



Red Hill Master Plan

Sun Valley, Nevada

Adopted August 14, 2012



Washoe County Regional Parks and Open Space • 2601 Plumas Street, Reno, NV 89509 • (775) 823-6500

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City of Reno Parks and Recreation Commission
Sun Valley General Improvement District*
Sun Valley Citizen Advisory Board*
Washoe County Open Space and Reg. Park Commission
Board of County Commissioners

**Stakeholder Committee Member*

Introduction

Red Hill is a landmark natural formation overlooking the Truckee Meadows from the north and providing spectacular views of Reno and its vicinity. Located on 437.64-acres, unique geologic features along with a variety of desert plants and wildlife add to its attraction as a popular area for outdoor recreation.

In 2000, The American Land Conservancy (ALC) acquired 399.30-acres at Red Hill from the Bureau of Land Management as part of the Laborde land exchange. ALC dedicated the property to Washoe County in 2001, with significant deed restrictions in an effort to protect its vulnerable natural resources, in particular altered andesite buckwheat, a sensitive native plant species. Ladera Ranch 390 LLC (Silverstar Communities) dedicated an additional 38.34-acre parcel to Washoe County in 2010 for additional open space preservation and as part of their planned development.

Without a community vision and plan for Red Hill, the site was beginning to show signs of misuse (illegal dumping, off road vehicles, unauthorized trails and target shooting etc.) that threaten its unique cultural and natural resources. Therefore, Washoe County, in collaboration with the Washoe County School District, Sun Valley Citizens Advisory Board, Sun Valley General Improvement District and Desert Research Institute, applied for and received a technical assistance grant from the National Park Service Rivers, Trails and Conservation Assistance (RTCA) Program to facilitate community outreach and create a conceptual plan for Red Hill. Washoe County also organized a Stakeholder Committee, which drafted the project scope, vision, goals and desired outcomes for the planning process, identified stakeholders and workshop participants, and hosted community outreach events and a public input survey.

After evaluating a range of possible community engagement methods, the planning team agreed to proceed with a design workshop, also known as a “charrette.” A charrette is a multi-day event where landscape architects, technical experts from the fields of recreation, natural resources, and land use management, and community members come together in order to develop a conceptual plan and implementation strategies. The charrette allows for more streamlined development of a plan and an increased level of community engagement. Through an existing partnership between RTCA and the American Society of Landscape Architects, four talented landscape architects donated their time, expertise, and design services to develop the conceptual plans.

The resulting Red Hill Master Plan establishes a new community vision for Red Hill and includes background information, an overview of the master planning process, a conceptual plan, design details and an action plan that will guide long-term implementation.





Access to natural open spaces at Red Hill, which is located in Sun Valley, Nevada just north of Reno.

Background

Red Hill is located in a transition zone between open space and four densely populated urban communities. This 437.64-acre “urban backyard” is adjacent to Reno to the South, Sun Valley to the east, Golden Valley to the north, and Panther Valley to the west.

A natural resource investigation, conducted by Washoe County staff for Red Hill, incorporated several facets including threatened and endangered plants and animals, wetlands, cultural and historic resources and diversity points (recorded observations and documentation by area professionals). With a combination of desert terrain, mountainous boundaries and rocky ridges, Sun Valley is host to a variety of unique plants and wildlife. Red Hill’s visually important ridgeline serves as important backdrop for the area.

Red Hill is designated as open space for Park and Recreation use. Adjacent undeveloped planned land uses include accommodations for further urban residential development (Low/Medium Density Suburban, High Density/General Rural), commercial improvements and higher education opportunities. Existing facilities neighboring Red Hill include the Regional Public Safety Training Facility, SPCA Animal Shelter, Desert Research Institute, Truckee Meadows Community College, Lois Allen Elementary School and Desert View Communications.

