded in drill holes at depths over 3,000 feet. The springs possibly derive their heat from a magma chamber that may lie deep under this area; surface water seeps downward along the faults in this area, is heated, and rises back to the surface as steam and hot water. As the heated groundwater rises, it boils and releases gases, including hydrogen sulfide which combines with the condensed steam above the water table to form sulfuric acid. This acidic

water chemically leaches the rocks, resulting in what is called acid-sulfate alteration. This alteration leaves the rocks chalky, bleached, and variably stained shades of red, yellow, and tan similar to rocks seen on Geiger Grade.

In addition to altering the bedrock in the area, the hot springs water deposited layers of sinter at surface, forming the spring terraces that you now see. Sinter is a spring deposit composed of silica (opal or chalcedony). If spring deposits are composed of carbonate minerals, they are called travertine. The spring deposits of the Steamboat Springs thermal area are mostly all sinters which formed on broad discharge aprons below the springs. Near-boiling water, with a high content of dissolved silica and a high rate of evaporation result in the deposition of opaline sinter. With time, the opaline sinter changes to chalcedonic sinter, a conversion process that generally requires many thousands of years (opal is amorphous—a mineral gel; chalcedony is cryptocrystalline—very, very finely crystalline). The deposits of chalcedonic sinter at Steamboat are often colored pink by the presence of cinnabar (mercury sulfide) which turns black when exposed to sunlight. (this darkening may be related to the fine grain size of the cinnabar). In places, sinter displays bedding, and the original, fragile layers can crack and break into pieces to form fragmental deposits. Casts of plant roots and stems are abundant in some areas of
the sinter. There are three prominent sinter terraces at Steamboat Hot Springs:

the lower terrace below and to the right (east) of the highway; the main terrace, above the highway to the west; and the high terrace, farther west at the foot of Sinter Hill. The main and lower terraces are the youngest and are composed of opaline sinter; the high terrace is oldest and is composed of chalcedonic sinter.

The thermal waters at Steamboat contain traces of metals, including mercury, antimony, silver, and gold, and have deposited small amount of stibnite, gold, and silver, and larger amount of cinnabar in both sinter and in altered wall rocks adjacent to the hot-spring vents. In 1873, John Poe (a miner from Peavine Mountain north of Reno and cousin to Edgar Allen Poe) and Louis Dean created the Nevada Quicksilver Mining Company. They erected a furnace in the “silica pit” and produced both mercury and sulfur for several years. Mining in the area was sporadic for nearly 100 years since that time (the last operation was in 1969), and the recorded production has totaled only 230 flasks (about 17,480 pounds) of mercury. The small amount. of naturally occurring mercury in the thermal water continues to be of interest, however, because the water flows into Steamboat Creek and eventually the Truckee River. Even trace amount of mercury are now considered to be potentially hazardous to life.

The Steamboat Hot Springs area serves as a modern analog for many hydrothermal ore deposits. The shallow boiling system has many of the features of epithermal and hot springs deposits found throughout the world. Study of this modern metal-depositing system can lead to a better understanding of and exploration for fossil hydrothermal systems (the Comstock Lode, for example).

The first geothermal well was drilled at Steamboat Springs about 1920. Before this time, the succession of resorts at the site had depended on hot water piped from natural springs to supply their hot baths. The U.S. Geological Survey drilled a number of test wells for research purposes in the 1950s, and Nevada Thermal Power Co. drilled six steam wells (the deepest was 1,830 feet) in the late 1950s and early 1960s. The first deep test wells capable

of production of geothermal fluids were drilled in 1979 and 1981 by Phillips Petroleum Company. Since the mid-1980s, several companies have been using the steam to generate electricity, which they sell to the local power company.

At the present time there are five geothermal power-generating plants in operation in the Steamboat area; all are owned by Ormat Nevada, Inc. A complex of four air-cooled, binary generating plants on the low terrace on the left have a total production capacity of 54 megawatts. The large rack structures are fans used to recondense working fluid to a liquid so that it can be run back through the heat exchanger. Higher on the side of the Steamboat Hills is a 14.4-megawatt flash turbine generating plant.

Nevada is second only to California in installed geothermal capacity and, in 2003, produced approximately 1.1 million megawatt-hours of geothermal power, with a sales value of about $65 million.

Geothermal Energy for Power Generation

Geothermal resources have been known since the dawn of mankind, when natural hot springs were first used for cooking and bathing. Today, the use of geothermal energy is increasing rapidly. Resources having temperatures higher than about 220°F are usually used for generation of electricity while lower-temperature resources are used to heat homes and greenhouses, dry food and lumber, raise fish, and provide water for cooking and bathing.

In order to extract geothermal heat from subsurface rocks and bring it to the surface, a heat-transfer fluid is needed. Fortunately, Mother Nature supplies groundwater for this purpose. Hot rocks at depth below a geothermal reservoir heat groundwater and set it into convective motion, causing it to rise buoyantly through interconnected faults, fractures, and pores in the rocks. The total open space in the interconnected faults, fractures, and pores may comprise only 2 to 5 percent of the rock volume, but when filled with thermal water, a geothermal reservoir is formed.

Modern geological, geochemical, geophysical, and remote sensing exploration techniques are used to find such a reservoir in the subsurface and to determine where successful production wells may be drilled.

For generation of electricity by flash steam power plants, hot water at temperatures ranging about 300°F to nearly 700°F is brought to the surface from the underground reservoir through production wells, which may be less than 1,000 feet to more than 10,000 feet deep. These fluids from depth are under high pressure, and when this pressure is reduced, 10 to 20 percent of the water flashes (explosively boils) to steam. The steam is separated from the remaining liquid and fed to a turbine, which turns a generator. The remaining water is injected back into the peripheral parts of the reservoir to help maintain subsurface pressure. A few high-temperature reservoirs, such as The Geysers in northern California, yield steam directly from the reservoir rather than water, but most produce a mixture of steam and water.

For lower-temperature reservoirs, those between about 220°F and about 300°F, binary power-plant technology can be used more effectively than flash-steam technology.

In a binary plant, the geothermal fluid is passed through a heat exchanger to heat a secondary working fluid, usually an organic fluid such as isopentane, which vaporizes at a lower temperature than water. The working-fluid vapor turns the turbine and is condensed to liquid form before being reheated and vaporized again by the geothermal water. It is, thus, used repeatedly in a closed-loop cycle to drive the turbine-generator. The cooler geothermal water exiting the heat exchanger is injected back into the reservoir, just as it is for a flash-steam plant.

On the left is the site of the new Redfield Campus of the University of Nevada. Buildings on this campus will be heated entirely by geothermal water. Buildings of a geothermal resort are on the right. A few homes in this area use geothermal energy for heating.

(Information below from current Steamboat Hot Springs resort):

Steamboat Hot Springs is one of the oldest known sites in the world of continuous hot spring activity producing surface mineral deposits.

Early Visitors to the area were impressed with the power of the Steamboat area. David Palmer wrote in 1861, "The ground trembles here and scalding water sullies forth from cracks in the earth. Jets of steam engulf the land and the air is heavy with the scent of brimstone and sulfur."

The most numerous geothermal features on the site are fumeroles, or steam vents, which vary from very small "peepholes" to large "whistlers" and "blowholes."

Steamboat Springs was recommended by Chief Winnemucca to the "forty-niners" for rest and enjoyment of the resuscitating effect of bathing in the hot waters.

It is generally conceded by old-timers that the name came from Mark Twain who declared, "Behold a steamboat in the desert."

The first spa was developed during the Virginia City mining days. Dr. Edna Carver came to the area in 1909 and developed a spa in the following years so the hot mineral water could be used for therapeutic purposes.

Thousands of people visited Steamboat Springs and received care under Dr. Carver. It was also a popular spot where prize fighters came to train and benefit from the hot water and steam therapy.

The resort building has been completely renovated, inside and out, in recent years. Though the charm of the historic building has been retained, visitors will find new, clean tile work in a well maintained facility.

A history of the area titled: A Steamboat in the Desert, written and compiled by Roger Weld is available for $10.00 at the front desk (shipping and handling additional).

Mineral Water Baths

Water has been used for therapy since ancient times. We find references to the use of mineral waters for healing by the Egyptians, Arabians, Japanese, Native Americans, Greeks and the cultures of ancient India, to name but a few.

Water therapy, or hydrotherapy, combined with light and massage treatment, was used in ancient Greece at healing temples from the time of Asclepius. Plato also recommended the use of water treatment for various diseases.

Steamboat Springs is classed as "thermal waters" of volcanic origin which maintain excessive heat and high mineral content. The temperature of the water as it reaches the surface is between 200 and 220 degrees Fahrenheit.

Numerous sulphate minerals derived from the weathering of sulphides deposited from the hot water have been noted in chemical analysis. Some of these minerals are extremely rare. One type found here has been hitherto known only in Chile in South America. Another is a borax mineral not known before in the United States.

The altered rocks and sinter at Steamboat Springs are not friendly to the plant community and, especially on the sinter terraces, very little grows. One exception is a variety of the hardy buckwheat family, the Steamboat buckwheat (Eriogonum ovalifolium var. williamsaie). Buckwheat seems to thrive on weird soils, and this variety proves that point. It is found only on the sinter at this hot springs, an area totaling about 125 acres. With encroaching development, its numbers are declining and this unusual buckwheat is on the federal endangered species list.

The type of soil here allows Ponderosa pines to grow here, but stunted, and there are even some pinyon pines here too. Steamboat buckwheat and steamboat monkey flower are two listed sensitive plant species here. The monkey flower is a diminutive little annual which in bloom occurs as a carpet of hot pink across portions of this site. Visitors can actually notice it while driving by on Highway 395.

Information below from: Jim Morefield, Nevada Natural Heritage Program
S t e a m b o a t B u c k w h e a t ‘A special Nevada plant’

Steamboat buckwheat (Eriogonum ovalifolium var. williamsiae), is a uniquely beautiful plant found in the Steamboat Hot Springs area of southern Washoe County, Nevada. It has not been found on any other hot spring areas in the Western United States despite extensive surveys. A habitat area of approximately 150 acres, comprised of both private and public lands, is the only known location of Steamboat buckwheat in the world. Land uses within the plant’s habitat include the US 395 corridor and SB Geo, Inc., a geothermal operating company. Steamboat buckwheat was placed on the Nevada list of Critically Endangered Native Flora in 1982, which provides for the conservation, protection, restoration and propagation of selected species of flora and for the perpetuation of habitats of such species. It was also listed as endangered in 1986 under the federal Endangered Species Act. SB Geo, Inc. has been proactive in the protection of the buckwheat habitat while continuing to develop the Steamboat Springs geothermal resource for electrical power production.

Steamboat buckwheat grows naturally in young, shallow, poorly-developed soils derived from siliceous sinter materials deposited by past thermal spring flows. These soils range from highly acidic to moderately alkaline, with variable levels of soluble salts. In the most acidic soils, another rare and sensitive species, altered andesite buckwheat (Eriogonum robustum) also occurs. Eriogonum robustum is a very showy buckwheat in respect to foliage and flower. Steamboat buckwheat does not tolerate competition from native vegetation found on deeper, better-developed soils adjacent to its habitat.

CONSERVATION ISSUES

- Habitat deterioration due to elimination of spring flows most likely from the combined effects of drought and regional ground water draw-down.
- Limited distribution - only one known location in the world.
- Unique soil and habitat requirements.
- Potential for development on private lands.
- Noxious weed encroachment.
- Steamboat Ditch breaches periodically, increasing soil erosion.

HISTORY of the SPECIES and its HABITAT

1884 - First Steamboat Buckwheat collected by Katherine Brandegee, a San Francisco botanist raised in Virginia City.

1887 - Mercury and sulfur were mined nearby by the Nevada Quicksilver Company.

1981 - Formally described in the scientific literature as Eriogonum ovalifolium var. williamsiae, named in honor of Margaret Jensen Williams (1917-2000), founding member of the Northern Nevada Native Plant Society.

1982 - Species listed as Critically Endangered by the Nevada Division of Forestry.

1986 - Listed as an endangered species by the U.S. Fish and Wildlife Service under the Endangered Species Act.

1987 - Surface flows from Steamboat Hot Springs ceased.

1991 - A geothermal power plant was constructed within the habitat by Steamboat Development Corporation who performed extensive monitoring and mitigation activities, including transplantation, to minimize impacts.

1992-3 - A collection of seed was endowed for longterm storage at the Berry Botanic Garden in Portland, Oregon.

1993 - The Nature Conservancy and SB Geo, Inc., developed a joint management plan.

1995 - Recovery plan finalized by the U.S. Fish and Wildlife Service.

WHAT YOU CAN DO

- Join "Weed Warriors" to help keep noxious weeds out of the buckwheat habitat. For

information call University of Nevada Cooperative Extension at (775) 784-4848.

- Join the Northern Nevada Native Plant Society, P.O. Box 8965, Reno 89507-8965, to learn more about native plants.

- Educate friends, neighbors, and officials about the sensitivity of the site, encourage them to respect no trespassing signs, and support continued conservation efforts.

Eriogonum ovalifolium var. williamsiae (steamboat buckwheat) was named in honor of **Margaret Jensen Williams**…a local botanist. Other plants named in her honor were: Polyctenium williamsiae and Astragalus convallarius var.margaretae.

Margaret Williams was devoted to the botany of Nevada and rock gardening. She was a math instructor at UNR until 1943. In the early 1950's she began to garden. Spurred by her deep interest in rock gardening, Margaret sought to expand her botanical knowledge and enrolled in a UNR plant taxonomy course. In the late 1950's Margaret saw a note in the local paper saying that Phil Cowgill was giving a talk on wildflowers for the Reno Camera Club. She attended the meeting, met Phil and his wife Faith, and now had companions who shared her love of plants. Margaret soon met Faith's sister Laura Mills. Laura was interested in everything out-of-doors, was a tireless explorer, and in Margaret's words: "Never met a dirt road she didn't like." Laura and Margaret would spend days looking at plants and anything else in the realm of natural history. Margaret had only one rule, they had to be back on pavement by dark. Laura and Margaret spent
a lot of time exploring the "back side of nowhere" at all times of the year.

From back issues of the Quarterly Bulletin of the Alpine Garden Society, Margaret read a series of articles published from 1942 to 1947. These articles were accounts of Dwight Ripley and Rupert Barneby's explorations in Nevada. These articles had a profound effect on Margaret and she said: "it was through accounts of Rubert C. Barneby travels with Dwight Ripley plant hunting in the Great Basin, written for the Alpine Garden Society Bulletin of Great Britain, that I became aware of our fascinating native plants. Dwight Ripley described these plants so vividly and Rupert Barneby photographed them with such clarity that I felt I had to see them for myself and attempt to establish them in my garden. Had it not been for them, we might be living in a condominium and
growing geraniums in pots on the balcony instead of growing native plants on a
rocky hillside." (1981.)

Margaret went to England in 1961 to attend the International Rock Garden Plant Conference that is held every 10 years. After that trip she started collecting seeds, sending them on exchange all over the world. Her yearly lists had from 75 to 150 species. Through this seed exchange she met many more gardeners.

Margaret was an excellent speaker and had a captivating and vibrant voice. She gave many enthusiastic talks which she illustrated by her excellent plant slides. In 1971 she was asked to speak at the International Rock Garden Plant Conference, being one of two women and one of two Americans to speak. She often said that it was the biggest thrill of her life.

Early in 1975 Margaret decided it was time to start a local native plant society. On April 7th, 1975 the Northern Nevada Native Plant Society was born. Margaret served as President the first three years and as Executive Director for the next 17 years. Margaret envisioned NNNPS as a vehicle to bring together people interested in plants and used the newsletters to disseminate information. The school teacher in her always came out as she included profiles of plant families and offered one session "mini botany" meetings.

Margaret stated:

"It is my hope that this society will bring together people of all walks of life who share a common bond—the love of native plants. Not all of us are interested in plants in the same way, or have the same training or experience, but we can learn from each other and hopefully pass our feelings for native plants on to others. Please do let us know your feelings and desires so that we can make this Society more effective for all of us."

In February of 1978 NNNPS co sponsored a workshop on Nevada's threatened and endangered plants. Prompted by the publication of Federal Registers of threatened and endangered plants in 1974 and 1975 and this meeting, Margaret took on the task of seeing all of the Nevada plants, and obtaining photos as well as specimens for the UNR herbarium. This search led her to criss-cross Nevada during most of her summer vacation of 1978. She collected about a thousand numbers, including many new populations of rare plants.

Margaret received two awards from the American Rock Garden Society. The following quotes are from one of the awards. "While her influence has been mostly through her involvement with the Northern Nevada Native Plant Society, she has also been closely associated with West Coast American Rock Garden Society chapters, most recently as a guide and mentor at the annual meeting in Tahoe on July 12-15, 1990. There it was a great inspiration to see her with her walking stick on Mt. Rose, an area she knows well, not far from her native home. Margaret has been up and down the Sierra Nevada, encouraging, enlightening, and educating. For novice gardeners, Margaret has organized hikes and study sessions; for experienced horticulturalists, she has been instrumental in expanding their knowledge and their physical horizons by leading them to the unique flora of the Great Basin."

"Margaret Williams opened the door for me to appreciate and learn about native wildflowers and grasses." Dennis Ghiglieri, Reno.

"Margaret changed my life and the only regret that I have ever had is that I didn't know her at an even earlier age so I could have gone on some of the early field trips." Carol Thomas, Verdi.

Arnold Tiehm works full time as a limo driver and bellhop for the Peppermill Hotel Casino in Reno, Nevada. But on his days off, he does what he enjoys best. "I go botanizing", Tiehm says.

Over the past two decades, the botanist has discovered 19 new flowering plant species, all in his native Nevada. He's probably the only bellhop in the world, with a master's degree in botany and credit for finding the first specimens of 19 species, so far. He has 6 species named after him. His secret? "I don't really look for plants; I look for habitat."

Tiehm's discoveries, and those of dozens of other professional and nonprofessional plant collectors nationwide, are challenging a common wisdom going back at least a century—that virtually all plant species in the United States already have been found and named. Most new plants are discovered in remote, isolated habitats that differ in some way from the larger surrounding landscape. Many of these newly discovered plants also turn out to be at risk of extinction.

Arnold Tiehm met Margaret Williams in 1994 as a fresh graduate from College with a semester of botany under his belt. He called her and asked if he might accompany her on one of her field trips. They went on many field trips in the Great Basin together. Their collections resulted in a number of new taxa and many range extensions. They were the first to collect two plants named for Margaret, Polyctenium williamsiae and Astragalus convallarius var. margaretae.

Since 1996 he has co-taught a number of short courses through the UNR herbarium. These include: Basic Grass ID; Vascular Plant Families from Northern Nevada, Taxonomy of Asteraceae, and Wetland Plants. In the fall of 2005 and 2006 Christy Malone and Arnold Tiehm taught a four credit class, Range and Forest Botany.
He is currently adjunct faculty at UNR.

Callahan Ranch, Site 5, page 73:

The following information and quotes are from the 1988 oral history of Harry P. Callahan Family and Ranch published by UNR. The entire book can be purchased from UNR by calling UNR oral history program at (775)784-6932, emailing them at ohp@unr.nevada.edu or at this website: http://www.unr.edu/cla/oralhist/ohweb/oralhist.htm

INTRODUCTION

SINCE THE 1860s, ranchers have raised hay and run livestock on rocky but well-watered meadows astride the confluence of Galena and Jones creeks a few miles south of Reno. However, the site is now becoming more valued for its scenic vistas and its proximity to Reno and Lake Tahoe than for its suitability to agriculture. As development encroaches, an era is clearly ending. In 1985, to capture memories and stories of ranching in this area, Nancy J. Broughton of the UNOHP staff began a series of interviews with Harry P. Callahan, the patriarch of the family that has been there longest. The following quotes are from this oral history volume.

Harry Callahan was born in 1895. He is the grandson of Matt Callahan, an Irish immigrant who owned major brickyards in Carson City and Virginia City during the years of the Bonanza. By 1883, the Comstock Lode was practically exhausted. Many mines had closed, and those that remained were not very active. The demand for bricks consequently declined, and Matt sold his Virginia City brickyard and bought the Jacob Griner homestead in the Steamboat Hills, a few miles north of Washoe City. Even though he had no experience, he was determined to become a rancher, concentrating on dairying. Within a few years additional parcels of land had been acquired, and the ranch was providing a livelihood for the Callahan family, in whose possession it remains today.

Harry Callahan's oral history is largely an account of life on the ranch from 1884 through the post-World War II years. It contains descriptions of rural schooling, Indian-white relations, the economic matrix of the region, property and water rights struggles, and other topics common to ranching in western Nevada in that period. Mr. Callahan also describes his experiences as a Forest Service ranger in the 1920s, when family and economic pressures periodically forced him to find employment off the ranch.

Like most ranches along the eastern Sierra, the Callahan ranch went through some permutations over the years, largely in response to changes in the West's agricultural economy. For example, by the 1940s it was clear that dairying on a small scale was no longer profitable, and Mr. Callahan gradually transformed the family operation into one that principally raised beef cattle. Early years on the ranch were punctuated by property and water rights conflicts, and similar controversies have arisen in a modern context in the 1980s—as with so many Nevada ranchers, the Callahans are feeling pressure from land development interests. The reader will find these oral history quotes to be more than a personal memoir: the experiences of Harry Callahan and his family are reflective of much that has been typical of ranch life on the rim of the Great Basin.

R. T. King
University of Nevada-Reno

December, 1988

Selected quotes that may be possibilities for use in interpreting the Callahan Ranch to the public:

“When I was three years old, we moved up to the upper place on the ranch. That's the first place you come to there when you enter the ranch from Mt. Rose Highway on Callahan Road...that house on the east side of the road—the big green house. The first one you come to on the right side was the milker's house. That was part of the Ghiglieri ranch, and it's right next to the Reynolds place. My grandparents continued to live on the lower ranch until they died, and my aunt and uncles did, too. Matt got the lower place where I am living now, and Annie got the place west of the Ghiglieri ranch. Annie married Jim Murphy, and they built a house there. My dad and mom lived up at the upper place.
My father died in 1940 and my mother in 1952.”

“Our ranch was threatened by fire many times. I remember when Galena Hill east of my ranch had a timber fire on it. It was 1914, and I was a young man of 19 years. My grandmother and her house were in danger, and I had to take her to safety. The fire was
so bad that you couldn't see the house or anything. My cousin and I went in to rescue my grandmother, and we had quite a time with her. She wanted to burn up with the house. She was about around 75 to 80 years old at that time. She was an old Irish lady, and she said she wanted to burn. She said, "I want to go with me house." This was the house I live in now. I asked her, "Don't you know me?" "Damn right I know you," she says. [laughs] "I'm going to stay here anyway." But we got her out into the field, and that smoke was bad. The funny part of that fire was that it left the house and the corrals and the haystacks—went round it and took that whole hill and took everything else. It went right around us! It was just a miracle. Fire does some funny things.”

“I believe in reincarnation. I've been in places—especially when I was riding for the forest service or riding after cattle and things like that—that I know I had never been there in this life, but there was a such a strong feeling that I had been there before or had seen it that I can't help but feel that I was. I remember one time I was looking for a bunch of horses way back of Mt. Rose in what they call Big Meadows. I came up over a hill, and horse tracks were thick up the trail. As I came over this knoll, I saw a little lake there and a log cabin. You know, I had an awful hard time dragging myself away from that. There was a feeling that I had lived there, and that was my home. I had that strong feeling. It was just such a powerful feeling that I can't help but think that I had been there before. I've seen a lot of beautiful places in the hills and things like that that I was really fond of, but there was a different feeling....”

“I've had a lot of happiness as a rancher. I love animals and I love nature. I always have, and I guess I got used to it when I was quite young. I think if I had to do it over again, I'd like to do it the same way. But I'll probably never have that chance again. But the ranching situation is getting hopeless. I really worry about the future of ranching, because there's so many good ranches going under blacktop and houses, and the water is getting scarce. They're importing people from all over the world, and I really worry about the future. I look at some of these kids, and I kind of feel bad about what's going to happen.”

“We used to have a pretty good-sized garden. We had to buy staples like flour and sugar, but the ranch supplied most of our food. In the garden we had tomatoes, radishes, parsnips, peas, beans, sweet corn, potatoes—always potatoes. And we used to have a lot of popcorn. Pop it in the wintertime. Any kind of corn was a deal that you might make a crop and you might not because of frosts. Up here, why, late in the spring and early in the fall we'd get frost more than we do down in the lower valley, so we had a short season. Many an hour I put into the garden along with my mother and sisters.

Mostly the girls were in the house. They'd get out and milk cows sometimes, and sometimes they'd go in the garden. The division of work—like women's work in the house, men's work outside—was not real strict in the family. The girls could go out and do what they pleased. They had a flower garden, and they sometimes worked in the field and garden. They used to go out and milk sometimes, and they helped to separate milk and feed calves. They also did some working of the cattle and riding out on roundup if they wanted to. They weren't confined to the woman's work of the ranch.

For family use, we raised some cattle, and we used to have a few sheep, but not very many. We also ran a dairy. We used to separate the milk and feed the skim milk to the calves and the pigs and haul the cream to the Crescent Creamery in Reno. My grandfather started that dairy. He had mostly dairy cattle, because they used to make butter and haul the butter to Virginia City.

They raised quite a bit of wheat in days gone by in the lower valley. We raised oats and sometimes barley, and potatoes used to be raised extensively. I never seen such potatoes as I've seen on the Peckham ranch. I've seen sacks so close together you couldn't believe they come out of the ground. Of course, my sister Alice married Ed Peckham. I used to go down sometimes and help them pick potatoes. Them potatoes come out of the ground as you couldn't believe—potatoes 8 to 12 inches long.

We had some fruit trees on our ranch. We got a few apple and plum and pear trees that my grandfather planted. And then we had them old-time English poplars, and they grew so tall we had to top them because they were getting so tall that if they were to fall on the house, they probably would've cut the house in two. When we had to top them, why, then they gradually died. They're practically all gone now.

We gathered chokecherries and elderberries, but we were always scared of mushrooms. I remember my dad reading in the paper when I was quite small about an Italian and his whole family that died of eating the mushrooms. They got the wrong kind, and it killed them. So that was something we stayed clear of. We did go out and get pine nuts quite a bit. We'd take them and put them in a dry place until they opened up. Then we'd take the nuts out of them. We'd break the pine cones and take the nuts out of them, and then we'd smoke them, and just eat them like that.

We did some trapping—coyotes, especially, if they got to killing the calves and sheep. Once they start to kill the calves, they keep it up until you catch them—certain coyotes. Then after that, it levels down, and then they start killing the calves again. The worst of it is that sometimes a cow would have a calf close to the fence, and the little calf would get on the other side of the fence, and that way the cow couldn't protect it. Then the

coyotes would kill it.

To store our food, we just had a root cellar, is all. It kept it cold; it had a lot of dirt on top of it. We did have an icebox in the house. You had to get ice from Reno. After the old icehouse down here went out of commission, which was a long time ago, why, then we had to get ice in Reno. This side of Reno, they had a few ice places that you could buy it there.

My mother and grandmother put up food; they did a lot of canning. My sisters helped with that, and I was busy contending with the cattle and the ranch and things like that. We dried some fruits and vegetables, but not a great deal. Mostly it was put up in cans and bottles. Mostly cans. We had a smokehouse on the ranch, and we smoked meats and made sausage.

We didn't never have a very big blacksmith shop on the ranch. It was just a makeshift situation. We didn't do much blacksmithing. We took it out to a blacksmith to have it done. Lincoln Longfield had a blacksmith shop, and then there was blacksmith shops in Reno. The Ginocchios had a shop. They were Italian people, and they were good blacksmiths.

As soon as we kids were able to do anything, we did it. When I was too little to sit down on a milking stool and reach up and milk a cow, I used to have to stand up with a little bucket and hold it in one hand and milk with the other. My dad milked with his thumbs inside his hands. He wanted me to milk the way he did, so that's how I got big thumbs.
It's the way the Swiss dairymen milk cows. I got so I could milk 12 cows, which is about as good as anybody can do.

My dad used to run a butter wagon up to Virginia City and sometimes I would ride up with him. The worst of it was to try to get through with your business and still get home, because every place you went they wanted you to eat, and they would be hurt sometimes if you didn't. He had regular butter, eggs, and milk customers, and if he stopped at a house to talk to the woman and sell her the eggs and her weekly supply of milk or whatever, they'd start right in and get you something to eat, no matter what time of day it was. Of course, they had a habit of sending for a bucket of beer. They'd send one of the kids for a bucket of beer from the brewery. But it was hard to do your business and get home, because they were very hospitable people."

"I think Virginia City was mostly Irish and Cornish people. They came from England and Ireland mostly. My dad used to tell me stories about them great, husky young fellows that come from the old country. They'd be the picture of health, and then they would get what they call "the rock in the chest"—that's miner's consumption. That killed them, and if you went up there to Virginia City today, you can go out to the graveyards and most of them people were in their twenties and thirties."

"When I was growing up, there were Indians living in this area, but not so many young people. The ones that was here were more or less old people. They'd come in sometimes and get willows and make baskets. They had a place down around Washoe City, and I remember them being around Washoe more than any place. They had a camp west of Washoe School when I went to school there in 1908. They also had a camp on the west shore of Washoe Lake. Indians never were very permanent. They'd stay a while one place and then move to a different place. They used to come to the ranch and sell pine nuts.

I remember one time, there was an old Indian—Bill, we called him—and he came along with a big string of squirrels that he'd killed. My grandfather told him, "You ought to be careful with them, because we've been poisoning them. They were ruining the gardens and things." Boy, he got mad! He took them all, and throwed them all! He said,
"You poison squirrel, you poison Indian."

But I don't think there'd been any problem, because most of the squirrels looked healthy enough. They had pouches in their jaws where they carried their food, and as long as they were healthy when he killed them, I don't think that they were dangerous. But he throwed them all away. Everything."

Following Washoe information from UNR, Native Nevada Classroom series:

Washoe Hunting: Though hunting occurred year round, fall was the most active time for hunting because the animals were healthy and well fed after the summer. Before hunting, the men would bathe themselves, and after they had killed an animal, they would thank the Maker and apologize for taking a life. The Washoe hunted many different animals. Deer and rabbit were the most important, but they also hunted antelope, Mountain goat, and smaller animals, such as ground hogs, woodchucks, quail and sagehen. The hunters used bows and arrows, which they made from branches or shoots of trees and flint which they shaped into points.

Hunting required a great knowledge of the animals being hunted, their habits, the noises they made, etc. The Washoe hunters also used traps and clubs, and sometimes held drives for different animals, chasing and herding them toward a net where they could more easily be killed. A leader, called a boss, would be chosen to inform the people when and where to hunt, and to hold a ceremony before drives. Wel-el-'el-ba is the phrase which describes the tendency of rabbits to gather together in one place.

Deer and rabbit provided clothing and food. Rabbit pelts were sewn together to make blankets. Needles and thread were made from deer bones and spinal cords. Much of the meat was dried to provide food for the winter. The Washoe showed respect for the animals they killed by always leaving some to reproduce, and by using all parts of the animal.

Washoe rabbit drive: With the coming of fall, and cooler temperatures, the supply of fish and edible plants began to decline, and the Washoe learned to adapt to their changing environment.

At this time the importance of rabbits increased for the Washoe. The rabbits had grown fat by early fall and now had their thick winter coats. The rabbit skin blankets that would be made would help to keep the Washoe warm through the winter and the rabbit meat would provide energy and sustenance. The rabbits were divided up among the Native people, cleaned and skinned. It might take 100 rabbits to make one blanket. The meat was roasted or boiled for a celebration feast. Any remaining meat was dried and/or pounded into meal for use during winter months.

Both the white-tailed jackrabbit and the cottontail were hunted.

Rabbit hunting required the cooperation and participation of the entire Native people. Everyone, including women, children, and elders participated in the rabbit drives. Rabbits were driven into nets where they were captured and killed with clubs or arrows. The nets were woven of plant fibers, with most families owning one at least one net. Some of the larger communal nets were three feet high and as long as a football field (300 feet).

The rabbit boss helped organize and position people to insure a successful drive. The people would stretch their nets into a wide semicircle as they walked slowly towards another group holding longer nets. The rabbits would then be completely surrounded by the longer nets. Rabbits were so plentiful in the fall, that thousands of them could be captured in the drives.

The world of the hunter/gatherer might first appear to be filled with easy opportunities for resources, but competition within the Native people and between neighboring Native peoples placed limits on the availability of these natural resources. The ancient Washoe also had to compete with the native animals for food. The climate and natural disasters such as fire and avalanches also helped to define the availability of the resources.

Gathering began once the snows had melted and the first plants and early grasses appeared. Summer provided more plants to eat. The Washoe collected a wide variety of plants including, camas, bitterroot, sunflowers, pine nut seeds, choke cherry, gooseberry, currants, berries from the elderberry, miners lettuce, wild rhubarb and wild spinach greens. Indian tea and Indian balsam were gathered as medicines. Oak trees, and their acorns did not grow near the traditional Washoe home region. To harvest acorns, the Washoe would journey great distances over Mountains to collect acorns along the west slopes of the Sierra Nevada Mountains, or they would trade pinenuts and other items for acorns from Native peoples living in the California foothills.

Through the ages, the Washoe have gained an impressive knowledge and understanding of plants. They knew what parts of a plant were edible, and what distinguished edible from poisonous plants. They even had learned where different plants could be found.

Where resources were found:

Riparian = Beehives, Elderberry, Cottonwood, Cattail, and Willow

Transition zones = Currants, Gooseberry and Sunflower

Pinon/Juniper woodland = Pinon and Brodiaea

Forest = White Fir and Deer Brush

Meadow = Wild Onion and Blue Camas

Sandy Desert = Indian Rice Grass and Grasshoppers

California = White Oak (Acorn) - .

NOTE: White Oak (Acorn) is found some distance from the Washoe home range.

Washoe learned about plants from those that came before them. Because the Washoe had no written language, everything had to be passed down orally. The Native people placed great importance on the knowledge and experience of the Tribal Elders. It was through the elders that the younger members of the Native people learned the ways of the Washoe.

Whites Creek and Thomas Creek Trailheads, Sites 7 and 8, pages 80 and 84.

Following detailed research information from Nevada Bureau of Mines and Geology, special publication 19.

This area is in the Lower Transition life zone where annual precipitation is about 8 to 16 inches. Visitors will find sagebrush, bitterbrush, desert peach, Mormon tea (Ephedra sp.), Mountain mahogany, and many wildflowers and grasses growing here. Animal inhabitants include black-billed magpie; piñon, scrub, and Stellar's jays; sage thrasher; various species of sparrow; jackrabbit; Nevada cottontail; pocket mice; kangaroo rats, and voles—and the ubiquitous coyote. As visitors travel into the trees, they note that
all of them are in young, even-aged stands. The mix of age classes that typifies natural forests has been eliminated here by the effects of logging and fire.

Big sagebrush (Artemisia tridentata) Many-branched shrub with fibrous, shredded-looking bark; three-lobed, densely hairy, grayish-green leaves; aromatic; with very small yellowish flowers on dense panicles appear August through October.

Big sagebrush has a broad ecological tolerance and can be found from the floors of valleys up to 10,000 feet in elevation. This is the shrub that gives so much of the West its characteristic gray-green color. Under ideal conditions it can grow to 12 feet tall, yet in arid regions with poor soil it may average less than a foot in height. The shrub produces a huge quantity of tiny seeds that are spread primarily by the wind. It has been estimated that one shrub, about 3 feet in diameter, can have around 450 flowering branches that produce about 350,000 seeds. It is commonly found in association with rabbitbrush, green ephedra, spiny hopsage, and bitterbrush.

Big sagebrush uses several mechanisms to increase its absorption and retention of water. It grows two types of leaves: longer, three-lobed leaves that remain on the plant all year, and smaller, nonlobed leaves that appear in early winter, enabling the plant to take advantage of moister growing conditions. The latter drop off during dry conditions the following summer, and the plant becomes somewhat dormant. Dense hairs on the leaves reflect sunlight and aid in slowing water loss. The plant has a two-part root system. Widely spread, shallow roots take in water from passing storms while a very long tap root extends downward to take advantage of underground reservoirs. Big sagebrush supplies most of the diet of sage grouse and is a primary browse for deer and antelope.

From about this point on, the scenic Byway will be traveling mainly across outcrops of granodiorite—the rock that underlies most of this part of the Carson Range.

Following information from: Nevada State Museum Occasional Paper 4, "The Washo Indians: History, life cycle, religion, technology, economy and modern Life" by
John A. Price, published in 1980.

"Prior to 1858 the Washoe always outnumbered the Whites in their territory, but by 1859 the Whites outnumbered the Washoe by as much as fifteen to one. The proportions shifted sharply with the discovery of the Comstock Lode at Virginia City in 1858 and an estimated 20,000 people came into Washoe territory in the celebrated "rush to Washoe." By 1861 Washoe life had changed so much that the U.S. Indian Agent reported:

"They have learned that the great chief or captain at Washington, through the lesser captain here, must feed them, or help them at least. There is great justice in this request. The streams in which they formerly fished are now all spoiled for that purpose by the operating of the miners and the washing off the ores and metals. They are indeed most all diverted from their original courses, or dammed so frequently that the fish have disappeared from them. Lake Tahoe, lying in the county of the Washoes, and from which they formerly obtained large quantities of the best kind of fish, is now taken possession of by the Whites, and has become a watering place, to which large numbers from this Territory and California resort, and from which this poor Native people are virtually excluded. The hills and plains over which roamed plenty of game are now occupied by the Whites, and the game has fled, like the Indians from their presence." (Ingalls 1913:35).

Following wildlife information from wildlife biologist at the Carson Ranger District.