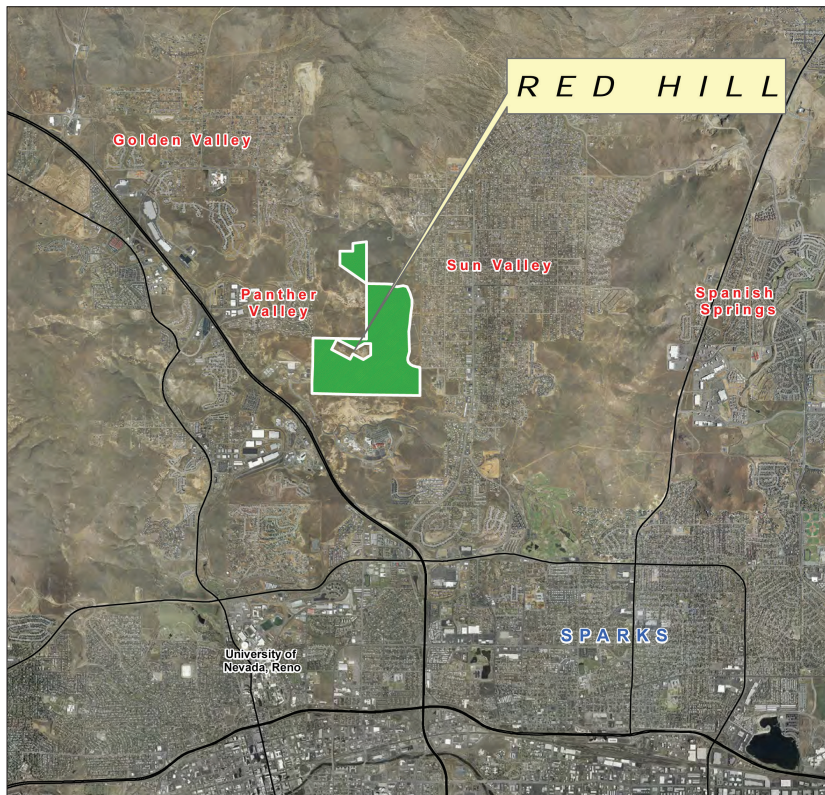


Figure A: Red Hill Vicinity Map

Related Planning Documents

Organizations such as Washoe County, Desert Research Institute, have undertaken a number of past planning efforts that affect Red Hill. Relevant plans and studies, identified by the Stakeholder Committee, include but are not limited to the following:

Dandini Research Park Master Plan, Desert Research Institute *(June 2010)*

The Master Plan for the Desert Research Institute Dandini Research Park, located adjacent to Red Hill, “establishes a framework for future development that enhances support for research-based businesses in the Greater Truckee Meadows region”. The plan identifies properties that may be developed in the future and indicates that undeveloped open space lands may provide an opportunity for pedestrian trails.



Site Illustration from the Desert Research Institute Dandini Master Plan identifies potential pedestrian trail connections between buildings on surrounding open lands.

Sun Valley Area Plan, Washoe County *(September 2010)*

The Sun Valley Area Plan establishes a vision, policies, and plans for future development, public facilities, streets and highways, and recreation. The plan includes the following policy related to Red Hill: “The Washoe County Department of Regional Parks and Open Space will continue to work with all interested organizations and individuals to reduce illegal dumping and other resource damage to Red Hill and take appropriate steps to eliminate off-highway vehicle use on Red Hill. The plan also identifies potential trails, including the Sun Valley Rim Trail and is located adjacent to Red Hill.

Sun Valley Park District 2D Master Plan, Washoe County *(2006)*

The Sun Valley Park District 2D Master Plan identifies open space and park locations and amenities and outlines next steps for implementation. The plan identifies Red Hill as an Open Space area and states that the “preservation of the site has vast recreational opportunities and its preservation helps protect the integrity of the residential community and its visually important ridgelines throughout”. The plan also identifies Altered Andesite Buckwheat as an important natural resource.

Regional Open Space & Natural Resource Management Plan, Washoe County *(June 2008)*

The Washoe County Regional Open Space and Natural Resource Plan “provides the framework, goals and policies for the management of natural resources and open spaces in southern Washoe County”. Goals, policies and maps related to topics such as biodiversity, restoration, habitat protection, recreation, and visual and scenic character, and hillside protection informed planning at Red Hill.

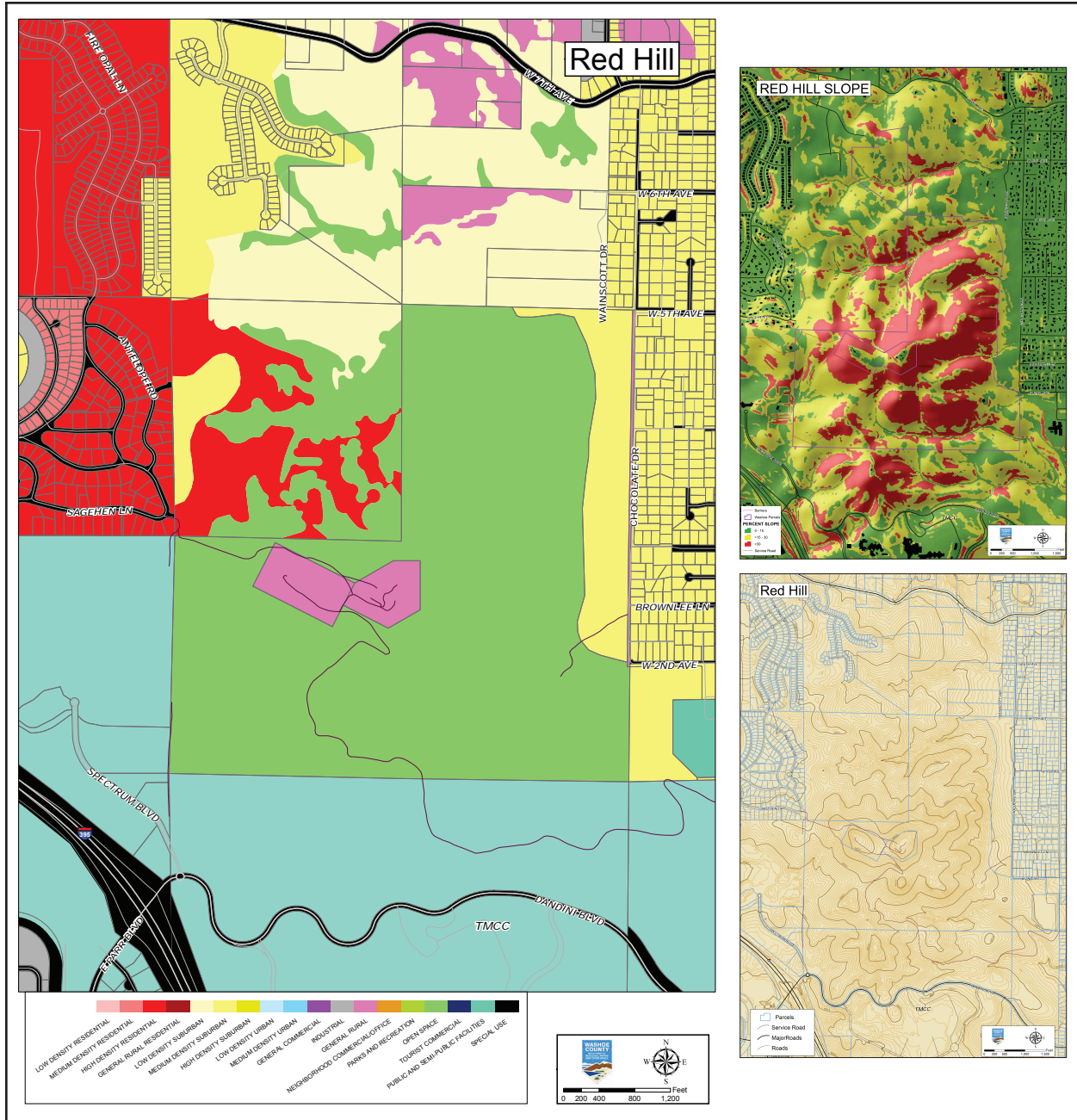


Figure B: Existing Conditions maps, included zoning, topography and slope analysis, informed the master plan.

Cultural and Historical Resources

Cultural and historic resources generally refer to artifacts, structures, and other evidence of the lifestyles of indigenous peoples as well as early European settlers who migrated to the area in the mid-1800s. Pre-historic resources refer to fossils and artifacts dated prior to the advent of human recorded history. Northern Nevada's legacy of mining for precious and semi-precious metals, along with the area's ranching heritage and stories of early mountaineering expeditions are elements that are often incorporated into interpretive exhibits. The County also works closely with experts from University of Nevada-Reno, Nevada State Historic Preservation Office, Nevada Rock Art Foundation and representatives from local tribal councils, including the Reno-Sparks Indian Colony, to preserve and protect archaeological resources, including petroglyphs and sacred sites. Access to these sites will be provided wherever feasible. While there are no known cultural resources at Red Hill, according to the State Historic Preservation Office (SHPO), there is evidence of cultural and historical sites near the Northern and Southern tips of Sun Valley. Washoe County will work with our cultural partners should evidence of cultural resources be discovered at Red Hill through implementation of this master plan.

Geology and Mining

Red Hill is located within the Peavine mining district where silver, gold, lead and zinc ore bodies have previously been mined. The workings in the district consisted of numerous shallow shafts, a large number of pits, trenches and a few adits. Gold and silver production from 1900-1938 totaled \$112,090. The geologic characteristics at Red Hill resembled mining in El Salvador, Chile that had the potential for important copper mineralization in the precious metal-rich zone, just beneath the rocky surface.

Andesite is a very finely crystalline extrusive rock of volcanic origin, solidified from molten lava at the Earth's surface. In composition, andesite can be considered an intermediate between basalt and rhyolite; it is composed largely of plagioclase feldspar with smaller amounts of dark-colored minerals. Andesite is typically lighter colored than basalt, having a color from dark gray-green to lighter gray, brown or red. The name Red Hill makes a reference to the rust-red color of its hill sides. Andesite serves as important plant habitat at Red Hill.

During the Master Planning process, Red Hill was inspected by the Nevada Division of Minerals. Four mine adits were discovered, three of which were officially abandoned to improve safety. Two mines were filled with polyurethane foam and back filled with native material. One mine had evidence of previous bat activity and a gate was installed to encourage additional bat habitat in the future. This mine will continue



Following the design workshop, four abandoned mines were secured and a bat gate was installed at one adit with evidence of bat activity.



The Altered andesite buckwheat is prevalent at Red Hill. Photo: J. Morefield, State of Nevada Department of Conservation and Natural Resources (2006)

to be monitored in cooperation with the Nevada Department of Wildlife as the bat population increases. One abandoned mine feature identified as WA-141 still remains and is a 5' wide by 6' tall and 41' long horizontal adit in very competent rock, with no signs of ground instability (e.g. loose rocks on floor and/or crevices in the back/ceiling), and poses little to no physical safety risk to the public according to the Nevada Division of Minerals. The feature is also highly visited and affords little to no opportunity for bat or other animal habitat. This remaining open adit should continue to be monitored by Washoe County and Nevada Division of Minerals into the future.