The sagebrush plant communities east and immediately west of Timberline Road are considered critical winter range for mule deer. Range for mule deer is generally considered "critical" when habitat components meet or exceed the biological requirements necessary to sustain a viable population of mule deer. For example, critical summer habitat is typically at higher elevations where temperatures are cool and adequate stands of brush and trees provide thermal and protective cover for newborn fawns. Critical winter range is typically found at lower elevations where brush stands remain snow free and readily accessible for browsing and cover. Important forage and cover species for mule deer in both summer and winter ranges include bitterbrush, sagebrush, Mountain mahogany, and aspen. Due to the increased level of development in these areas, less forage and cover is now available for wintering deer. The mid elevation plant communities found upslope from Timberline in the Whites and Thomas Creek drainages, provide transitional habitat for deer migrating between critical and summer ranges. Mule deer breeding season begins in the fall and ends in June or July when fawns are born. Mule deer populations along the Carson Front Range have been steadily declining for the last several decades. A 2003/2004 status report from the Nevada Division of Wildlife concluded that the decline in the herd is likely due to considerable loss of critical winter range lost due to wildfires, urban development, and increased recreation use (NDOW 2004). The Forest Service, in cooperation with the Nevada Department of Wildlife, is actively engaged in restoring habitats for mule deer, particularly in areas where wildfire has consumed important winter browse. Restoration projects such as planting brush seed and brush seedlings in burned areas are designed to expedite the regeneration process and provide mule deer with critical forage, especially during the winter months. Another challenge for wildlife agencies is to minimize invasions of invasive plants, in particular cheatgrass, following wildland fires. Cheatgrass outcompetes native vegetation for soil moisture and food and eventually replaces important food and cover resources for mule deer. Cheatgrass also acts as a fine fuel with near continuous cover has greatly shortened fire-free intervals in grass, shrub, and open canopy forest habitat types. With cheatgrass infestation, fire intervals

are now as short as five years in shrubland systems that had 60-110 year fire intervals before conversion to cheatgrass dominance.

Burned Area Emergency rehabilitation efforts (BAER) often include aerial seeding of native grasses and forbs immediately following a fire occurrence to reduce erosion and the potential for noxious weed infestation. These efforts, in addition to the brush planting contribute to minimizing the spread of cheatgrass.

Golden eagles nest in Thomas Creek Canyon. Golden eagles rely on the sagebrush ecosystems due to jack rabbit populations which inhabit those areas. Jackrabbits are an extremely important part of their diet. Many of the urban interface sagebrush stands are being replaced by development and invasive species such as cheatgrass. The golden eagles visitors see in Nevada, particularly in the winter, might be birds that are actually nesting in places like Alaska, and have migrated to this area for wintering

Flammulated owls have been sighted in Thomas Creek Canyon also. Flammulated owls are considered a "Sensitive" species by the U.S. Forest Service. The flammulated owl breeds in southern British Columbia south to southern California, Arizona, New Mexico, and western Texas and migrates south of United States in the winter. 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, 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 Flammulated owls feed almost exclusively on insects but will also occassionally prey on small mammals. The flammulated owl is known to occur in various locations throughout the Carson Ranger District and is known to breed in the Lake Tahoe Basin area.

Northern Goshawks have been sighted in Whites Creek drainage. Goshawks are considered a "Sensitive" species by the U.S. Forest Service. Northern goshawks are year-round residents in Lake Tahoe Basin and are believed to be in the Carson Ranger District as well. Northern goshawks are typically associated with late seral or old growth-like forests, characterized by contiguous stands of large trees and large snags with closed canopies (>40 percent) and relatively open understory. Sticknests are often built in trees on north or northwest facing slopes of less than 30 percent and near water. In Nevada, northern goshawks are distributed in the eastern Sierra Nevada throughout the Mountain ranges of the Great Basin, with over 85% of observed nests in aspen (Populus tremuloides) stands. Within the Sierra Nevada, northern goshawks breed from approximately 2,500 feet in ponderosa pine (Pinus ponderosa) vegetation type through approximately 10,000 feet in the red fir (Abies magnifica) and lodgepole pine (Pinus contorta) vegetation types, and throughout eastside pine (P. jeffreyi /P. ponderosa) forests on the east slope. On the Carson Ranger District, known goshawk nest sites are found in large aspens and conifers within stream corridors with an average canopy cover of 60%. Goshawks begin courtship and nest building during February and March with egg laying usually occuring the beginning of April. Goshawks tend to have a lower disturbance threshold during this period and may readily abandoned nests if disturbed by humans. The nesting cycle is usually complete by mid-August when juveniles are flying and foraging independently. Goshawks feed on a wide variety of prey, including

rabbits and hares, squirrels, grouse, pigeons, small birds (woodpeckers, jays) and small mammals. The major threats to goshawks include the loss of critical nesting and foraging habitat. Human disturbance is another factor that may affect viability if the disturbance occurs during the critical egg-laying period (April-May). Nesting distribution on the Carson 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.

Visitor Education Center, Site 9, page 89:

Following information from UNR, Native Nevada Classroom series.

The Washoe and Their Environment: Past and Present

The land was and is very important to the Washoe. From the land, the Washoe found food to eat, and made shelters and clothing. Before white settlers came to this area, the Washoe moved around a lot during the year. At the start of each new season, they would move to the place where the fish or the nuts or the rabbits were abundant. Lake Tahoe was the center of the Washoe land and the center of the Washoe view of the world.
They went there every spring and summer to fish and gather plants.

They did not "own" the land the way most of us understand it today. But the Washoe and the other Native peoples in the area knew where each Native people hunted, fished, gathered, and lived at different times of the year, and they respected and stayed out of, and sometimes shared each other's land.

Three different groups, or bands, of Washoe made their camps in different areas when they separated after spending the summer at Lake Tahoe. The 'Hung-a-lel-ti are the southern Washoe. The 'Pau-wa-lu are the eastern Washoe, or the people of the valley. The 'Wel-mel-ti are the northern Washoe. The southern Washoe live in the Woodfords area of California. The eastern Washoe live in the Carson Valley. The northern Washoe live north and northeast of Lake Tahoe. Wa-'she-shu is the name for all of the Washoe people.

In the 1840s and 1850s, white settlers arrived in this area to mine for gold and silver. They did not understand that the Washoe lived on all of this land, but did not own it. So the settlers told the Washoe that now they owned the land. The Washoe could no longer hunt, fish, and gather plants and nuts where they used to. They were not allowed to be citizens of the United States until 1924. They could not vote or have rights.

In 1917, the U.S. government bought land in Carson and in Reno-Sparks where the Washoe could live. These are now the Carson Colony and the Reno-Sparks Indian Colony. In Gardnerville, William Dressler and his wife gave forty acres of land to the Washoe in what is now the Dresslerville community. The Washoe Ranch in the Carson Valley was given to the Washoe in 1938-1940. In 1970, the Washoe were granted eighty acres of land in Woodfords, California. In 1980, the Stewart Indian School, to which local and non-local Indian children had been sent since it opened in 1890, was closed. After many years in court, the Washoe Native people gained rights to some of this land in 1990, and the Stewart community is there today.

All of this land was not nearly as much as the Washoe had lived and hunted and gathered on before, but it was at least a place for them to live. All of these pieces of land make up the Washoe Native people reservation.

The gathering season. When fall arrived, the Washoe would leave Da-ow-'ah-ga. Some Washoe, particularly the 'Hung-a-lel-ti, would travel west to the western slopes of the Sierra Nevada to gather acorns (mar-lung). Most would gather in the Pine Nut Hills to the east for a great ceremony or big time, called the goom-sa-'bye. For four to five days, the groups would feast, play games, and give thanks to the Maker. At night, they would dance. On the last day of the goom-sa-'bye, the deu-'bay-oo would give thanks for the bounty Of the land, and pray that the people would have respect for each other and the land. After the ceremony, the people would gather pine nuts (t"ah-gum) by knocking pine cones out of the trees and collecting them in large gathering baskets. This would continue for as long as six weeks.

The preparation of pine nuts for eating is a complicated one. First the cones are roasted until they open. Then the shells of the nuts are cracked by rolling a round stone over them. Once the shells are removed, the nuts are roasted by placing them with hot coals on a winnowing basket, a large, Slightly curved tray, and tossing them up and down so they will not burn. Once the t"ah-gum are roasted, they are ground into flour, which is then used to make pine nut soup. Like pine nuts, acorns are cracked open with a large round stone and separated from their shells. Then the nuts are ground into meal. The meal contains tannic acid, which cannot be eaten. In order to remove the acid, the meal has to be leached by pouring cold and then warmer water over it. Afterwards, it is cooked and made either into acorn mush (like a soup) or into acorn biscuits, by dropping a spoonful into cold water. These products would provide food for the Washoe during the winter.

Gathering throughout the spring, summer, and fall, required a great knowledge of local plants and nuts, their locations, their uses, and their methods of preparation. Some Washoe elders still have much of this knowledge, and are trying to pass it on to their children and grandchildren. Some Washoe still gather every fall to pick and prepare pine nuts, though not for such an extended period of time.

A Washoe winter: After the pine nuts had been gathered, the Washoe extended families would disperse to their winter encampments for the cold winter months. The winter was often a time of hardship, and if spring did not arrive soon enough, or if the hunting and gathering seasons had not been plentiful, the food would run out. Winter was also a good time for storytelling, as the days were shorter and the light did not last as long.

The winter was not a time of active food acquisition. The Washoe used this time to make and repair baskets, tools, and houses. Hunting and fishing was some times possible, and in the higher elevations, such as Woodfords, the men were occasionally able to hunt using snowshoes, or to fish by cutting a hole in the ice. For the most part, however, the Washoe survived on the food they had stored in the summer and fall.

During the warmer months, the houses had been made of lighter materials, such as small trees, which were available in the area. They were called gadu. During the winter months, however, a sturdier structure was required. Poles were placed in a conical shape and bound together at the top. Bark slabs were placed over these poles, and sometimes animal skins or brush were added to provide warmth. These houses were called galls dangal. They were sometimes quite large, holding up to six or seven people, and they contained a fire pit in the middle, for cooking and for heat.

Women worked on baskets during the winter months, taking their time to ensure tight, accurate weaving. The cooking baskets were so tightly woven that they held water. Rocks were heated in the fire and then placed into a basket of water, which then boiled and cooked food. Other kinds of baskets included winnowing trays, used for roasting and winnowing nuts, large gathering baskets, used for collecting plants and pine cones, and baby baskets. The women gathered willow during the year. Three different kinds of plants allowed the basket makers to make designs with three different colors: plain willow for the light brown, redbud for the red, and bracken fern root dyed in mud for the black. Right after the willows were cut and were still moist, Washoe women tore it into strips and removed the core using their teeth and hands. It was then stored until the winter, when it was soaked in water to be made pliable, cut down to a consistent width, and woven into baskets. Weaving was a long, elaborate process, and required much patience and skill. Young Washoe girls began to apprentice early to their female relatives to learn the skill of basket-making, and of using baskets to gather and cook.

After the settlers arrived and the Washoe were no longer using the baskets as much for cooking and gathering, many Washoe women began to make beautifully designed and decorated baskets to sell. This fancy basketry, or deh-'gee-kup, was prevalent for many years after the economy changed. Dat-So-La-Lee (who was known among the Washoe as Dat Sa La Lee, the one with the big hips, and who is discussed in Lesson Twelve) was one of the extremely skilled and prolific Washoe basket makers who gained recognition for her baskets. (Some of her very valuable work can be seen at the Nevada State Museum in Carson City, along with other basketry.) There are some Washoe today who gather willow and make baskets. Grandparents sometimes pass on this skill to young Washoe, but the process requires much time and practice and a lot of patience to learn.

During the winter, the men worked on making and repairing the tools they used during the rest of the year to hunt and fish. They had to make traps, rope, nets of sage fibers, bows, arrows, and more, so that they would be prepared when spring arrived. Young boys would watch and practice these skills from their male relatives.

When the winter finally ended, the Washoe would be ready for another year, and would gather at Da-ow-'ah-ga to celebrate.

The visitor center is the best place to interpret Dr. Church and his snow measurements in depth. The following information may be helpful to the current or future visitor center exhibit planner or designer. (Further research information about Dr. Church can be obtained at this website: http://www.library.unr.edu/specoll/mss/nc96.html)

UNR Library, Special Collections –

A Guide to the Papers of James Edward Church, Collection NC96

James Edward Church, Jr., was born in Holly, Michigan on February 15, 1869 to James Edward and Mary Eisenbrey Church. He received an A.B degree in Classics from the University of Michigan in 1892, and an offer that same year to teach classics at the University of Nevada in Reno. There he taught courses in the appreciation of literature and beauty in art and nature, and Latin and German. He attended the University of Michigan in 1898-99 to work on a graduate degree and attended the University of Munich from 1899-1901, where he was awarded his Ph.D. The Churches returned to Reno in 1901 where he taught classics and art history until his retirement in 1939.

Dr. Church, called "Ward" by his friends and relatives, married his college sweetheart, Florence Humphrey on July 2, 1894. They had two children: Willis Humphrey Church, (d.1969); and Donald E. Church. Willis received a bachelor of arts degree in 1923, bachelor of architecture degree from the University of Pennsylvania in 1927, and a master of architecture in 1933. In 1930 he co-authored the book Masterpieces of Architecture in the United States with Edward Hoak (Scribner). Although a brilliant artist/architect, Willis was an alcoholic who spent many years at the Napa State Hospital in California. Donald was married to Pearl Church and was a transportation expert who held a federal government position in Washington, D.C. He had one son, Russell M. Church, a professor in the Walter S. Hunter Laboratory of Psychology at Brown University.

The Churches, along with many other friends in Reno, held a small parcel of land at Tahoe City where they spent summer vacations. Later, they purchased a lot at Cedar Tract Flat, one mile south of Carnelian Bay on Lake Tahoe's northwest corner. Son Willis designed a small house and large terrace around a pine tree on the lot; it became known at the Tree House and is standing today (1998).

Dr. Church later recounted to one of his students, C.J. Thornton, how he (Church) arrived by train in Reno and started toward the University. While walking down Commercial Row past the many bars, a dead man was thrown out in the street right in front of him. Church said he came "pretty near gettin' back to the depot and gettin' back on the train and leavin' after that." (Thornton, p. 40-41).

Despite this inauspicious beginning, Church grew to love the community of Reno. He was particularly fascinated by the Sierra Nevada Mountains, so utterly different from the terrain of his native Michigan. In 1895 he made the first mid-winter ascent of Mt. Rose on a dare and in 1901 spent Christmas vacation in the open at the crest of the Carson Range of the Sierra Nevada. Florence often accompanied Ward on his Mountain climbs. The Churches relied heavily on the clumsy equipment of the time, although Mrs. Church made their sleeping bag lined with rabbit skins. Their published accounts tell of treks to the summit of

Mt. Shasta in California, exciting rides zipping down a frozen logging flume following the Truckee River, and Ward's winter climb of Mt. Whitney in 1905 with guide Gustaf F. Marsh. Both Florence and Ward were members of the Sierra Club and published their Mountaineering adventures in the Club's Bulletin.

Ward's intellectual fascination with the Mountains and the snow which provided water supplies for the Truckee Meadows lead him to explore the relation between snow and its water content. He and Samuel B. Doten of the Nevada Agricultural Experiment Station established a weather observatory in 1906 on the summit of Mt. Rose to record data on snow deposits, wind velocities, and runoff. Church and his associates built the observatory by hand, carrying all materials to the summit either by horseback or in backpacks.

Church developed the Mt. Rose snow sampler to accurately measure the water content of snow. The sampler consisted of a long hollow metal tube fitted with a serrated collar which removed a core of the snow pack. The core and tube then could be weighed to calculate the water content.

Between 1905-1912 Dr. Church established a system of snow courses around Mt. Rose and Lake Tahoe which allowed samples to be taken regularly at given points. Comparison of the snow and water content figures against the flow of streams in the area allowed him to forecast water availability. The wide-area forecasting of streamflow, known as the percentage or Nevada system became a standard in western North America. In 1935, Congress created the Federal-States Co-Operative Snow Survey based on Church's method; it continues in use today.

Because of his involvement in and expertise with snow surveying, Dr. Church traveled around the world as a consultant. In 1926-1927 and 1927-1928 he accompanied the University of Michigan Greenland Expedition to observe effects of Greenland's weather on the North American Continent. In 1936 he journeyed to Europe to attend a conference on snow and glaciers in Edinburgh. Prior to the meeting he visited many northern countries and then went on to Moscow. Unfortunately he became gravely ill with pneumonia and was hospitalized five weeks. While there he was cared for by Marian Stone and Bob Merriman, University of Nevada students studying in Moscow. He also received excellent care from Russian medical personnel which made a life-long impression on Dr. Church.

Church returned to Russia in 1945 at the invitation of the Soviet Academy of Sciences. There, he conducted a session of re-building Russia's ice-snow science, visited a collective farm, and made many friends.

The Indian government requested Dr. Church's help in 1947 in establishing snow surveys which could provide forecasts to regulate its large reservoirs at the southern base of the Himalaya Mountains. This project was fraught with difficulties: there were few statistics on previous snowfall and streamflows, equipment had to be ordered from out of the country, transportation to the proposed survey sites was difficult, and most important, it required the cooperation of India and Nepal (which possessed most of the stream sources) and Pakistan (which had the streamflow). Church utilized a party of young scientists for his expedition. Called his "Church Boys," many corresponded with Ward for the rest of his life. The physical difficulties were great, especially considering that Dr. Church was 78 years old but

his sense of humor was not impaired. His diary entry of April 20, 1947, relates: "Rode every foot. Paths as steep, bridges as rickety as ever, and doctors and undertakers remote" (Boardman, p. 14). Dr. Church demonstrated that snow surveys were feasible in India and Nepal and succeeded in laying out a complete snow course to provide high level precipitation records to compare with those of lower hill stations.

In 1948 Dr. Church traveled to Argentina to consult with the government's Division of Water Resources. His initial ten day contract was extended to eleven months and his visit encompassed the entire stretch of the Argentine Andes. Snow surveying in the Andes was, like that of India, an international venture with water sources in one country and their outlets in another. Dr. Church, a peace-loving man, noted:

"Thus, barrier ranges and trunk streams merge national interests like children in a family. My wanderings have become adventures in international peace. At the end of the rainbow I sought snow and found friendship." (Boardman, p. 19)

Dr. Church held many important positions related to the science of snow surveying and received many honors.. In 1905 he was appointed meteorologist by the University of Nevada at the Nevada Agricultural Experiment Station. He was director of the Nevada Cooperative Snow Survey from 1918-1926. He was a member of the American Geophysical Union and Chairman of the Research Committee on the Hydrology of Snow. Church was the founder and first president of the International Commission of Snow, organized in 1933. He spoke extensively and was a prolific author of articles recounting his findings (see Special Collections for a list of his articles). He was given an honorary L.L.D. from the University of Nevada in 1937 and in 1958 received the Distinguished Nevadan Award. In 1980, the U.S. Board of Geographic Names, named the north summit of Mt. Rose "Church Peak," in honor of Dr. Church and a marker was erected on the Mt. Rose Highway, commemorating the 75th anniversary of the establishment of the Mt. Rose Weather Observatory.

Dr. Church worked for many years to establish an art museum on the campus of the University. He was opposed in this effort by University Regent, Silas Ross, who was able to prevent the establishment of a campus art gallery. Dr. Church was a principal figure in the subsequent effort to found an art museum off-campus, called the Nevada Art Gallery (Terry, pp. 232-233). When a new fine arts building was constructed on campus, the ashes of Dr. and Mrs. Church were interred in the cornerstone and the building named the Church Fine Arts Building (Ross, p. 544).

Quiet and unassuming, he was the essence of the Renaissance Man, with his interests in science, the classics and art. Dr. Church died in Reno on August 5, 1959 at the age of 90.

Sources:

Boardman, Horace P. "Dr. Church's Foreign Travels." Speech presented to the Western Snow Conference, Reno, Nev., 1948. Dr. Church was to receive a special citation of merit for his contribution to snow surveys and the hydrology of snow at this conference but was unable to be present because of his work in Argentina. Boardman accepted the award on behalf of Dr. Church and recapped Church's travels.
Correspondence, reports, and other items within the J.E. Church collection.
Gorelangton, Tim. "The Snowman: Dr. James Church Jr.," in Washoe County Historical Society Rambler. Vol. 3, no. 3, Fall, 1979, pp. 68-71..
Ross, Silas E. Recollections of Life at Glendale, Nevada, Work at the University of Nevada and Western Funeral Practices. Reno: Oral History Project, University of Nevada System, 1970.
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Thornton, Clarence J. C.J. Thornton, Entrepreneur: Agriculture, Business, Politics. Reno: Oral History Program University of Nevada System, [1983].

The James Edward Church collection is arranged into the following series:

NC96/21 SERIES 21. ARTIFACTS, PRIMARILY SNOW SURVEYING EQUIPMENT.

This series is contained in boxes 70 and 71.

NC96/22 SERIES 22. PHOTOGRAPHS. Ca 1890s-1960.

The J.E. Church manuscript collection contains several hundred photographs which have been transferred to the Special Collections Department photographic archives. These photos document many of Dr. Church's activities. Subjects include:

Portraits of J.E. and Florence Church

Mt. Rose Observatory, including surrounding area, support structures, and equipment

Snow surveying in many locations, including Mt. Rose, Soda Springs, Yuba River, Donner Pass, Marlette Lake

Snow surveying in eastern Nevada and other states

Greenland survey, including landscape views, personnel, equipment, Greenland inhabitants.

Mt. Washington, New Hampshire, weather observatory

Mt. Whitney

Himalaya Mountain survey trip

Art history and Classics courses support materials

Top | Manuscripts | Special Collections

Please direct questions to Jacque Sundstrand at this email: jsund@unr.edu
Updated 21 October 2006

Galena Creek Regional Park South, Site 12, page 100:

Following is detailed text from existing panels:

Black Bears Panel –

What Type of Bears Live in the Galena & Mt. Rose Area?

The Black Bear, whose fur color ranges from shades of blonde to cinnamon, brown or black. Bears are quick and can run up to 30 miles per hour for short distances. Adults weigh around 200 pounds and some males can weigh up to 500 pounds. They have poor eyesight but a very keen sense of smell.

Bears are omnivorous - eating grasses, berries, nuts, insects, small mammals, and dead animals known as "carrion." In fall, Black Bears forage for food up to 20 hours a day to put on fat for the winter. During winter, local bears go in and out of hibernation. The bear controls its body temperature, allowing it to enter into and wake from a deep sleep as needed. This happens because the bear gets hungry and is close to a year-round food supply even during hibernation months.

Are Black Bears a Problem?

Not if we help them to flourish in their natural environment by never feeding them and never leaving food out for them to find. Always dispose of trash in bear-proof containers. If bears don't gain access to food from us, they will forage for themselves and stay free, wild and alive - living in harmony with humans.

NEVER feed the Bears or any wild animal!

FUN FACT:
Black Bear's claws are over an inch long, making them excellent tree climbers.

Photos: black bears.

Animals Panel –

Do Mountain Lions Live Here?

Yes. Also known as Cougar, Panther or Puma, the Mountain Lion is solitary and territorial. Mountain Lions are carnivores - mainly eating deer, rabbit and mice. They mate briefly, not for life, producing two to three kittens in a litter. The kittens are raised in natural shelters like caves or under thick bushes.

The Bobcat

The Bobcat got its name from its short tail which is only 6-7 inches long. The Bobcat is a carnivore, eating rabbits, squirrels and mice. They favor rocky, brushy hillsides and can run up to 30 miles per hour, but prefer to walk.

Listen for the Coyotes at Night

The Coyote is a member of the Canine (dog) family. They hunt mostly at night and eat meat (rabbits are a major food source for the Coyote) and vegetation (omnivore). The Coyote is well known for its “howl” which can be heard throughout the forest at night.

What Do Mule Deer Eat?

Mule Deer eat a variety of vegetation like shrubs and grasses. Mule Deer move between the forest edges, making Galena Creek Regional Park a very important migration area. They prefer arid, open areas and rocky hillsides.

This forest is home to many animals. Please don’t litter. Stay on the trails.

FUN FACT: Mountain Lions have a range of 100 square miles and like to keep to themselves, making it very rare to spot one.

Please don’t litter.
Stay on the trails.

Photos: Mt. Lion, Bobcat, Coyote, Cottontail Rabbit, Mule Dear.

Animals Panel –

Did You Know Bats are NOT Blind?

Bats see in black and white and fly by using echolocation or ”acoustic orientation” which is precise enough to detect a small hair. Bats are nocturnal. Bats are mammals and may look like flying mice but are actually more closely related to primates. There are 22 different kinds of bats in Nevada and they hibernate or migrate to warmer climates
in the winter.

FUN FACT: Small Brown Bats can eat up to 600 mosquitoes in one hour!

Sierra Nevada Red Fox

This Fox is a species found only in the Eastern Sierra, Carson and Galena areas. Foxes eat rodents, rabbits, reptiles and birds. After being hunted almost to extinction, their numbers are starting to grow. Foxes mate for life and their babies, called “kits,” are
born in early spring.

Raccoons

Raccoons are mostly nocturnal and they are omnivores eating, everything from berries to fish. Raccoons nest in trees. When natural food is scarce, they sometimes visit our homes to look for food. It is important not to feed or approach them.

What are Ground Rodents?

These include Golden Mantled Ground and Gray Squirrels, Chickaree, Short Tailed Weasel, Marmots and, of course mice, and rats. Ground rodents eat seeds and help regenerate the forest.

What Else Lives and Works Here?

Snakes such as the Rubber Boa, Bull and Garter Snakes help keep the ecosystem in check by eating ground rodents. Lizards sun themselves on rocks to regulate their temperature.

Frogs and toads eat all types of insects. Insects eat plants and trees which decompose into the soil, contributing to healthy forest growth.

All these species are important to the health of this park.

Photos: Bat, Red Fox, Raccoon, Golden Mantled Squirrel.

Birds Panel –

American Bald eagle:

Our national bird is unique to North America and is making a comeback from being endangered. At one time the word “bald” meant “white,” not hairless. Eagles can fly up to 40 mph and dive at over 100 mph! They eat fish, small animals and carrion. Bald Eagles can sometimes be seen along Mt. Rose Highway and at Lake Tahoe.

What Do Great Horned Owls Eat?

These Owls prey on rabbits, rodents and birds. They don’t digest fur or bone but regurgitate it in the form of pellets which makes it easy to see what they ate for dinner! This is the largest of the common Owl. They are nocturnal and live in the forest and desert.

How Do You Recognize a Stellar’s Jay?

This Jay has a black feather “mohawk” on the top of its head which puffs up and down while it shrieks loudly. The Stellar’s Jay is a crafty thief, and will use other birds’ nests for its own.

The Downy Woodpecker

Male and female Downy Woodpeckers use different food gathering techniques. The male's longer beak hammers holes deep into the wood and the female's shorter bill pries under bark for insects. This allows the woodpeckers to share food resources without competing with each other.

Mountain Chickadee

The Mountain Chickadee makes its nest out of animal fur. The eggs are covered with loose fur while the female is not in the nest. The Chickadee stays in the same area all its life. The call of the Chickadee sounds like the word "cheeseburger."

What Bird Walks Under Water?

The American Dipper can plunge into the water and walk along the bottom of streams. The Dipper walks under water by grasping stones with its elongated toes while searching for aquatic insects.

FUNFACT: The American Dipper is the only songbird who lives on insects in year-round streams.

Photos: Great Horned Owl, Stellar's Jay, Downy Woodpecker , American Bald Eagle, Mt. Chickadee, American Dipper, and American Bald Eagle.

History Panel –

What Happened - 1860s

The Township was founded and developed as a gold mining property called "Galena." It was not economical to mine here because of the lead sulfate mix in the gold. The town grew into a lumbering center, shipping timber to the Comstock silver mines in Virginia City. Galena housed sawmills, stores, schools and saloons. The forest you see here today has very few old growth trees and is second and third generation timber.

1865 - 1867

Two devastating fires wiped out the Galena Township and timber trade. After the second fire, the town was finally abandoned.

1931

This land was acquired for the park from the Holcomb Estate for $10 per acre. A campground was built along with the Stone house warming hut.

1940s

A series of floods destroyed the campground during summer thunderstorms. Historic Comstock timber harvest practices caused deep canyon erosion within the creek beds, including the Galena watershed, setting the stage for future floods.

1948

The fish hatchery was built but only used for four years. A devastating flood caused extensive damage to the water intakes, closing down the hatchery.

1960s

The University of Nevada's Ski Team ran a training/ski jump area. This same ski jump area is used as a snow play area today.

1980s

Camp We Ch Me Lodge was constructed for the Camp Fire Girls.

Present Day Galena Creek Regional Park is a beautiful location to visit. The Park features an historic fish hatchery, Marilyn's Pond, Camp We Ch Me (which means "Where Children Meet"), picnic sites, hiking trails and a snow play area. Park Rangers give interpretive talks about forest conservation, preservation, environmental and historic topics.
FUN FACT: Galena was once called the "Gayest, Rowdiest Little City in Western Nevada!"—The Nevadan, 1964 Vintage photos courtesy of Nevada Historical Society.

Indians Panel –

The Washoe and Paiute were among the region's original inhabitants. The Washoe kept mostly to the Truckee Meadows, Lake Tahoe, and adjacent low-lying areas in the Sierra and Carson Ranges. It is believed the Washoe spent some winters at Lake Tahoe with the abundant food, shelter and campfire fuels available in the basin. Pyramid Lake, north of Reno, was a mecca or meeting place for the Paiute and other southern tribal groups. Historic and prehistoric findings locate the Paiute from Carson Valley to Pyramid Lake. Campsites for both Native peoples still can be found in this area.

What Were Traditional Things Indians Did?

Fall was a time for gathering and hunting to enable the Native peoples to sustain themselves over the winter months. Pine nuts, mule deer, fish and rabbits provided much of their diet. The Indians used snowshoes for travel in heavy snow. Homes and shelters were made mostly of bark and branches. Caves also were used for habitation.
The Indians played games and entertained each other with stories and tribal history.

Where Are They Today?

With the impact of Euro-Americans in the 1800s, the Washoe and the Paiute adapted to changing times and a new economy by weaving and selling beautiful basketry and becoming

ranchers, farmers and guides. The Native peoples continue to live in the region, developing modern businesses, while focusing on traditions and keeping their cultures vibrant and alive.

Images: "Captain Pete" (Washoe Chief) – 1881, Dot So La Lee (and family) - late 1870s, Paiute children - date unknown, Paiute woman with baby in cradle board — late 1800s.

FUN FACT: The name Lake Tahoe comes from the Washoe Indian word da'aw, meaning "lake." So, when we say "Lake Tahoe" in English, we are really saying "Lake Lake!"

Snow Panel –

Snow Surveying Began Here

Innovative snow surveying techniques used around the world began right here at Mt. Rose! In1906, the 10,776- foot Mountain was used as an "outdoor lab" by Dr. James E. Church, Jr. Dr. Church perfected a method of measuring depth and water content of snow by collecting a core sample in a tube and weighing it. This method is now called the Nevada System. As a child, Church got this idea from watching the grocer measure density of butter with a tube.

In 1895, on a dare, the 26 - year - old Church became the first person to climb Mt. Rose in winter. Six years later, he spent his winter holiday camping in the open on top of the Carson Mountain Range. Church was actually a Professor of Arts and Humanities at the University of Nevada, Reno, and had a simple philosophy: "Nature tells you things if you question her and open your eyes." In 1980 the north summit of Mt. Rose was officially named "Church Peak."

How Much Snow?

The snow pack in the Galena and Mt. Rose area can average 400 inches per year (the height of a three story building!) providing the ultimate winter playground.

Winter Activities

Humans have been using skis, snowshoes and sleds as a means of travel and fun for hundreds of years. Today, visitors to the Galena Creek Regional Park enjoy cross country skiing, snow shoeing, hiking and snow play.

FUN FACT: Dr. Church's wife, Florence, sewed rabbit fur into a sleeping bag and often joined her husband on his Mountain adventures.

Images: Slalom racer in contest at Galena Creek Ski Course — 1938, Cross country skiers at Galena Stone house— late 1930s, Dr. James E. Church, Jr. — early 1900s.

Trees and Plants Panel -

What Tree Is Unique to This Area?

The Washoe Pine is a rare Galena area tree that was the last native pine species to be discovered. Found in 1938 on Mt. Rose, this pine was named to honor the Washoe Indians in 1945. Its bark is blackish brown to yellow brown. This tree has egg-shaped cones and looks similar to the Ponderosa Pine.

Meet the Gentle Jeffrey Pine

The Jeffrey's cones are gentle to the touch, unlike the Ponderosa's cones which are prickly. The Jeffrey contains a pure n-heptane resin which is extremely explosive when ignited, however, some can shed their bark during a forest fire increasing their chance of survival. This pine can grow up to 130 feet!

The Amazing Aspen

The largest living organism in the Galena forest is an Aspen "clone." Aspen clones are unusual because they are grouped by a single underground root system. When the wind blows, the leaves have a distinctive trembling appearance, giving the tree its nickname "Quaking Aspen." When traveling on Mt. Rose Highway during the fall season, you will see their leaves turn a stunning bright gold.

Beautiful Wildflowers

There are hundreds of wildflowers that bloom throughout the park at different times of the year. The stunning Indian Paintbrush was once used by Indians to treat arthritis. The striking Scarlet Gilia is a flower favored by the hummingbird for its nectar.

The Wild Rose provides food and cover for birds and helps prevent streamside erosion. Phlox covers the forest floor and is a good food source for moths and larvae.

FUN FACT: If you smell the Jeffrey Pine, there is a faint scent of vanilla in between the bark.

Highest Maintained Year-Round Sierra Pass Panel –

Know Before You Go!

Check road conditions:

AM 530 & AM 1610
(877) NV-ROADS · nevadadot.com
Brush up on how to drive in snow. Do you have…anti-freeze, good lights, battery, brakes, defroster, heater and wiper blades? Carry proper fitting tire chains, blankets, water, working flashlight, gloves, shovel and flares. Drive slow and keep a safe distance from NDOT crews.

Keeping Mt. Rose Highway Open in Winter

This 22-mile stretch of road from US 395 in Reno to State Route 28 in Lake Tahoe is

no picnic for the Nevada Department of Transportation to keep open. Snow can pile up over 30 feet - a difficult job for dedicated road crews. Visibility can be zero during winter storms, but the highest maintained pass in the Sierra rarely closes! Thanks to the expertise of our NDOT professionals.

Safe Highways are not an Accident!

During winter, special avalanche control is used to keep snow slides off the highway. A special mix of sand is used not only to keep the road from being slick, but to help protect the trees and the clarity of Lake Tahoe. Summer is the time for routine maintenance. NDOT is busy year-round taking care this scenic Byway.

FACT: Until 1932, the Mt. Rose Highway was a gravel road. It was completely paved by 1938. Vintage photos courtesy of NDOT.
Photos: Mt. Rose Highway—1940s; Avalanche Control—1940s.
Fire and Flood Panel –

Good or Bad Fire?

Not all fires are bad. A constructive fire helps maintain a healthy forest. The USDA Forest Service uses forest management practices including “prescribed fire” to help reduce the possibility of a catastrophic fire. A catastrophic fire can destroy forests, animal habitats and homes.

Living in the Urban Interface

Do you have defensible space? Many people are choosing to build houses closer to the forest, creating an “urban interface.” Homeowners living near the forest should clear shrubs and trees from around their homes to create “defensible space.“ Fire needs fuel to burn and this simple precaution can help save a home and give firefighters a safe place to work.

Massive Attack

A “massive attack” or a small army of people using fire engines, helicopters and air tankers keeps a wild fire from destroying the forest and structures. Wildfires can start from lightning or humans. Common mistakes made by humans include campfires not properly extinguished and cigarettes thrown out car windows.

How Can You Help?

Get a campfire permit at any Forest Service office.
Have campfires in designated areas and never leave a fire unattended.
Always put a campfire completely out by drowning, stirring and feeling.
Don’t smoke in or near the forest.
Never throw cigarettes out the car window.
Always report a fire by calling 911.

What Causes Flooding?

The Galena Creek area is naturally prone to flooding due to a combination of soil type, heavy snowfall and rain. Floods are either “wet mantle” or “dry mantle.” Wet mantle floods occur when heavy, long rainfall causes snow to melt in the upper elevations, saturating the ground. These floods happen between October and March. Dry mantle floods or “flash floods” occur from late spring through summer and are caused by thunderstorms pouring large amount of rain over tributary basins. Areas that have recently burned are more susceptible to dry mantle floods, especially in the first few weeks after a fire.

FUN FACT: The 1940s flood that destroyed the Galena Creek Campground was a dry mantle flood.

Scenic Byway Map Panel –

One of America’s Most Beautiful Drives!

Nevada’s State Route 431 (Mt. Rose Highway) from South Reno to Lake Tahoe’s north shore offers spectacular views, dramatic terrain, and a variety of habitats. This route winds its way from Reno at 5,400 feet to the summit at 8,740 feet down to lake level at 6,400 feet.

This 25-mile route has some amazing stops including: Galena Creek Regional Park and the Stone house; Whites, Jones and Browns Creek trails; Galena Recreation Complex; Slide Mountain, Mt. Rose Ski Area, The Summit, Tahoe Rim Trail, and Lake Tahoe.

FUN FACT: Mt. Rose Highway is the highest maintained pass in the Sierra Nevada Mountain range with snow levels reaching over 30 feet in winter!

Sky Tavern, Site 14, page 108:

Following information from UNR Oral history program. Complete oral history available from: UNR oral history program website:
http://www.unr.edu/cla/oralhist/ohweb/oralhist.htm.
(775)784-6932 or email - ohp@unr.nevada.edu

Keston Ramsey has lived most of his life in the Reno area. Mr. Ramsey was active in the ski industry from 1945 until approximately 1964; during those years he ran the Sky Tavern Lodge at the Mt. Rose Ski Bowl. He ran the first ski operation built in the Mt. Rose area. Mr. Ramsey not only built the Sky Tavern Lodge, but he remodeled it for use for the Jr. Ski Program when it was sold in 1968.

Edith S. Swift
Interviewer

“Well, we purchased the land on the twenty-fifth of May, 1945 from Robison Neeman. At that time there was only the T-bar, which had been installed in 1944. A small building with a bedroom and a bath was all the facilities that were there at the time. We started building the hotel around the first of September of 1945 and had it open for business by December fifteenth of the same year.”