Plant List
Cheatgrass (g)
Hookers Balsamroot (f)
Altered Andesite Buckwheat (f)
Wrights Buckwheat (f)
Birdsnest Buckwheat (f)
Utah Juniper (t)
Green Ephedra (s)
Wyoming Big Sagebrush (s)
Bitterbrush (s)
Sulphur flower Buckwheat (f)
Squirreltail (g)
Hawksbeard (f)
Gray Horsebrush (s)
Desert Peach (s)
Low sagebrush (s)
Snakeweed (s)
Spiny Hopsage (s)
Rubber Rabbitbrush (s)
Ponderosa Pine (t)
Jeffrey Pine (t)
Longleaf phlox (f)
Filaree (f)
(g)=grass, (f)=forb, (t)=tree, (s)=shrub

Figure C: Red Hill Plant List

Plants

Indigenous to Washoe and Storey Counties, Altered andesite buckwheat is extremely prevalent in the Southwest portion of Sun Valley at Red Hill. A part of the buckwheat family Polygonaceae, this rare plant is listed on the Nevada Natural Heritage Program's Sensitive List and is a species of concern with the United States Fish and Wildlife Service.

This is a distinctive species that can be found on dry andesite soil at low elevation including Red Hill. It contains a large perennial mound with rounded grayish leaves and large pale-yellow inflorescences, which flowers in late spring to early summer. Habitat consists of dry, shallow, highly acidic gravelly clay soils, derived from weathering of hydrothermal sulfide deposits formed in andesite, creating patches on steep slopes.

Buckwheats provide an excellent nectar source for a variety of pollinators, including butterflies, bees, wasps, beetles, and other insects. Buckwheat seeds are nutritious food for birds and ground dwelling insects such as ants. Other flora/fauna observed at Red Hill are shown in Figure C.

Source: Nevada Rare Plant Atlas, State of Nevada Department of Conservation and Natural Resources Natural Heritage Program, www.heritage.nv.gov, 2006.

Noxious Weeds

Even though the Red Hill properties contain very little noxious weeds, if untreated they have the potential to become a large problem in the future and would benefit from treatment to eliminate the small satellite populations found in the surrounding areas. A small patch, less than an acre, of Scotch Thistle (*Onopordum acanthium*) has been identified in a surrounding parcel and could be eliminated with continued chemical or mechanical treatments. Ongoing monitoring of the Red Hill property is also recommended to ensure that any future infestations of noxious weeds is recorded and treated.

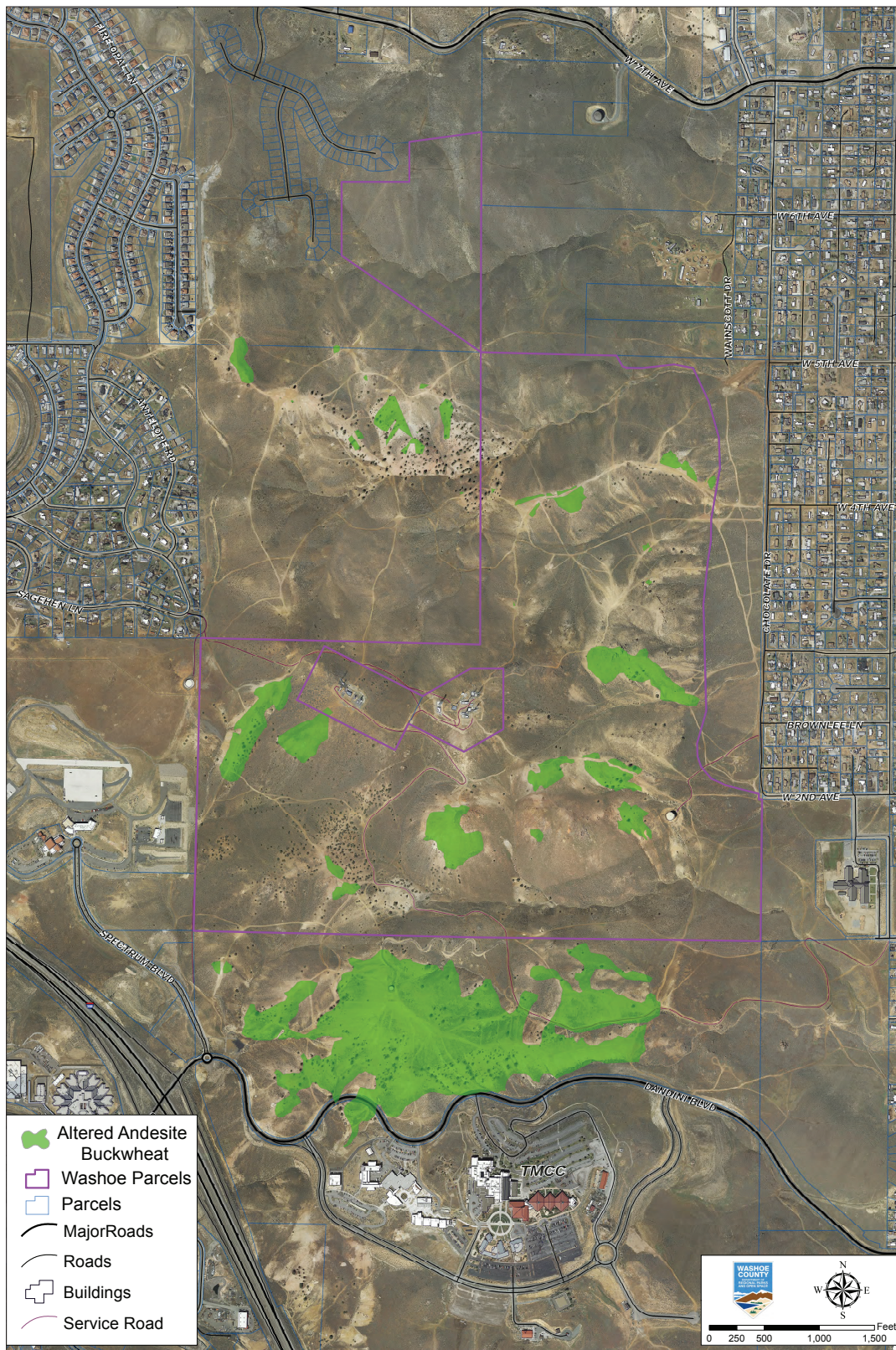


Figure D: Locations of Altered Andesite Buckwheat, a rare plant found at Red Hill.



*An active Golden Eagle nest is located at Red Hill. Eagles and other birds can be viewed from the site.
Photo: Marsha Cardinal*

Wildlife

Golden Eagles: An active Golden Eagle nest is located at Red Hill. This powerful eagle is North America's largest bird of prey and has an average life span of 30 years in the wild. These birds are dark brown, with lighter golden-brown plumage on their heads and necks. They are extremely swift, and can dive upon their quarry at speeds of more than 150 miles per hour. Golden eagles use their speed and sharp talons to snatch up rabbits, marmots, reptiles, birds, and ground squirrels, which are abundant in this region. They are monogamous and may remain with their mate for several years or possibly for life. Golden eagles nest in high places including cliffs, trees, or human structures such as telephone poles. They build huge nests to which they may return for several breeding years. Females lay from one to four eggs, and both parents incubate them for 40 to 45 days. Typically, one or two young survive to fledge in about three months. Eaglets have been observed at Red Hill in 2011 and 2012.

Golden Eagle activity should continue to be monitored in cooperation between Washoe County and the Nevada Department of Wildlife. Recognizing the need to create a conservation buffer around the nest at Red Hill, efforts should be made to reduce congested area shooting and off highway vehicle access in the immediate area to protect this unique species. Golden eagles are federally protected by the U.S. Fish and Wildlife Service under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA).

Bats: Bats are on the decline with 50% of American bat species in severe decline or already listed as Endangered. Their loss jeopardizes entire ecosystems. Bats eat large quantities of insects such as mosquitoes, beetles, moths, grasshoppers, and locusts. Many of these insects are harmful to crops, forests and humans. Without the benefit of insect-eating bats, farmers would have to apply more pesticides to protect their crops and more insecticides would need to be used to protect the public from disease carrying mosquitoes. Bats reproduce at a very slow rate. Most species in Nevada give birth to and nurse only one pup per year. Although the spotted bat is Nevada's only bat species listed as "Threatened", several species are declining in number and some at a rapid pace. Habitat destruction, disturbance at hibernation and maternity colonies, and the use of pesticides all have been responsible for this decline. Twenty three native species of bats in Nevada depend on humans for protection and habitat conservation.

Habitat enhancements for bats are easy and inexpensive. These aerial allies eat thousands of insects at night many of which are forest and crop pests. Many of the bats in Nevada feed on mosquitoes that can carry diseases such as the West Nile Virus. Evidence of bat activity was discovered in one of the mine adits at Red Hill. With the assistance of the Nevada Division of Minerals, a protective gate was installed at this location in an effort to protect hibernating bats as well as colonies of females giving birth. It is recommended that Washoe County collaborate with the Nevada Department of Wildlife and The Nevada Bat Working Group, an organization comprised of state, federal, and private wildlife scientists dedicated to the preservation, protection, management and restoration of Nevada’s bat fauna to monitor and interpret bat activity at Red Hill.

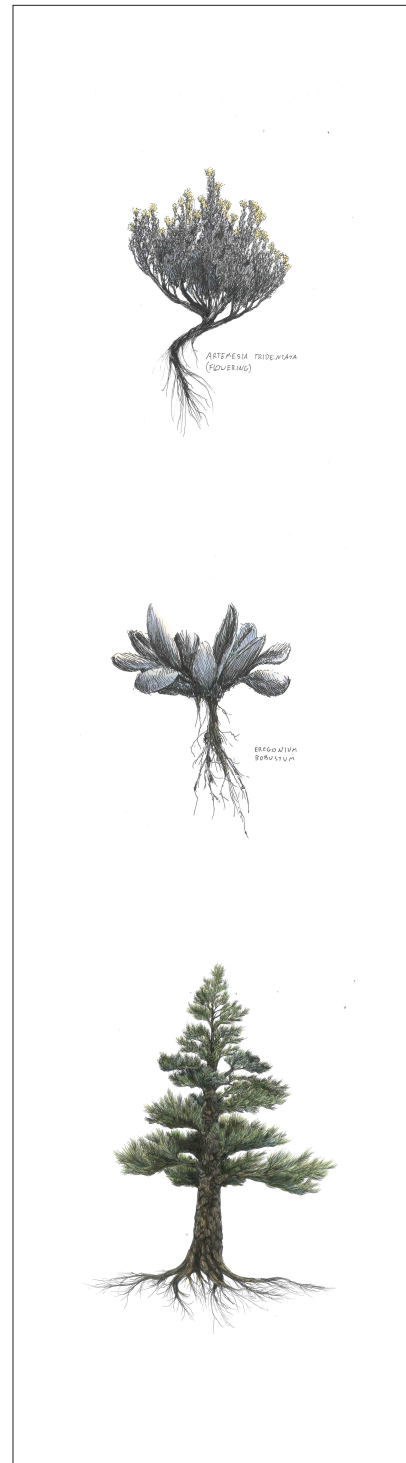
Other wildlife observed at Red Hill include: Mule Deer Limited Habitat (small resident populations), Red Tailed Hawk , White Tailed Kite, Western Burrowing Owl, Coyote, California Ground Squirrel , House Mouse Norway Rat, Montane Vole, Desert Spiny Lizard Great Basin Collared Lizard, Southern Desert Horned Lizard, Western Fence Lizard.