“As far as previous development, in 1939 and 1940, there was a small rope tow on the hill that was put in by Wayne Poulsen and another fellow—I can't think of his name right now—Ed Health. They started from where the old highway crosses the middle of the hill and went two-thirds of the way toward the top. After Mr. Neeman bought it, he kicked them off, and in 1941 I built a two-section rope tow for him, which he operated just one season and then they used the little building down below to serve sandwiches and hot dogs.”

“When we first started it was $1.50 on the T-bar and $1.00 for the rope tows. There were separate tickets; for $1.50 you could ski the rope tow and the T-bar, and for $1.00 you could ski the rope tows. There was a beginners' rope tow and a fairly steep tow that was for advanced skiers.”

“We had a hotel with twenty rooms. It could take care of fifty-two people, so we had to have a full set of employees for the kitchen, two chefs and a dishwasher, and a relief dishwasher and two waitresses. In the hotel we had two maids and two girls in the office. We had a little coffee shop which took two employees, except on weekends when we had extra people. We had a bar with a regular bartender and two extra bartenders on weekends. We had to haul our own supplies up and take all of our garbage down to Reno. You couldn't get anything delivered in those days.”

"They were all wooden skis at that time. The metal edges were put on with screws. It was quite a few years before they came out with plastic bottoms. You had to use several coats of lacquer and then use your wax on top of that in order to make them hold up so that the lacquer wouldn't wear out."

"The slalom was always held at Sky Tavern; that was the only ski area in the immediate vicinity—Slide Mountain where we had the downhill. During the Winter Carnival, we had the forty-meter ski jump at Sky Tavern, which was usually always a big event and drew tremendous crowds. Some of the major colleges in the western part of the United States competed, all the way from Denver west. Racers from Wyoming, California, Nevada, Oregon, Colorado, Washington and Utah. These were the major colleges that competed."

"The forty-meter jump was built in 1948. At that time we had the old Mt. Rose Highway which went across the lower part of the jump. As soon as we had enough snow, we had to build a wooden framework to carry the transition up across the road to where the jump took off. In the spring, we would have to tear it out, so that they could plow the road; the road at that time was closed to Lake Tahoe after the first storm. The road wasn't reopened until late in the spring. The ski jump was built in the summer of 1948. We had a big D8 Cat up there that did most of the work. We had to do some of the fine grading by hand."

"In 1945 or 1946, the first year of operation, we were about the only area that was open after World War II; there was quite a large group of people from the movie industry who came up and skied. A fellow by the name of Siggie Engel, who was later on the director of the Sun Valley Ski School, brought up these different groups of people, including Gary Cooper and Ingrid Bergman, Jennifer Jones, John Hodiak, and quite a few others too numerous to mention. They all seemed to enjoy the area. It was quite popular at that time. Our hotel was full all the time."

"Then during 1952, when we were snowed in, Joe Dimaggio was renting a little cabin just below Sky Tavern. He came up to Sky Tavern with his ex-wife and son and spent a few days. He was snowed in for quite a while. He finally got out after they got the road back open again. Lowell Thomas was up there, and I skied with him part of a day. He made one of these national radio broadcasts from our area, over the telephone, while he was up there. He and his son and I skied, and they were both very nice."

East Bowl Parking Lot of Mt. Rose Ski Tahoe, Site 18, page 116:

(Following detailed research information from Nevada Bureau of Mines and Geology, special publication 19):

The Virginia Range

The Virginia Range is a northeast-trending Mountain block that lies between the drainages of the Truckee and Carson Rivers; the canyon of the Truckee River forms the northern boundary of the range, and the Carson River skirts its southern side. Mt. Davidson, rising to an elevation of 7,864 feet west of Virginia City, is the highest peak in the range. Referred to as Sun Mountain, Sun Peak, or Sunrise Peak by the early residents of the old mining camp, the Mountain catches the sun's first light, but blocks the western sun as well and insures that evening shadows come early on the Comstock.

The Virginia Range is composed of a thick section of Tertiary volcanic rocks that, if we could see them all neatly stacked up, would form a pile about two miles deep. These volcanic rocks are mainly andesite and rhyolite, but ash-flow tuff, basalt, and mud-flow breccia (lahar) are also present. Shallow lakes formed in time intervals between some of the volcanic flows and, in places, sediments deposited in these lakes can be found interspersed with the volcanic rocks. The Tertiary rocks cover older (Mesozoic) granitic and metamorphic rocks similar to those you can now see in the Carson Range and Sierra Nevada to the west.

The Virginia Range is near the west edge of the Basin and Range province (see discussion on page 5). Rocks forming the Virginia Range have been cut by northeast- and northwest-trending faults, then tilted to form the Mountain block that we see today. Although there is evidence of faults as old as 23 million years in the Reno area, major fault-bounded basins did not begin to form until about 12 million years ago. The present form of the Carson and Virginia Ranges developed over the past 3 million years, with the faulting and associated earthquakes continuing today. The Virginia Range is bounded on the west by a major fault that has dropped down the Truckee Meadows and Reno urban area with respect to the Mountain range (see "Structural Geology of the Truckee Meadows" on page 30). The range is bounded on the north and south by strike-slip faults along the Truckee River and the Carson River.

These Mountains host some of the most mineralized areas in the state, and silver and gold have been mined from several mining districts located along the length of the Virginia Range. The largest and most famous of these is the Comstock. The Comstock district is centered around Virginia City on the eastern slope of the range, but alteration associated with an earlier stage of the Comstock mineralization has bleached and stained rocks to various shades of red as far away as the foot of Geiger Grade on the west flank of the range.

The plant community at home on the rocks of the Virginia Range includes both the Nevada state flower, big sagebrush, and one of Nevada's two state trees, the singleleaf piñon (the other one is bristlecone pine). The low valley floors to the west of the range (Truckee Meadows and Washoe Valley) are dominated by sagebrush. Piñon-juniper woodland, consisting of singleleaf piñon, Utah juniper, and western juniper, populates the

slopes of the range at elevations of 5,000 to 8,000 feet, except where the rocks are bleached and altered. Yellow pine (Jeffrey pine, ponderosa pine, and/or their hybrids, however, seeks out these altered rocks, and isolated stands of the tall pines can be seen within otherwise mostly barren reddish to orange alteration patches in the volcanic rocks.
Another plant that favors the altered rocks, the altered andesite buckwheat (Eriogonum robustum), takes its name from this setting. This rare plant grows in large mounds on the altered ground and has rounded, grayish leaves and large, pale yellow flowers. Beyond the altered areas, big sagebrush forms the understory of the woodland terrain along with other shrubs including Mormon tea (Ephedra spp.), desert peach (Prunus andersonii), bitterbrush (Purshia tridentata), and rabbitbrush (Chrysothamnus nauseosus). Wildflowers blanket the area in April and May, particularly after a wet winter.

Air-temperature (thermal) inversions are common in the Truckee Meadows and in many other valleys in the Great Basin, especially during the winter and early spring, and the piñon-juniper woodland rarely extends into these valleys below the inversion layer. During these thermal inversions, the woodlands are warmer than the slopes below as well as the slopes above them. Air temperatures in the valley bottoms can be as much as 15°F lower than in the woodlands.

Scripps Wildlife Area (Closed February 1 to July 15 for bird nesting season). Within the wildlife area are miles of dirt levee roads and paths, two viewing platforms equipped with scopes, numerous interpretive signs, and extensive lakeshore that make this an easy and delightful stop. The wetlands were created by the Nevada Department of Transportation as mitigation for wetlands lost during the construction of new freeways in the south Truckee Meadows. A fantastic diversity of shore and water birds occupy the new habitat here, making it one of the best and most reliable birding spots in northern Nevada. Pelicans, harriers, egrets, avocets, phalaropes, and coots are among the many regulars you might find here. Native vegetation includes our tallest grass, Great Basin wild rye, rushes, and cattails, all of which were extensively used by Native Americans. Unfortunately, the Eurasian invasive species tall whitetop is also present, and will undoubtedly take over if not effectively controlled. This and similar weeds often pose
the biggest threat to preservation and management of wildlife and other natural areas.

Washoe Valley is a fault-bounded, north-trending structural depression along the east side of the Carson Range. Faults along the western margin of the valley at the base of the Carson Range have been active in recent times and have displaced the Pleistocene landslide deposits at the foot of Slide Mountain. This area of abundant sagebrush and bitterbrush provides winter protein and thermal cover for the Sierra Nevada mule deer herd. Many artifacts have been found around the summit of Washoe Hill suggesting the early hunters concentrated their hunting activities along this natural game route.

Washoe, the Place Name

The name “Washoe,” taken from that of the original inhabitants of this land, the Washoe People, has been given to many geographic features and places in western Nevada. The land along the eastern slope of the Sierra Nevada had become known as “Washoe” early in its settlement history, and the prospecting frenzy caused by the Comstock discovery in 1859 was

first known as “the rush to Washoe.” In 1862 there was even a strong attempt made to call the new territory Washoe, rather than Nevada.

People now known as the Washoe have lived along the eastern slope of the Sierra Nevada for over 9,000 years, historically they spent the spring and summer months hunting and fishing around Lake Tahoe, and the fall and winter months in the lower valleys to the east. The name, meaning “person,” was probably originally spelled “Wassau” (other spellings include Washo, Washoo, Washiu, and Wassou), which was later anglicized to Washoe.

Washoe City was founded in 1861 and became the county seat that same year. It soon became a major lumber- and ore-milling center for the Comstock mines. Like its neighbors of Ophir and Franktown to the south, Washoe City’s decline was triggered by the construction of new mills along the Carson River and the completion of the V&T Railroad from Carson City to Virginia City. The easier and more economical rail route east to the Carson River shifted the Comstock ore and lumber business away from the difficult Ophir Grade route that connected the Washoe Valley towns with Virginia City. By 1880, Washoe City’s population stood at around 200.

Washoe Lake State Park offers nice campgrounds and RV sites, shady picnic areas, restrooms, boat launch, and access to the dunes and other hiking areas. There is a day-use fee collected to enter the park.

Of particular geologic interest here are the extensive sand dunes that lie between camping area and the eastern margin of Washoe Lake. The many trails that lead into the dunes from the campground provide an open invitation to explore.

Washoe Lake is a shallow natural lake and is mostly dependent on snowmelt from the Carson Range. It is a handy gage of wet and dry years—in wet years it threatens the highway, in dry years it sometimes disappears. The lake dried completely during an extreme period of drought in the 1930s, almost completely in 1977 and completely again in the early 1990s. The state park on the east side of the lake is a popular base for wind-surfing activities, camping, and summer campfire programs.

Steamboat Creek flows north out of Little Washoe Lake through a deeply incised channel in Washoe Hill, continues north through Pleasant Valley to Steamboat Hot Springs where it collects outflow from the mineral springs, then winds along the eastern margin of the Truckee Meadows to its eventual merger with the Truckee River.

Washoe Pines ranch is now an institute for environmental education. This was a famous divorce ranch during the days when liberal residence requirements made Nevada a popular place to dissolve marriage (known as "taking the Nevada cure"). The cowboy author Will James wrote his classic "Smoky—the Cow Horse" and other western novels here. In these and other meadows along Franktown Road stand surviving remnants of Comstock-era orchards. The fruit trees were planted along the edges of the valley where air inversions were less likely to cause frost problems.

If one looks below Washoe Valley into Pleasant Valley, the hills along both sides of the road are formed mainly of Miocene andesite mudflow breccias. This area of abundant sagebrush and bitterbrush provides winter protein and thermal cover for the Sierra Nevada mule deer herd. Many artifacts have been found around the summit of Washoe Hill suggesting the early hunters concentrated their hunting activities along this natural game route.

American Marten – information from wildlife biologist, USFS, Carson Ranger District.

Marten are considered a Management Indicator Species on the Carson Ranger District. Marten occur in the northern Sierra Nevada at elevations of 3,400 feet to 10,400 feet, averaging 6,600 feet. Martens have been detected at local ski resorts including Mt. Rose Ski Resort. Preferred habitat for denning and resting is characterized by dense ,multi storied, multi species late seral coniferous forests with a high number of large (> 24 inch dbh) snags and downed logs . These areas are generally in close proximity to both dense riparian corridors (used as travelways), and include an interspersion of small openings with good ground cover. Marten use rest sites daily and therefore availability of these sites in suitable habitat is critical to their well being Marten prey items vary seasonally feeding primarily on ground squirrels and chipmunks during spring through fall and squirrels, mice, and snowshoe hares in the winter. Martens will also occasionally feed on birds, insects (primarily yellow jackets), amphibians, nuts, fruit, and occasionally carrion. Alterations to marten habitat are their greatest threat and may even promote local extinctions. Martens can generally tolerate human disturbance provided the disturbance is temporary and the martens habitat is not impacted.

The following text information is conveyed on the Washoe County existing panels:

WHAT SPECIES OF PLANTS AND ANIMALS ARE UNIQUE AND RARE TO THIS AREA?

This area is home to some of the most rare and beautiful plants and animals in the world. The Washoe Pine is a rare tree that was the last native pine species to be discovered. Rare flowers growing on or near Mt. Rose include the Indian Paintbrush and Tahoe Draba. Conservation efforts by many including Mt. Rose-Ski Tahoe help preserve these special plants. The Sierra Nevada Red Fox is a unique animal found living above 4,000 feet and only in the Sierra Nevada range. The American Bald Eagle's summer habitat encompasses the Mt. Rose and Galena areas where they feast off of small animals,
birds, carrion and fish.

FAMILIAR ANIMALS

Some of the more familiar animals in the surrounding forest include the Coyote, Mule Deer, Bobcat and many species of birds, insects, reptiles and amphibians. The beautiful Black Bear and the majestic Mountain Lion also live here. These amazing mammals like to stay to themselves, making it very rare to see one.

Always stay on the trail to ensure that plant life is not trampled or damaged and NEVER FEED ANY WILD ANIMAL! It is important that we help animals stay living in harmony with humans.

Photos: American Bald Eagle Red Fox Indian Paintbrush Rare Washoe Pine
Black Bear

Mt. Rose- Ski Tahoe panel:

HOW DOES MT. ROSE-SKI TAHOE GIVE BACK?

Mt. Rose-Ski Tahoe has a long history of providing a quality outdoor recreation experience, while complementing the natural beauty that draws us here. This includes natural resource protection efforts (best management practices) that conserve and protect the natural resources found on Slide Mountain. These efforts will ensure continued enjoyment of this special place for generations to come.

Current practices to conserve the natural resources of the area include: protection of sensitive species and habitat, erosion control measures, water quality improvement and native vegetation restoration.

Leave No Trace

You can reduce your impact when enjoying this area by: Planning Ahead and Being Prepared; Traveling and Camping Only in Designated Areas; Disposing of Waste Properly; Leaving What You Find; Minimizing Campfire Impacts; Respecting Wildlife;
Being Considerate of Other Visitors.

Mt. Rose Ski Tahoe Lodge, Site 20, page 123:

Following detailed research storyline information from Mt. Rose Ski Area.

Since 1930, long before the present Mt. Rose Highway was built, or even chair lifts were constructed, Reno and Washoe County locals have been skiing in the area currently known as Mt. Rose - Ski Tahoe. Shortly after World War II, a lodge called Sky Tavern was built in the area where a few surface lifts had been operating since the late 30's. Sky Tavern was, and continues to be located on the Mt. Rose Highway (SR 431), 11 miles west of US 395, just south of Reno. Eventually this historic ski lodge would be sold to the City of Reno where it still operates the city's Junior Ski Program.

From Sky Tavern, devoted skiers hiked up to the 9,700' peak of Slide Mountain and skied in the location of the present Mt. Rose - Ski Tahoe. By widening the existing logging trails for better ski terrain, these former powder hounds were cutting some of the first ski trails in the Sierra Nevada. In 1950, the old Mt. Rose Hwy was merely a summer road connecting Reno with beautiful Lake Tahoe. As the years marched on, the old SR431 continued to be improved allowing winter travel to higher elevations; therefore more ski terrain became easily accessible. The original Reno Ski Bowl was constructed on the east slope of Slide Mountain (currently the East Bowl of Mt. Rose), and at one point was connected to the Sky Tavern area by the old Ringer Chair. This lift spanned Bum's Gulch, taking it to the base of the Reno Ski Bowl. Remnants of this lift can still be seen on the highway about 2 miles below the Mt. Rose main lodge where a lone, rusty lift tower remains standing. When Squaw Valley hosted the 1960 Winter Olympics, the Reno Ski Bowl was actually chosen as an alternate site for skiing events if Squaw did not have adequate snow coverage.

The 60's saw large changes on the slopes of Slide Mountain. The Reno Ski Bowl evolved into the Slide Mountain Ski Area and in 1964, the north face of Slide Mountain became Mt. Rose Ski Area. The Mt. Rose Development Company was formed to direct the future of the ski resort. Over the years, Slide and Rose operated independently, each expanding in their own ways with more lifts and lodge improvements. The Mt. Rose lodge rented 42 hotel rooms until they discontinued lodging guests in 1984. In 1980, 180 acres of new trails were cut at Mt. Rose between the Sunset ski trail and the Mt. Rose Hwy. Also, the Lakeview chair was built, offering spectacular views of Lake Tahoe and increasing uphill capacity. The 1984-85 season saw the 20th anniversary of operation and two new chair lifts. The existing Northwest Passage double chair lift was replaced with a new triple chair, and the Galena triple chair was installed providing increased terrain for beginner and novice skiers. In 1985, Around the World was cut adding a new 2.5-mile long ski run for long relaxing cruising.

The Iron Curtain between Slide and Rose finally came down in 1987 when Mt. Rose acquired the Slide Mountain Ski Area terrain under a lease agreement with the U.S. Forest Service. Combining the two ski areas increased the overall terrain of Mt. Rose to 900+ acres, now making Rose a significant player in the Lake Tahoe Basin.

As Rose moved into the 90's, improvements continued to take place on the hill with the upgrading of the Zephyr chair to a quad lift in 1989, and later the Ponderosa lift also evolved from a double to quad chair in 1993. Both new lifts vastly increased uphill capacity and aided in boosting the overall image of the resort. The expansion of U.S. 395 to SR 431 created a six

lane freeway now extending to the Mt. Rose highway providing high speed, non stop access for the 22 mile trip from Reno. 1994-95 shined as the 30th anniversary for Mt. Rose and this landmark year produced some of the most significant facility improvements in the resorts history including a 2.5 million dollar remodel of the main lodge, which included a monster outdoor BBQ deck and a 300% expansion of the indoor dining area. Over 550" of snow blanketed Mt. Rose that season putting an alarming end to the eight-year draught and rewriting the record book with the most snow in history for Mt. Rose. Top to bottom snowmaking was also introduced to the resort in the late 90's giving the Mountain the insurance policy it needed to have consistent early season openings.

Mt. Rose screamed into the 21st century with its first high speed lift when the Northwest triple became the Norwest Magnum 6. Following in its wake was the upgrade of the Zephyr quad lift to the Blazing Zephyr 6 high speed chair in 2004 giving Mt. Rose dual high speed, base-to-summit rides to the top. But big fast chairs were the only the tip of the proverbial iceberg. Separating the east and north slopes of Slide Mountain lives the extreme terrain known as The Chutes. After 10 years of groundwork, Mt. Rose officially adopted these 200 acres into its trail system including the addition of the Chuter lift providing an exit back to the Slide lodge. There was a time when skiers were allowed in the Chutes area at their own risk. Shuttle busses actually ran from the Slide Mountain Junction to the base of the Reno Ski Bowl from the late 1950's to the mid 60's transporting everyone who ventured over to the backside. The mid 1960's saw the
closure of this area until it’s official opening in 2004.