Sources:

1. Golden Eagle *Aquila chrysaetos*, National Geographic Society, 2012, <http://animals.nationalgeographic.com/animals/birds/golden-eagle>
2. Nevada Bats-Our Aerial Allies, Nevada Department of Wildlife, 2012, www.ndow.org

Biodiversity

Biodiversity is a term that often leads to many definitions or understandings. For the purposes of the Red Hill Master Plan, biodiversity is a measure of the number of vegetation communities and species that are present in the region. It is a way of understanding the great variety of plants, animals and insects that are present. Biodiversity support is how the landscape in the region supports this diversity of plants and animals and maintains their healthy populations. The vegetation communities that are included in this planning effort are defined by groups of plant communities that occur within areas that share common environmental traits, such as soils, climate, or other natural processes. These communities include both native vegetation communities and altered communities where development, fire or invasive species may have changed the landscape.



Biodiversity at Red Hill includes a number of vegetation communities. Artwork by TMCC Students.

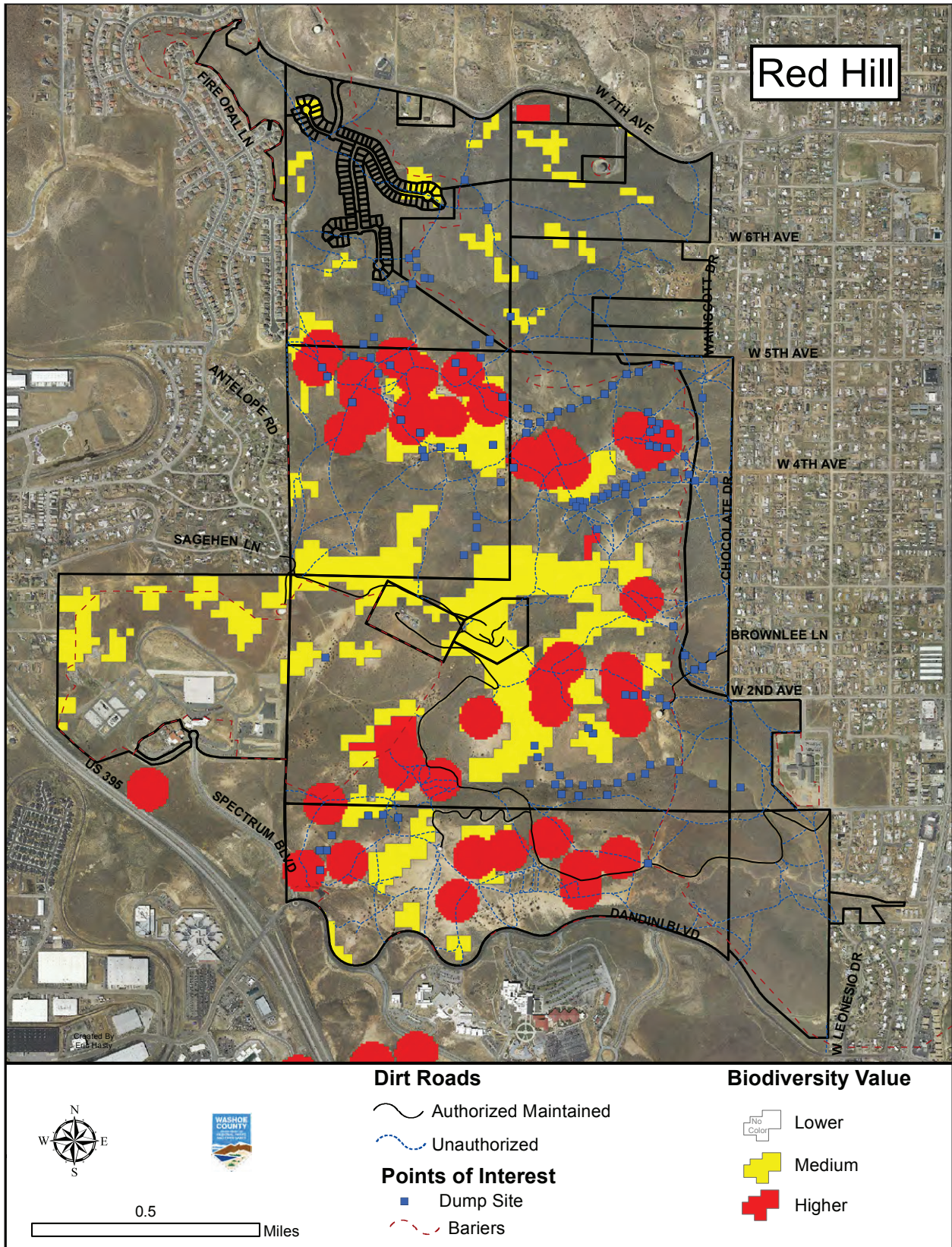


Figure E: Biodiversity Map

Fire History

Two small fires that burned 60 acres in the summer of 2011 and 8 acres in 2012 occurred on Red Hill and the surrounding properties. These fires destroyed much of the native habitat on the property as well as a seasonal riparian corridor. Although much of the vegetation that burned was native, such as sage brush and bitter brush, the presence of Downy Brome or “cheat grass” (*Bromus tectorum*) in the area suggests that there is a high possibility that this will quickly establish and out-compete any native plants that attempt to establish themselves. There is some evidence as of the spring 2012 that the cheat grass is already establishing itself and will soon dominate the burned area increasing the risk of another fire.

Seeding with a native mix using a drill seeder will help to combat the weeds that tend to establish themselves after a fire. Willow waddles can also help to establish some of the riparian vegetation that was lost in the riparian corridor, but further monitoring of the area has to be completed to ensure the area can support this type of vegetation.

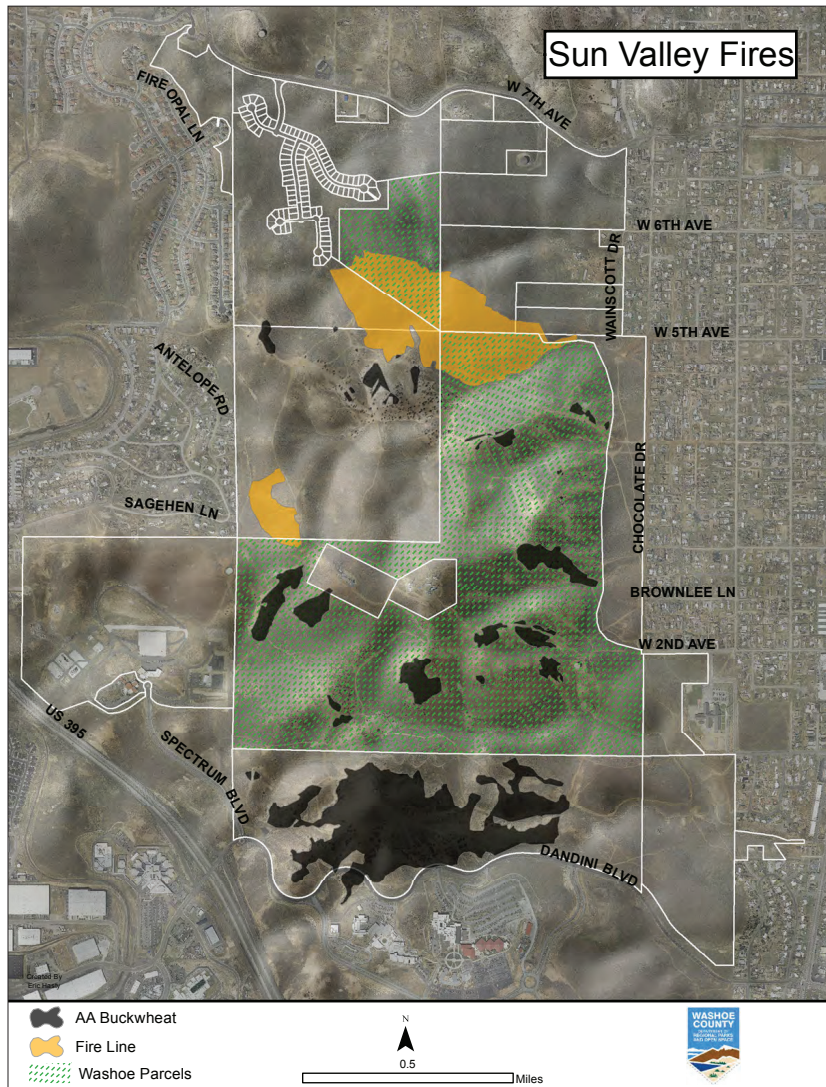


Figure F: Sun Valley Fires Map

Access and Impacts of Urban Interface

Red Hill and the surrounding properties provide open space in an area surrounded by urban and suburban housing. Unfortunately Red Hill's easy access is the main reason why much of its unique natural resources are being destroyed by unauthorized use of motorized vehicles, illegal shooting and dumping.

Red Hill and the surrounding property contain nearly 28 miles of unauthorized roads and social trails. Many of these roads run straight through the sensitive areas containing Altered Andesite Buckwheat (*Eriogonum robustum*). Although Red Hill is Washoe County property and considered a congested area, these roads also lead to several areas that show the discharge of fire arms to be a common occurrence. These roads also lead to erosion problems, and contribute to the nearly 200 illegal dumpsites identified within the properties.