Following detailed information is from Nevada Bureau of Mines and Geology, special publication 19.

Mt. Rose (the Mountain) is the high peak (10,776 feet) to the right. It is within the 29,000 acre Mt. Rose Wilderness Area which extends from the crest of the range almost to the Reno city limits. There are about 20 miles of hiking trails within this wilderness area and outdoor enthusiasts from adjacent Reno give the trails heavy use.

The Carson Range dominates the skyline to the west. Slide Mountain (elev. 9,698 feet), marked by ski runs radiating down from its top, is on the far left. Mt. Rose (elev. 10,776 feet), distinguished by its saddle-shaped peak, is to the right. Peavine Peak
(elev. 8,266 feet) is on the far right, separated from the Carson Range and north
of the Truckee canyon.

The broad bowl on the side of Mt. Rose and its high U-shaped valleys were scoured out by glaciers during Pleistocene time (the last few hundred thousand years). Note the huge, sloping, alluvial fan extending eastward from the Carson Range into the valley.
The sediments that make up this fan were deposited by streams draining glaciers on Mt. Rose. The slope has been steepened by the continued downward tilting of the eastern margin of the Truckee Meadows.

Slide Mountain and the core of Mt. Rose are composed mainly of granitic rock, but the lower slopes of Mt. Rose, and most of the long, lower ridge of the Carson Range to the north, are draped with Tertiary volcanic rocks. The top of Mt. Rose is also capped with a layer of

Tertiary volcanic rocks. These rocks weather to dark gray and brown, causing the peak to appear darker than other nearby peaks in the Carson Range.

Slide Mountain is on the far left, and is marked by numerous ski runs on its eastern face (this is the Mt. Rose ski area Mountain). Mt. Rose is the saddle-shaped peak just to the north (right) of Slide Mountain. The Mt. Rose glacial outwash fan wraps around the north side of the Steamboat Hills and joins with other alluvial fans issuing from the east side of the Carson Range to form the broad alluvial fan complex north of the Mt. Rose Highway and west of U.S. Highway 395.

Slide Mountain is composed mainly of granodiorite. Washoe Valley has dropped down relative to the Carson Range by faults that bound the range on its eastern side. Just east of Slide Mountain a north-northeast-trending group of faults cuts transversely across the range, roughly paralleling the steep southeastern face of the Mountain. The fractured, unstable rock along this fault zone sets the stage for landslides that can be triggered by unseasonably heavy precipitation or earthquakes. Two prime ingredients for a slide on these unstable slopes are water, which acts as a lubricant, and gravity, which pulls the rock downslope. The huge scar visible on the face of the Mountain is evidence these processes have been at work, and marks the source of the landslide debris that now extends far into Washoe Valley. The jumbled rock mass has flowed down Ophir Creek from an elevation of 9,400 feet on the Mountain face to 5,000 feet on the valley floor. Geologists studying the degree of weathering on this boulder-strewn landscape at the mouth of Ophir Creek believe that Slide Mountain has shed rock slides into the valley
at least nine times in the past 50,000 years.

Members of the Washoe and Paiute Native peoples of the area had a name for the Mountain which translated as “Mountain which fell in upon itself.” Their verbal records from the early nineteenth century tell of at least one slide that may have been the result of an earthquake.

A slide reported by white settlers in November or early December of 1852 may have been caused by an earthquake, but fierce storms and blizzards were also plaguing the region at the time. In 1878, the Carson Appeal newspaper reported another slide that occurred on April 10, 1862. A band of Mormon immigrants was said to have been camped at the foot of the Mountain and was buried by the slide, but this could not be substantiated.

On July 8, 1890 Price Reservoir, now called Upper Price Lake, burst its dam and sent a 30-foot wall of water down Ophir Creek, flooding William Price's house and about 200 feet of the V&T railroad track, located where U.S. 395 now runs. Eyewitness accounts suggest that a slide from the Mountain probably triggered this event.

The most recent event staged by Slide Mountain came on May 30, 1983. At 11:53 AM on that day, a mass of rock, soil, and vegetation suddenly broke free and slid down the steep southeast-facing slope of the Mountain. The area of mass movement involved 40 to 50 acres and the movement was very swift. Much of the moving mass slid into the north half of Upper Price Lake, a small lake covering 4 to 5 acres on Ophir Creek. The sudden movement of debris into the lake created a surge of water that rapidly flooded into Lower Price Lake, and the cumulative contents of both lakes, about 20 to 30 acre-feet of muddy water, pushed down the steep (roughly 25 percent gradient) canyon of Ophir Creek below the lakes.

The flood wave gouged debris from the canyon bottom and sides and incorporated this debris, mixed with trees and vegetation that lined the canyon floor, into an increasingly abrasive mixture that continued to gain speed and volume as it raced downstream, bulldozing the channel before it. After traveling about 2.5 miles at an average velocity of 18 to 20 miles per hour, this high-momentum debris wave, with a leading edge about 30 feet in height, reached the canyon mouth. Freed from constraint when the channel abruptly widened and flattened, the boulder-laden flood wave spread across the existing alluvial fan, further expanding the fan into the valley by depositing large quantities of new debris. The rock flood destroyed two homes in its path, overtook four of five people racing to escape its wrath, killed one, and injured the other three, then continued across SR 429 and downstream across the fan until its momentum was lost. The maximum depth of fill across this road was about 9 feet. About 0.1 mile below the road, the moving mass destroyed one home and seriously damaged two others. Large boulder movement ceased just beyond this line of homes, but fine-grained, viscous run-out moved at least 0.2 mile farther to the edge of and onto U.S. 395, temporarily closing the southbound lanes.
Fine-grained run-out continued to flow along the west edge of the freeway for at least an hour. The mass movement of material from the slopes of Slide Mountain that began this disaster was probably triggered by the simple oversaturation with water of the fractures and joints of the granodiorite bedrock. An abnormally high snowpack had been melting rapidly during several preceding days of above-normal air temperature (Glancy and others, 1984).

Pullout with views, Site 23, page 132:

Following is more detailed storyline information from the Nevada Bureau of Mines and Geology, special publication 19.

Mountain Lion

Though usually less, Mountain lions (Felis concolor) can reach a weight of 225 pounds. Their size, tawny coat, and long tail distinguish them from the more commonly seen bobcat.

Although the kittens are spotted like bobcats, they have a long tail as well. They are widely scattered across the Mountainous American west from northern Canada to the tip of South America. Formerly distributed across the U.S., they are now only in the west, except for a Florida population. They live in a wide variety of forest, desert, Mountain, and jungle habitats but are rarely seen. They are ambush hunters, often dropping on prey from a tree or rock. In the Reno area they live primarily on deer, but also eat rabbits, rodents, bighorn sheep, and occasionally domestic pets and livestock. They do not eat carrion, and may cover or cache a kill before returning to finish it. They have very large ranges, often around 100 square miles for males, but perhaps up to 800 square miles in some cases! As man has invaded their wildlands, attacks on humans, once very rare, have increased in California. During harsh winters, they are sometimes discovered in Reno suburbs! The cubs, usually twins, are born year round. They are also known regionally as pumas, catamount, panthers, painters, cougars, and just plain lions.

The following Washoe and Paiute information is from the Carson Ranger District archaeologist.

The Washoe and the Paiute tended to have large winter villages down by Steamboat Springs and then they would move up in elevation gathering different types of plants and using different resources. As they moved up into Tahoe Meadows, that was a big summer camp area where they gathered different kinds of plants. As we go up higher in elevation there are different land uses. They camped all along the way, all the way up. Where someone would want to put a house today, a native camp site was there in the past.
They moved up and down depending on the time of year and what they were gathering. Specific things for gathering are based on micro-climates. There was traditional gathering areas along the Byway, or off the by-way, for bracken fern. The roots of
the bracken fern are the black parts of traditional basketry.

Some plants were eaten, some were medicinal, some were for basketry, some were for bows, the arrow shaft, and sometimes multiple uses. Some plants are used for both food and building bows.

Mt. Rose Summit Welcome Plaza, Site 25, page 139:

Detailed text information conveyed in the existing panels includes the following:

History - Who Came First? panel

Washoe Native people:

Imagine having this pristine wonderland all to yourself each summer. That's exactly what the Native Americans did before settlers invaded the area. The Washoe (Washo) Indian Native people of Nevada/California lived off these lands for 10,000 years before the westward expansion of the United States.* Each spring and summer they camped in the cool climate of the Tahoe Basin while hunting, fishing and trapping. Each fall they returned to the lower valley elevations to gather pinyon nuts in the Pine Nut Hills and spend winters in the milder climate of the Washoe, Eagle, and Carson Valleys. Their ancestral homelands ranged from Honey Lake, south of Susanville, to Antelope Valley, both in California.

* Lt. John C. Fremont 'was the first settler to arrive at Lake Tahoe in February of 1844 and put it on the map for the first time.

Where's all the Big Trees?

In 1859, the Comstock Lode, named after miner Henry 'Pancake' Comstock, became one of the largest strikes in America. The resulting boomtown on the slopes of Mt. Davidson was named 'Old Virginny Town, after miner James Finny, nicknamed 'Old Virginny.' Virginia City, as it later became, had a population of nearly 30,000 residents at its peak and was the richest and most important city between Denver and San Francisco.

But there was a problem. The boomtown needed lumber to build the city and timbers to shore up the mines, dug deep into the earth. They found it on the Mountains surrounding Lake Tahoe. Logging of the huge Jeffery and Ponderosa pine trees on the Sierra became big business with millions of board feet of lumber being cut at sawmills located at Spooner Meadows, and the present locations of Glenbrook and Incline Village.

By the early 1880s when the mines were on the decline, loggers had cut all the large trees in the area. Today's forests in the basin are mostly second and third growth trees. The U.S. Forest Service looks to maintain and improve the forest by thinning and prescribed fire, working towards a healthy forest.

How much snow?

Dr. James E. Church (a UNR professor of classics and art history) snow-shoed to the top of Mt. Rose in 1896 (on a dare) becoming the first white man to summit the peak during the winter snows. A decade later Church devised his method of measuring the water content of the snow at his high-altitude meteorological observatory. By thrusting a long metal tube down through the snow, measuring its depth and then weighing the tube, Church learned he could determine the snow's water content. By using his 'Mt. Rose snow sampler,' to take numerous snow samples from around the lake, he could, for example, predict how much the

lake's water level would rise during the spring runoff. His calculations were key in resolving arguments over water use between land owners and downstream users.

His method of snow measurement, known as the 'Nevada System,' became standard in western North America and is continued to be used worldwide. Lake Tahoe winters average 400" of snow annually but produced seasonal snow totals in excess of 800" during heavy years.

Mt. Rose Trailhead panel

Hike Statistics:
Time: Plan for at least a 5 hr hike to the summit
Elevation Gain —1965'
Start 8811'
Summit 10,776'
Length: 4.8 miles each way
Difficulty: Strenuous

Access: Follow a dirt road for three miles through a lodgepole cloaked forest interspersed with mule ears and sagebrush plant communities. In the spring, a lush meadow at the halfway point is filled with wildflowers such as lupine, paintbrush, and larkspur. The last two miles follow slippery switchbacks to the ridge line.

Critters & Trees

On this hike, you are most likely to see a variety of native plants and animals. Typical trees include the Jeffrey Pine, and the occasional Washoe & Ponderosa Pines. Wildlife most common on the trail includes marmots, golden mantle & grey squirrels, raccoons, and the Stellar's Jay. Protect wildlife by not leaving food or garbage behind

Why Rose?

The naming of Mt. Rose is not exactly certain. It is debated that the peak was named either after an early settler, Jacob Rose who built a lumber mill near Franktown, or Rose Hickman, a friend of a Washoe County newspaper editor.

The views from the top are astounding. To the north are the Boca, stampede, and Prosser reservoirs, to the east Reno, to the south Lake Tahoe and the Carson Range, and to the west Houghton and Relay Peaks. Once you make it to the summit, sign the book marking your official summiting of Mt. Rose. On this hike you are most likely to see the following types of trees & animals on the trail.

The Reward

The views from the op are astounding. To the north are the Boca, Stampede, and Prosser reservoirs; to the east Reno; to the south Lake Tahoe and the Carson Range; and to the west, Houghton & Relay Peaks. Once you make…

Map of Mt. Rose Wilderness and photos of: Jeffrey Pine, Marmot, Ground Squirrel, Blue Jay, and hiker at Mt. Rose summit.

Lake Tahoe Skiing Panel

When did it all start?

Skiing in the Lake Tahoe Area originated as a form of individual transportation in logging communities during the long winters. The recreational component evolved from weekend races and in the 1930s, Sugar Bowl Ski Resort on Donner Summit was the first established area in the region. With the railroad passing through the base of the resort, guests from Sacramento and San Francisco had convenient access to the Mountains and winter vacations.

From this point, a multitude of ski resorts evolved in the area. Below is the Reno Ski bowl which opened in 1952 on the summit of Slide Mountain (now Mt. Rose – Ski Tahoe.) For more detailed history, visit The Western Ski Sport Museum in Soda Springs, Ca.

What put Lake Tahoe Skiing on the Map?

In 1960, Squaw Valley hosted the VIII Winter Olympic Games bringing international attention to Lake Tahoe skiing.

Talk about Variety? (map).

The Lake Tahoe Area is home to the largest concentration of ski areas in North America with well over a dozen downhill and cross-country resorts, many of which are partially or totally located on national forest land.

What Resort is across the road?

Mt. Rose – Ski Tahoe covers 1200 acres on neighboring Slide Mountain. With its roots dating back to the pre World War II era, Mt. Rose evolved out of the Reno Ski Bowl, which became Slide Mountain Ski Area in the early 1960's, and in 1987 Mt. Rose Ski Resort merged with Slide Mountain Ski Area. 2004-05 marked an historic year at Mt. Rose – Ski Tahoe with the opening of lift-accessed extreme terrain commonly referred to as "The Chutes." Boasting almost 200 skiable acres and plunging 1,500 vertical feet, this legendary north-facing bowl brought double-black diamond terrain to Mt. Rose – Ski Tahoe as well as some of the longest sustained vertical in North America.

The Sierra's Highest Year-round Pass panel

When did the Road Open?

Back in 1913 the notion of a route from Reno to Incline Village began to take shape with a completed hard surfaced road in place by 1938. Before that, it was easier and faster to take the train to Truckee, then another to Incline if you wanted to travel from Reno. The Nevada

Department of Transportation (NDOT) was formed in 1917 as the Nevada Highway Department and by 1932 the entire highway—known as highway 17—was gravel and under construction. Today's modern, hard-surfaced Nevada State Route 431 was completed in 1938.

In 1953 the "Highway to the Sky" was completed connecting the Reno Ski Bowl (located on the East Slope of Slide Mountain) to SR 431 and 431 maintained year round status in 19_ _. At 8,911' the Mt. Rose Hwy (SR 431) is the Highest Year Round Pass in the Sierra

Avalanche Control

At 8,911' the Mt. Rose Hwy (SR 431) is the Highest Year Round Pass in the Sierra. The Nevada Department of Transportation (NDOT) works tirelessly to keep the Mt. Rose summit pass open year-round. This is no easy task in the winter due to its high elevation, sever winter blizzards, and high traffic volume. On an average day, over 6500 vehicles travel over the Mt. Rose hwy (State Route 431 corridor). Highway maintenance over this summit is especially difficult during winter, when over 400 inches of snow falls here. Huge snow blowers keep the roadway clear. NDOT uses an environmentally friendly sand & salt mix to help improve vehicle traction.

Avalanche control work is performed along prone sections of the Mt. Rose highway through both traditional as well as high tech methods. Since the early 1980's ski patrol members from Mt. Rose-Ski Tahoe have assisted NDOT w/ avalanche control work both in the Chutes area of the ski resort as well as the "Barney's" slope located halfway between Mt. Rose and Sky Tavern Ski Areas.

In 1992 NDOT installed the unique Gaz.ex avalanche control system which allows remote control work whenever there's the threat of snow slides. Gaz.ex consists of a fixed installation one-meter diameter tube in which oxygen and propane are ignited using a remote laptop computer and the the explosion sends shock waves through the air and ground, causing the unstable snow to slide down onto the highway. Traffic is held a safe distance away while plows clear the roadway.

Road conditions and road construction updates can easily be obtained at: www.nevadadot.com or by calling 1-877-NV ROADS.

Beautiful Lake Tahoe panel

About Lake Tahoe

Perched atop the Sierra Nevada, straddling the California/Nevada border, Lake Tahoe is a truly spectacular body of water. Its great depth and clarity allow it to fully reflect the color of the sky above and have given us the "The Blue World". Throughout this site, you'll discover how the combination of Mountains, lake, recreation opportunities and world class accommodations, dining, gaming and entertainment can create an amazing vacation experience, but in this space, we'll just share some of the more remarkable facts and figures.

- Lake Tahoe is 22 miles long and 12 miles wide, covering an area of 193 square miles. The shoreline is 72 miles around at 6,225' elevation.
- Lake Tahoe's average depth is 985 feet. Its deepest spot is 1,645 feet.
- Given that size and depth, Lake Tahoe contains an almost incomprehensible amount. of water. How much? Here's some answers.
    - 39 trillion gallons. (That would be 39,000,000,000,000.)
    - More water than the 10 largest man made reservoirs in the United States combined.
    - Enough to cover the state of California to a depth of 14 inches.
    - Enough to cover the state of Texas to a depth of 8 ½ inches.
    - Enough to give every man, woman and child in the United States 50 gallons a day, 365 days a year, every day for about 7 years.
    - Enough to fill a canal the size of the Panama Canal and have it circle the whole earth at the equator, and then have enough to fill another canal between San Francisco and New York.
    - Enough water evaporates off the surface of Lake Tahoe each day to supply the daily water needs of a city of 3 ½ million people.
    - Oh, all that water is about 99.5% pure. A white dinner plate lowered into the water will still be visible at a depth of about 70 feet.
    - Lake Tahoe is the second largest alpine (higher than a mile in elevation) lake in the world and the third deepest in North America.

Mt. Rose Campground, Site: 26, page 146:

Each bird makes perhaps seven thousand or more caches, so must retain at least two geographic references per cache in order to find them once snow has covered the landmarks. Caches which are extra, forgotten, or whose owner has died, germinate and form clusters of seedlings. In many eastern Sierra forests, these survive to old age. What appears to be a tree with three or four trunks is usually such a seed cache—with every tree planted at the same moment by a nutcracker hundreds of years before! The limber pine throughout western Mountains is totally dependent on these birds. Although these trees are very long lived (up to 2,000 years), they have no other dispersal or planting agent. The birds perform the same function for whitebark, Jeffrey, ponderosa, piñon and bristlecone pines. In fact, the largest known bristlecone, the famous Patriarch tree, is actually the result of a nutcracker cache of seven to nine seeds! Because the birds must follow the seed crop, they range widely and may move seeds among Mountain ranges. (From Nevada Bureau of Mines and Geology, special publication 19.)

Tahoe Meadows, Tahoe Rim Trail, Site #27, page 150:

Following information from UNR, Native Nevada Classroom series.

Springtime – fishing at Lake Tahoe. After a hard winter, the Washoe people eagerly welcomed spring. Often their storage of nuts, dried meat, and dried plants had neared or reached depletion by the time the waters and the ground thawed and the new plants began to grow. Women immediately set about gathering the fresh plants, while the younger people set off toward Lake Tahoe to set up camp. Lake Tahoe, which got its - name when the white settlers mispronounced 'Da-ow, the Washoe name for the lake, was the center of the Washoe worldview. Every part of the landscape at Lake Tahoe is explained and described through Washoe legends. Its beauty and its abundance of fish inspired awe, and its shore, Da-ow-'ah-ga, was the place where all the various groups and families of Washoe would gather throughout the spring and summer. The 'Hung-a-lel-ti would camp at the south shore of the lake, the 'Pau-wa-lu on the east, and the 'Wel-mel-ti at the north.

When everyone had arrived, a large ceremony was held to bless the lake and themselves, and to acknowledge the sacred place to which they had come. Then the Washoe began to gather the plants around lake, and to fish in the lake and neighboring streams. They used many different methods to catch fish, including hooks, spears, baskets to trap the fish, nets, dams, fish blinds, and even their bare hands. The fish and the plants were eaten fresh or dried and saved for later in the year.

A nine-year-old Washoe might go to the lake early with the other young people, or stay behind with the elders until the snow was gone. Girls would follow the women in their gathering activities, learning how to distinguish different plants, their medicinal and food uses, and how to prepare them. Boys would follow men in fishing, learning the various techniques and how to make the nets, spears, hooks, etc. They might begin to learn from the male elders how to hunt small animals with bows and arrows and clubs. Both boys and girls would participate in the games, dancing and stories which characterized spring at Da-ow-'ah-

ga. They would have a chance to meet and socialize with children and adults from other Washoe bands and from other Native peoples.

Lake Tahoe wayside, Site #32, page 166:

(Detailed storyline research information on following pages is from Nevada Bureau of Mines and Geology, special publication 19):

Lake Tahoe Setting and History

Lake Tahoe is the largest alpine lake on the North American continent, the second deepest (Crater Lake, Oregon is the deepest), and is the highest lake of its size in the United States. The thin, clear Mountain air allows the lake's crystalline water to reflect the sky above resulting in its sparkling blue color. Occupying a valley between the main crest of the Sierra Nevada and the Carson Range, Lake Tahoe is about 22 miles long and 12 miles wide. The average depth of the water is 989 feet (the greatest measured depth is 1,645 feet). The natural rim of the lake is 6,223 feet above sea level and the bottom of the lake is 95 feet below the elevation of Carson City. Only about one-third of the lake is in Nevada.

Sixty-three streams flow into Lake Tahoe, the main feeder being the Upper Truckee River which flows into the south end of the lake. Only one stream, the main Truckee River, flows out of the lake. The Truckee exits at the northwest corner of the lake, flows through Reno and into Pyramid Lake. Tahoe's water never reaches the ocean, because Pyramid is a landlocked desert lake within the Great Basin.

The lake level is controlled by a dam at the outlet, and the maximum elevation of the water level is 6,229.1 feet (a court-mandated level). In times of drought, however, the lake level can fall below the level of the outlet and the Truckee River below the dam then ceases to flow.

The Lake Tahoe area was part of the summer range of the Washoe Indians. They left the deserts to the east, seeking the cooler Mountain temperatures in the summer months, and lived in temporary villages at several sites around the lake shore.

The first white men to observe Lake Tahoe were John C. Frémont and his topographer, Charles Preuss, who, on February 14, 1844, spotted the lake while making observations from Red Lake Peak near Carson Pass to the south. In his report of 1845–46, Frémont called the lake "Mountain Lake," but on his map of 1848, he gave it the name "Lake Bonpland" in honor of the French naturalist and companion of Baron Alexander Von Humboldt. In 1851, the lake was renamed Lake Bigler in honor of California Governor John Bigler. Neither of these names stuck and the lake came to be called Tahoe, conforming to its original Washoe Indian name—Ta-hoe-hee ("Ta" is the Washoe root for "water," and "tah-oo" or "ta-au" means "lake water" or "sheet of water").

Lake Tahoe did not receive much attention from the early cross-country emigrants-except as an obstacle (it was in the way of their objective of quickly reaching the California gold fields). The route the ill-fated Donner Party chose to cross the Sierra Nevada lies north of the Lake Tahoe basin (roughly the route of today's Interstate 80), while the Pony Express

Placerville route, now followed by U.S. Highway 50, skirts the south end of the lake before crossing the Sierra Nevada at Echo Summit.

Timber resources in the Lake Tahoe basin became valuable following the discovery of the Comstock Lode and the development of deep underground mines there, and a lumbering industry developed along the eastern shore of the lake in the 1860s and 1870s. At the end of the 19th century, when both the mines and the timber had been depleted, the scenery and solitude of the lake attracted wealthy visitors from San Francisco and other areas who acquired estates along the lakeshore. There was no road network around the lake at that time, and transportation, supply, and mail service were by lake steamer. These steamers were elegant ships that are now only a memory in the present-day era of small power boats and "personal water craft." Some of the mansions built at that time are now in public ownership, and the grounds are state parks.

Public use of the lake for recreation expanded greatly during the years following World War II: boating and fishing on the lake became popular, ski resorts were built in the Mountains surrounding the lake, and gaming on the Nevada side flourished.

Lake Tahoe Geology

Lake Tahoe is commonly included in the Sierra Nevada province but its creation is due to block-faulting and volcanism, features more commonly associated with the Basin and Range province to the east. The Lake Tahoe basin is a down-dropped block, box-like in shape, bordered by steeply dipping faults. Volcanic flows and sediments at the north end of the basin have effectively dammed the exit channel, and caused the fault-block valley to become a lake. Basin formation probably began about 5 million years ago during the Pliocene Epoch.

Four major groups of rocks are present in the Lake Tahoe basin: (1) Jurassic-Triassic metamorphic rocks, (2) Jurassic and Cretaceous granitic plutonic (intrusive) rocks of the Sierra Nevada batholith, (3) Tertiary (Miocene and Pliocene) and Quaternary (Pleistocene) volcanic rocks, and (4) Quaternary glacial and fluvial deposits.

The oldest rocks (the Jurassic-Triassic metamorphic rocks) are metamorphosed remnants of a thick pile of sedimentary and volcanic rocks that occupied the area before intrusion of the Sierra Nevada batholith. Most of these rocks have been eroded away, leaving only their roots behind as roof pendants exposed in a sea of granitic rocks (a roof pendant is a scab or prong of rock, more or less engulfed by granite, that probably represents part of the roof of the former magma chamber). The remaining metamorphic rocks are exposed on the western and southwestern sides of the lake basin.

By far the most extensive outcrops in the Lake Tahoe basin and adjacent parts of the Sierra Nevada and Carson Range are Jurassic and Cretaceous granitic rocks composing the Sierra Nevada batholith. Here, as along its entire extent of over 400 miles, the batholith is a composite of many adjacent and overlapping plutons (intrusive igneous rock bodies). These rocks are mostly granodiorite.

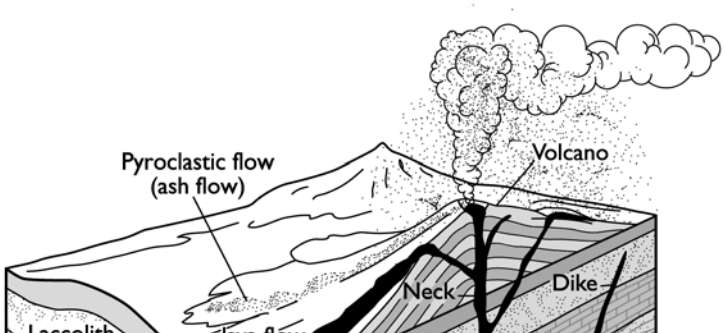
Extensive Tertiary and Quaternary volcanic rocks, mostly mudflows and flows of basalt and andesite, cover large areas in the northwestern part of the Lake Tahoe basin and extend outside the basin to the north and south as well. The mudflows (lahars) are crudely stratified and well- to loosely consolidated, and most of the more extensive landslide areas in the northern part of the basin are formed in these rocks. The andesite and basalt flows are better stratified than the lahars, display prominent joints, and are more resistant to weathering than the mudflows.

Most of the major landforms that we see today in the Lake Tahoe area formed by faulting and warping that followed the major period of andesitic volcanism and lahar deposition (mainly in the last 10 million years). This landscape was then sculpted by glaciation that probably began about 1.5 million years ago near the beginning of the Pleistocene Epoch. At their maximum, the glaciers reached a thickness of almost 1,000 feet, and at one time covered all but the highest peaks and ridges of the Sierra Nevada west of Lake Tahoe. The glaciers moved eastward down the canyons into what is now the Lake Tahoe basin, scouring the granitic bedrock to produce the rugged topography in the area west of the lake. Loose rock was plucked and moved down-canyon by the glaciers to be piled up into moraines at the canyon mouths (the small lakes southwest of Lake Tahoe are dammed, in part, by glacial moraines). Ice from the last major glacial period melted about 10,000 years ago, but since then the climate has cooled enough at least twice that small glaciers formed in the Sierra Nevada. These “mini ice ages” were around 1410 A.D. and from 1700 to 1750 A.D.

In the Carson Range on the eastern side of the Lake Tahoe basin, glaciers developed only on the northern exposures of the highest peaks. Since the highest elevations in both ranges are about equal, the difference in glaciation was directly related to the snowfall each side of the basin received. Then, as now, the weather systems came mostly from the west and more snow fell on the Sierra Nevada crest than on the Carson Range which lies somewhat in the rain shadow of the Sierra Nevada. Today, the average annual precipitation on the Sierra Nevada crest is up to 90 inches, but only a little more than 40 inches fall on the highest peaks in the Carson Range during an average year.

The rocks on the crest of Rose Knob have the same brownish outcrop color as the rocks capping Mt. Rose to the east. These are Tertiary andesite and dacite volcanic flows that overlie the lighter colored Cretaceous granitic rocks. Lower on the grade ahead, small tongues of these volcanic flows are exposed in the road cuts. Where you see dark, greenish-gray rocks filling the gabions (the rock-filled wire structures securing the cuts above the road on the right), an andesite flow was cut at that point, and the rubble put to use in the gabions.

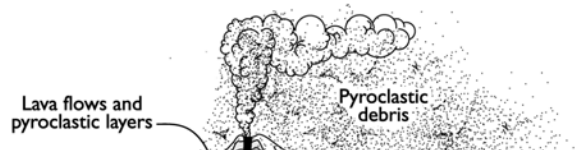
During the last



15 million years volcanic activity occurred along with faulting, as magma rose from depth along vents and fissures that developed in the thinned crust. Large portions of the Reno area are covered with layer upon layer of these volcanic rocks, and the faults bounding the ranges are still active and visible. Lake Tahoe was formed by these processes of faulting and volcanism and modified more recently by glacial processes in the last 1.8 million years ago.

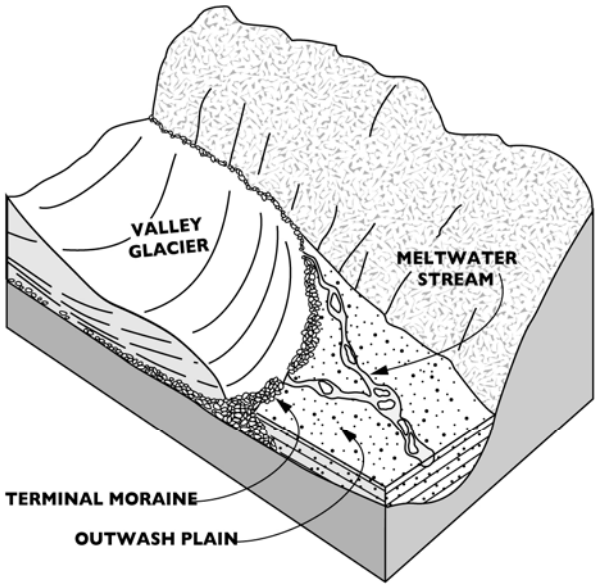
Illustration by Kris Pizarro, Nevada Bureau of Mines, special publication 19.

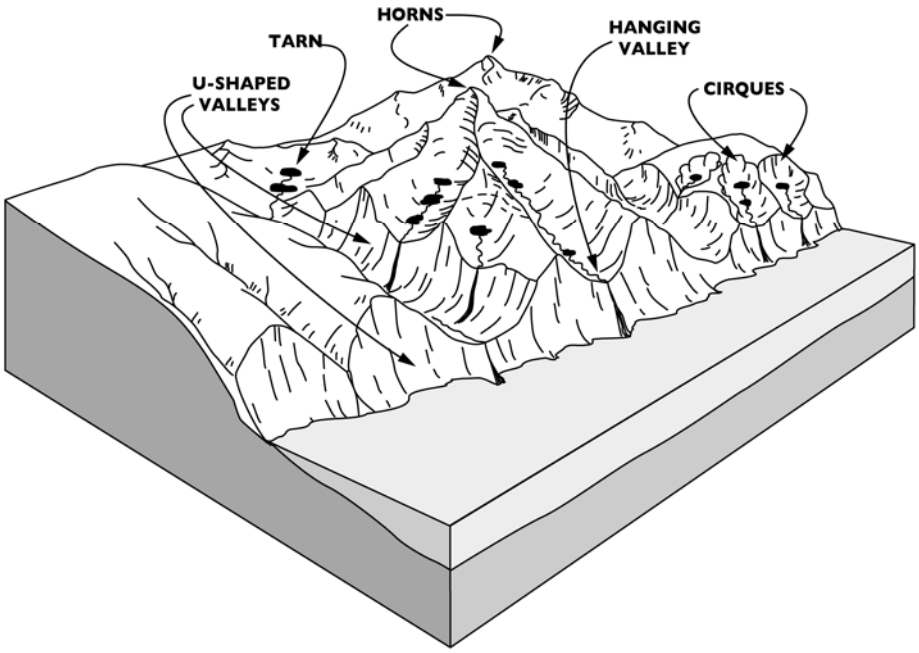
Volcanic landforms created by andesite composite volcanoes, rhyolite domes, and basalt flows.



Illustrations by Kris Pizarro, Nevada Bureau of Mines, special publication 19

Glacial features as typical of those found along the eastern face of the Sierra Nevada west of Lake Tahoe.





Illustrations by Kris Pizarro, Nevada Bureau of Mines, special publication 19.

The Comstock Lode

Virginia City's mines produced an amazing amount. of silver and also a lot of gold from a system of quartz veins known around the world as the Comstock Lode. "Lode" is an old Cornish-miner term for a fissure in country rock filled with ore minerals, and "Comstock" is for Henry T.P. Comstock, a ne'er-do-well miner-drifter who happened to be in the right place in 1859 to get his name attached to the silver discovery - Comstock's Lode.

The term "Comstock" is loosely used by almost everyone for the entire area of mines, cities, railroads—everything along the eastern slopes of Mt. Davidson. When discussing geology and mineral deposits, however, we need to be a little more specific. There are two separate but probably related vein systems that were mined within the Comstock area: the Comstock Lode itself, and the Silver City veins. The Comstock Lode is the north-northeast-trending group of veins that were mined between Gold Hill and the north end of Virginia City—the silver-rich mines bracketed between the two 1859 discoveries. In contrast, the veins on the Silver City fault trend northwest-southeast, and are more gold-rich. Deposits in the Silver City veins were prospected and mined within an area that begins at the Keystone Mine, north of Devil's Gate, and extends about 2 miles to the southeast of Silver City.

History of the Comstock Lode

The Comstock Lode is the site of the first great silver discovery made in the American West and the resulting mining boom brought statehood to what until then was mostly viewed as an empty expanse of sagebrush along the emigrant road to California.

The story of the Comstock begins in 1849 with the discovery of placer gold at the mouth of Gold Canyon near the present town of Dayton. Placer miners worked the gravel in Gold Canyon off and on for the next few years, eventually following the gold upstream to its source—the many small gold-bearing veins in Silver City. The canyon gravels were mostly barren above Devils Gate. The outcrop of the Comstock Lode at what is now Gold Hill was also mostly barren of gold and was more or less ignored during the early years.

Eventually, prospectors who persisted in digging on the croppings at Gold Hill uncovered the top of the "Old Red Ledge" in March or April 1859. The discovery ore, found in a hanging-wall split of the main Comstock Lode, was crushed and weathered, and consisted of rusty-looking quartz, some gold, and a lot of heavy, blue-black material that turned out to be rich silver sulfide (the mineral acanthite). In June 1859, a similar discovery was made a little over one mile to the northeast on vein croppings at the Ophir Ravine discovery site. Once the incredibly rich silver ore of the Comstock was recognized, the "Rush to Washoe" began. Virginia City became Nevada's first bonanza boom town, and the first silver-mining camp in the United States.

During its main production period from 1860 to 1880, the Comstock Lode produced more precious metals than all of the rest of the United States and, before it finally came to a rest in 1984, 192 million ounces of silver and 8.2 million ounces of gold were dug from a roughly 3-mile-long stretch of ground along the base of Mt. Davidson. Valued at over $405 million at the time of production, this bonanza would be worth about $4.5 billion at today's (2005) metal prices.

Comstock Water Supply

From the beginning, water was a problem on the Comstock—either too little or too much, depending on whether it was needed for drinking or it was making a nuisance of itself by flooding the mines. As mining developed, water became as valuable as the ore being sought. Mountain springs, snowmelt, and tunnels dug into the Virginia Range near the mines just couldn't meet the needs of the growing population. The mine water, charged with minerals and of general low quality, was no help here either and remained a separate problem.

In May 1862, two companies that had been collecting and distributing water to the mines and miners were consolidated into the Virginia and Gold Hill Water Company. Each year, however, as Virginia City grew, the limited supply was taxed to its limit and the fear of drought increased. Digging more tunnels into the hills above town did not help. Pumping water up from the Carson River was even considered but such an undertaking was found to be uneconomical. In desperation, engineers next turned their gaze to the deep spring snow pack of the Mountain ranges to the west, and an ambitious plan was devised to construct a system of dams, reservoirs, flumes, tunnels, and pipelines to carry water from the Carson Range to Virginia City (see map on page ?).

The immediate problem was to establish a route between water sources high in the Carson Range and hopeful water users on the far slopes of the Virginia Range, one valley and a Mountain range away. Flumes and tunnels would do to transport the water down from the Carson Range to the valley, but a pipeline would be needed to carry it across the valley and back up into the Virginia Range. The low spot on the proposed pipeline route was at Lakeview Summit, between the two ranges. Here a major challenge was given to the project engineer. The pressure created within the pipe by the 1,997-foot elevation difference between the Mountain intake and Lakeview would be 819 pounds per square inch, twice as much as any pipe had ever been subjected to in projects like this one.
Hermann Schussler, a German immigrant and chief engineer for the Spring Valley Water Works of San Francisco, was called in to design the "Washoe Pressure Pipe"—an inverted siphon. He had built other pipelines to resist extreme hydrostatic pressures by using iron plates rolled to a cylindrical shape and riveted at the seams. After the surveys and calculations were completed, it was concluded that in addition to the dams, reservoirs, and flumes, a pressure pipeline 7 miles long and 11.5 inches in diameter would be needed to carry the desired flow of water.

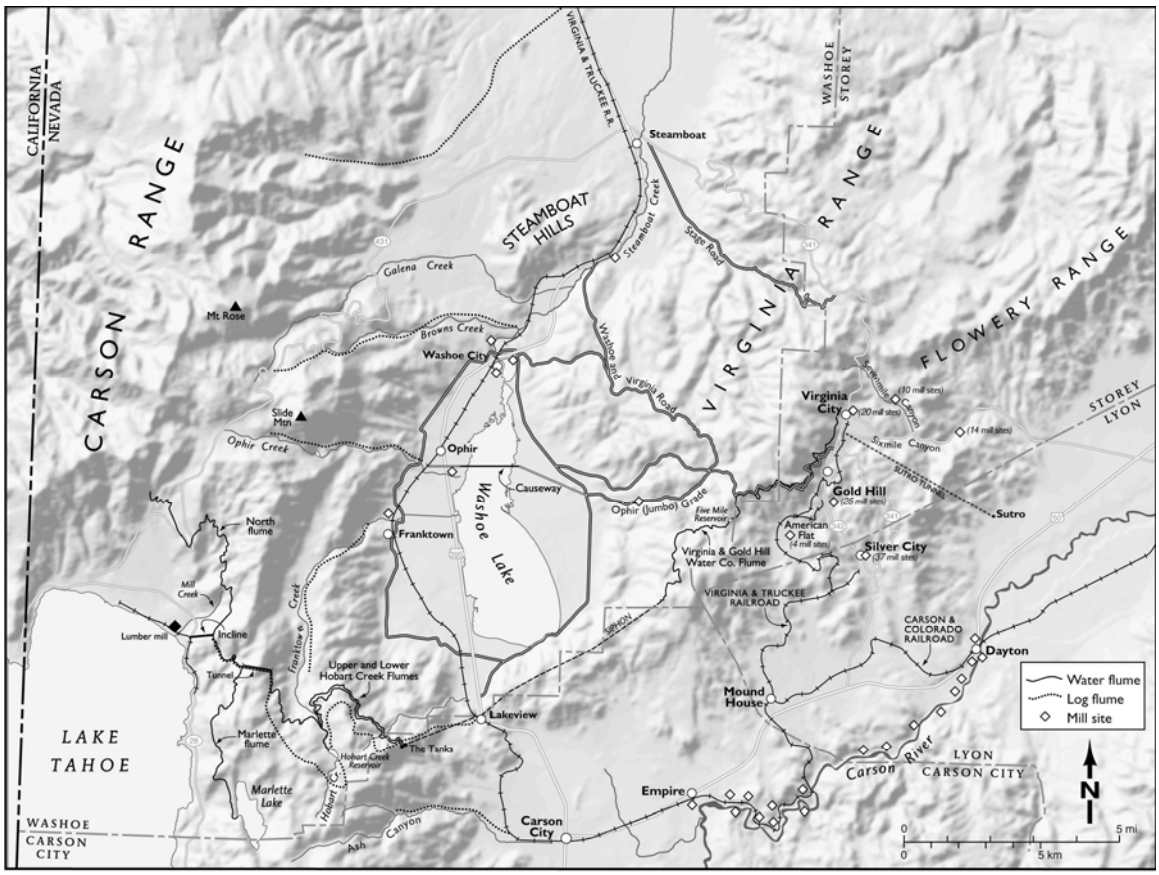
The project began in 1872 with construction of a diversion dam on Hobart Creek in a high valley in the Carson Range, followed by construction of the system of flumes, tanks, and

finally the laying of the pipe of the inverted siphon. For this, iron in 3-foot by 10-foot plates was shipped from Scotland and fabricated into pipe at the Risdon Iron Works in San Francisco. The plates varied in thickness from 0.062 to 0.312 inches, depending on the pressure the section of pipe manufactured from them would be subjected to. Enough overlap was left for double-riveting of the joints. This riveting was done on site during construction of the pipeline. Lead caulk was used to seal the joints, and the entire pipeline was coated inside and out with asphalt and coal tar to protect against rust. The first section of pipe was laid in June 1873, and the last in July 1873, only six weeks later.

On August 1, 1873, water entered the system from Hobart Creek Reservoir (elev. 7,554 feet) 3 miles west of Lakeview Summit and flowed north down Franktown Creek for a short distance before being diverted into the aqueduct which curved back to the south toward the head of the pipeline, located 1.5 miles to the west of Lakeview. The water entered the pipeline and flowed eastward, passing through the lowest point in the system at Lakeview Summit to be carried within the upward leg of the siphon to the discharge point. Bonfires were lit along the route signaling that water was successfully passing through the system. The water discharged from the pipeline at an elevation of 6,669 feet near the southwest end of the Virginia Range about 1 mile southwest of McClelland Peak. It then flowed northeastward by flume and aqueduct around the west side of the range to the range crest (about 1 mile northeast of McClelland Peak) where it met and paralleled the Ophir Grade most of the way to water storage tanks near Bullion Ravine above Gold Hill and near Spanish Ravine in Virginia City. At 6:45 PM, 12,000 residents of the Comstock watched water pour into Bullion Ravine and a great celebration ensued.

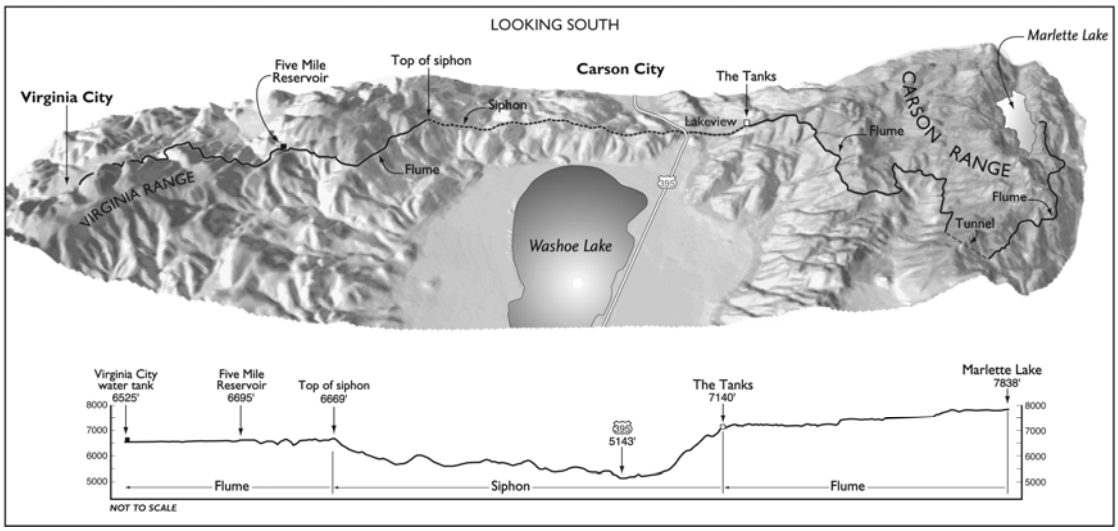
The initial capacity of the water system was 2,000,000 gallons of water a day.
After the Big Bonanza was discovered in Virginia City in 1873, more aqueducts and a second pipeline were planned. These were completed late in 1875, the same year that the Great Fire leveled most of Virginia City. Later, Marlette Reservoir, located a mile west of Hobart Creek Reservoir, was deepened (by raising the dam) and connected by flumes and a tunnel to the existing system to provide additional water. In 1887, a third pressure pipe was laid across Lakeview next to the other two, raising the capacity of the system to 10,000,000 gallons a day.

When completed, the water supply system included three reservoirs, over 21 miles of pressure pipes across Lakeview Summit, about 46 miles of covered box flumes, and a 3,994-foot tunnel built at elevations of between 7,000 and 8,000 feet. The pipeline is still in place, and serves as Virginia City’s water supply system. The State of Nevada purchased the water system in 1963, however, and an increasingly thirsty Carson City is the major user of Marlette Lake water today.



Above: Mills, flumes, railroad lines, and wagon roads—the infrastructure of the Comstock mines. Historical roads are dark, modern roads have white centers.

Below: Pathway of water to the Comstock; Carson Range to Virginia City by flume, siphon and pipeline.



Illustrations by Kris Pizarro, Nevada Bureau of Mines and Geology, special publication 19.

George Whittell ownership and Incline Village (from N. Lake Tahoe Chamber of Commerce).

In the mid-1800's, lumber interests discovered the Nevada North Shore as an excellent source of lumber for the Washoe mines, and at that point, began methodical logging.
The area was called "Incline" in those days. The name was derived from the double track narrow gauge tramline, which carried logs nearly 1,400 feet vertically to the V-flume, which ran along the Mountain top granite outcroppings. The 4,000 foot-long tramline was located in the area that is now Mill Creek Subdivision (hikers will find the scars and remnants of the tramline and flume in the area between Mill Creek and Sand Harbor Beach). The V-flume carried Incline's timber on the first leg of its route to the water tunnel through the Mountains and to the mines of Virginia City and the Washoe Valley.
In 1884 the remote settlement of Incline Village was declared both an election precinct and a fourth class post office, thus marking the first time that Incline was "on the map."

By 1897 Incline had been left a sea of stumps, with a maze of crumbling flumes and rotting log chutes. The ugly duckling of the Lake area, Incline was left to sleep and rejuvenate itself. In the early 1900s visitors to Lake Tahoe spent glorious summer holidays in the vacation paradises of Glenbrook and Tallac to the south, and Tahoe Tavern and Brockway to the north. A one-lane road connected the north and south shores, and in the 1930's summer homes were built in the area of Incline Beach (south from Hyatt Regency Lake Tahoe Hotel along Lakeshore Boulevard).

By this time the lumber interests had sold most of the Nevada North Shore from Crystal Bay to Zephyr Cove to a multimillionaire real estate magnate, "Captain" George Whittell. Captain Whittell built his stone castle on a point south of Sand Harbor (his home can be seen from the road as you are driving to the South Shore). Captain Whittell was quite a character, and at one time had wild animals roaming his reserve.

Incline Village Growth and Development

Incline was little more than a "wide spot" in the road during the 30s, 40s and early 50s, with only summer homes and a trailer park to distinguish it. Year-round residents were few, and those who remain tell stories of wild winters, food shortages and isolation.

In the late 1950s Crystal Bay Development Company approached Captain Whittell, then in his declining years, with an offer to purchase the 9,000 acres, which is Incline Village today. Crystal Bay Development Company had a grand plan for a community, totally unique and master-planned to perfection. The sale was made and development began. In the 1960s roads were cut, a ski area was designed, beaches were developed, and Robert Trent Jones was contracted to conceive a golf course which would couple beauty and challenge.

Crystal Bay Development, in an attempt to preserve something of those early logging days, named this new community "Incline Village." By 1964 a new elementary school was under construction, and several years later, the community cut the ribbon at Incline High School. Incline Village was on its way.

In June of 1968 Crystal Bay Development Company sold its remaining interests to Boise Cascade Corporation and new development began.

A second golf course designed by Robert Trent Jones, Jr. was constructed and Incline Village Units 1, 1A, 1B, 2, 3, 4 and 5 were master planned. Land sold quickly. Large condominium projects were built — Mountain Shadows and Forest Pines. Where supply could not meet the demands of the 1960s, now in the early 1970s supply exceeded the demand and Incline Village was ready for another "nap".

Recovery came in 1976 as renewed interest in Incline Village as a year-round community sprang up. Residents became interested in their political future — the subject of incorporation was discussed and the possibility of forming a new Lake county was explored. The swing had started toward a community with a larger percentage of permanent residents, and facilities were built to handle their needs.

That brings us to the Incline Village we have today...with signs of a healthy future in evidence around every corner. Incline residents and property owners come from all parts of the country and the world. They are hardworking young families and relaxed retirees. They are corporate executives, airline pilots, teachers and builders. They are artists, writers and astronomers. They are recreationally active and environmentally protective. And they have one common denominator, their all-encompassing love for Incline Village and Lake Tahoe.

Typical V-flume used to transport logs and lumber from the crest of the Carson Range to the valleys to the east.

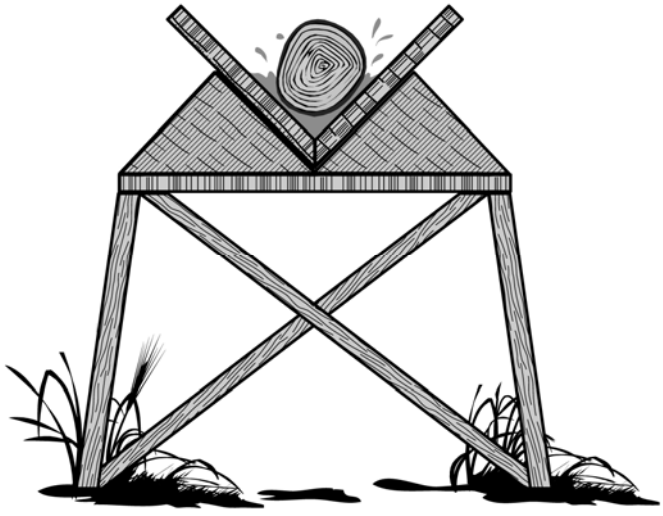


Illustration by Kris Pizarro, Nevada Bureau of Mines and Geology, special publication 19.

Diamond Peak Ski Area (information from Diamond Peak).

Diamond Peak began forty years ago as Ski Incline, the brain child of Oklahoma native Art Wood. Wood had a master plan for a year round, resort community. Incline Village was to become the "Pebble Beach" of the Sierras. In 1966, Wood hired Austrian ski consultant, Luggi Foeger, to design and build Ski Incline. After only four months of construction, Ski Incline opened its lifts in November, 1966. It was the first resort in the west to have snowmaking equipment.

In 1987 Ski Resort Manager, Jurgen Wetzstein, led the development of the upper Mountain and the addition of a mile long chairlift to reach the top of the peak. This expansion doubled Ski Incline's skiable acreage and added more advanced terrain.
Since most of the new trails were labeled as "black diamonds," Ski Incline was re-named Diamond Peak. The improvements in 1987 also included the expansion of the snowmaking system to the expanded upper Mountain as well as more grooming equipment and shuttle service. The Bee Ferrato Child Ski Center was also built that year.
In 2002 Diamond Peak expanded and improved that snowmaking system again so that 75% of Diamond Peak's terrain has snowmaking capabilities. The Snowflake Lodge was also renovated and expanded. Its new wrap around deck features panoramic views of Lake Tahoe and the Sierra Nevada range.

In 2003 Diamond Peak replaced the old Crystal Quad with a new high speed quad to the top of the Mountain. The 2.8 million dollar investment replaced the 16 year old quad with new faster technology and cut the old ride time in half. Now, skiers can get to the top in about five minutes. This year Diamond Peak is excited to turn 40. They've added some new programs, packages and specials to help make sure their guests can choose all the options they need.

New For 2006/2007

Diamond Peak is embracing the theory "We're not getting older, we're getting better." As a celebration of 40 years in business, they've added new programs and specials.
This year Diamond Peak has joined up with Burton Snowboards to become a Burton Learn To Ride Center. Burton's specially designed snowboards make learning easy and fun. All beginner snowboarding packages will include this new equipment. Diamond Peak will also offer Demo Snowboards this year. The fleet will consist of all new 2006-2007 model Burton Snowboards.

Skiers and snowboarders will also find other new options for learning, like the Learn Together Special. This is a great way for families to spend quality time together on the slopes. The Child Ski Center also offers two new programs this year. The Frequent Private Lesson Program gives kids a sixth private lesson free after they take five. Now, kids can get even more out of their one-on-one instruction time. Bee Ferrato, Founder and Director of the Child Ski Center, believes "This continuity through the season allows the child to build a strong bond with their special instructor."

For those that can ski midweek, Diamond Peak offers the Midweek All Day Special. Kids can take all day group lessons on any two days out of a five day period. The package includes group lessons, indoor supervision and lunch.

Diamond Peak's popular Last Tracks event will be back again this year. Last Tracks fans can purchase a Last Tracks Season Pass. It's good at every Last Tracks event this season. For those that aren't familiar with Last Tracks, it's an afternoon ski and wine tasting event at the mid Mountain Snowflake Lodge on Saturdays between February 10 and April 14 . While guest sample fine wine and appetizers, the Mountain crew prepares a freshly groomed run for them to ski or snowboard down for their last run of the day.

The Bee Ferrato Child Ski Center is nationally recognized for its innovative programs and contribution to lifetime fun. The Child Ski Center offers lesson for children 3 to 7 years old. Each lesson option includes a complimentary child lift ticket.

Diamond Peak caters to beginners with tender loving care. Diamond Peak boasts a gentle learning area with its own chair lift and moving carpet surface lift. "Pete's Powerline" transports kids up a small hill and makes learning easy and more fun. It eliminates side stepping, decreases fatigue and results in more learning time for children. Instructors maintain small classes of no more than five kids per instructor contributing to individualized instruction and faster learning. Intermediate and advanced skiers are also welcome at the Child Ski Center.

Quotes: "I love Diamond Peak! I learned to ski there; I could draw a map of the resort from memory. Diamond Peak means a lot to me and has a special place in my heart and will always no matter where I live." John, Alpharetta, GA

"We had the pleasure of skiing at Diamond Peak and the whole experience, kids lessons, adults lessons, equipment rental was great - we can't wait to get back there!" Catherine, Sausalito, CA

"Whenever we go to Tahoe, Diamond Peak is always a priority for my entire family. It isn't super crowded. Instructors are nice and very knowledgeable for all skill levels. " Christina, Lake Magdalene, FL

Special management of Lake Tahoe:

The Lake Tahoe Basin Management Unit is unique in the forest service, in that the boundary is the hydrologic area surrounding Lake Tahoe. If a snow flake or water drop falls in the Basin, it ultimately ends up in Lake Tahoe. Before that time, three National Forests and seven counties were all trying to find out what is best for the lake. The Lake Tahoe Basin Management Unit, a couple of municipal and other state organizations comprising the Tahoe Regional Planning Agency (TRPA) have formed a coalition to preserve the water and scenic resources at Lake Tahoe.

Research Sources:

In addition to obtaining information from the US Forest Service and Washoe County, the following were significant research sources:

Bureau of Mines - http://www.nbmg.unr.edu/sales/pbs.htm
Call (775) 784-6691 ext. 2 to order special publication 19, “Geologic and Natural History Tours in the Reno Area”.

UNR oral history program website is:
http://www.unr.edu/cla/oralhist/ohweb/oralhist.htm.
(775)784-6932 or email them at ohp@unr.nevada.edu
The Harry Callahan oral history book is out of print right now,
but you can order an entire CD of ALL of their oral histories.

Native Nevada Classroom: Washoe culture
http://www.unr.edu/nnap/WC/wc_main.htm

Dr. Church information at UNR, special collection,
http://www.library.unr.edu/specoll/mss/nc96.html
The person’s name to contact is at the bottom of the last page of the website.
The contact is Jacque Sundstrand at this email: jsund@unr.edu