Red Hill is prone to use by motorized vehicles, primarily due to more than 75 identified access points where motorized vehicles can enter the properties. To compound the problem, very few people know that motorized vehicle use is prohibited since there is a lack of signage and education of unauthorized use within the surrounding area.

There are authorized maintenance roads and utility access easements that are contained within the properties of Red Hill.

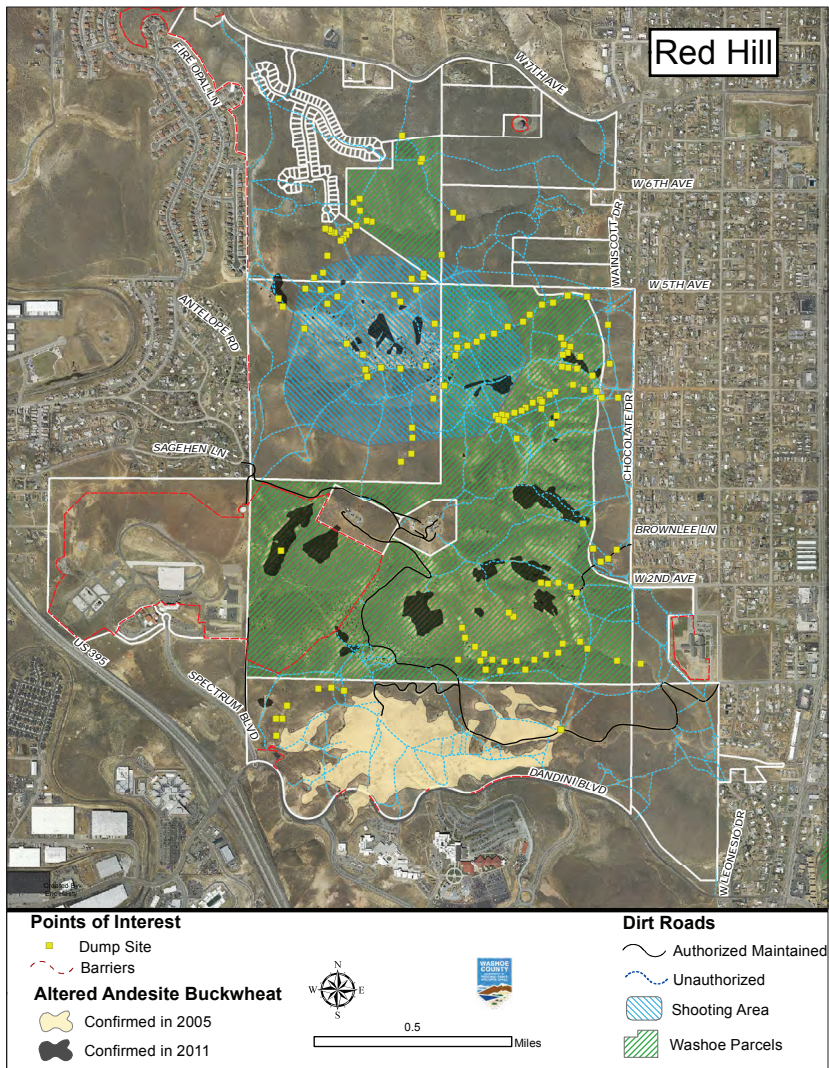


Figure G: Existing Dirt Roads and Dump Sites

These are used to gain access to the communication towers at the top of Red Hill, as well as roads that access water tanks, power lines. However, these roads have no access barriers and provide some of the many access points for additional unauthorized use on Red Hill. Installation of access barriers including fencing, gates and boulders would reduce vehicular access and associated degradation of the property. Providing pedestrian access from all neighboring communities should be a

consideration when planning installation of new barriers.

The removal and clean-up of all dumpsites as well as the closing and rehabilitation of all unauthorized motorized roads and access points would not only benefit the wildlife on Red Hill but it would provide the residents with a safe and beautiful place to discover and enjoy the unique views and hidden treasures contained within Red Hill.

Transportation

Sun Valley Western Arterial and Pyramid Way/ US-395 Connector

Additional transportation access improvements that could benefit Red Hill are included in the Regional Transportation Commission's (RTC) Regional Transportation Plan (RTP). According to the RTC, the Pyramid Way/US-395 Connector project would provide valuable access from Spanish Springs through Sun Valley to Dandini Boulevard. In addition, the West Sun Valley Arterial would provide direct access to Red Hill on the west side of Sun Valley. These transportation routes will not only benefit residents by providing alternate access in and out of Sun Valley, but will aid in reducing congestion in the Spanish Springs area.

Washoe County and RTC staff worked cooperatively during the master planning process, with the assistance of Sun Valley citizens, to refine the West Sun Valley Arterial's alignment adjacent to Red Hill, in an effort to protect the site's unique natural resources, while promoting access to Red Hill from the adjacent neighborhoods.

Safe access from the east will need to be a future design consideration with the West Sun Valley Western Arterial to ensure that the adjoining neighbors maintain pedestrian access to Red Hill. An at-grade or under crossing may be needed to ensure pedestrian access into the future.

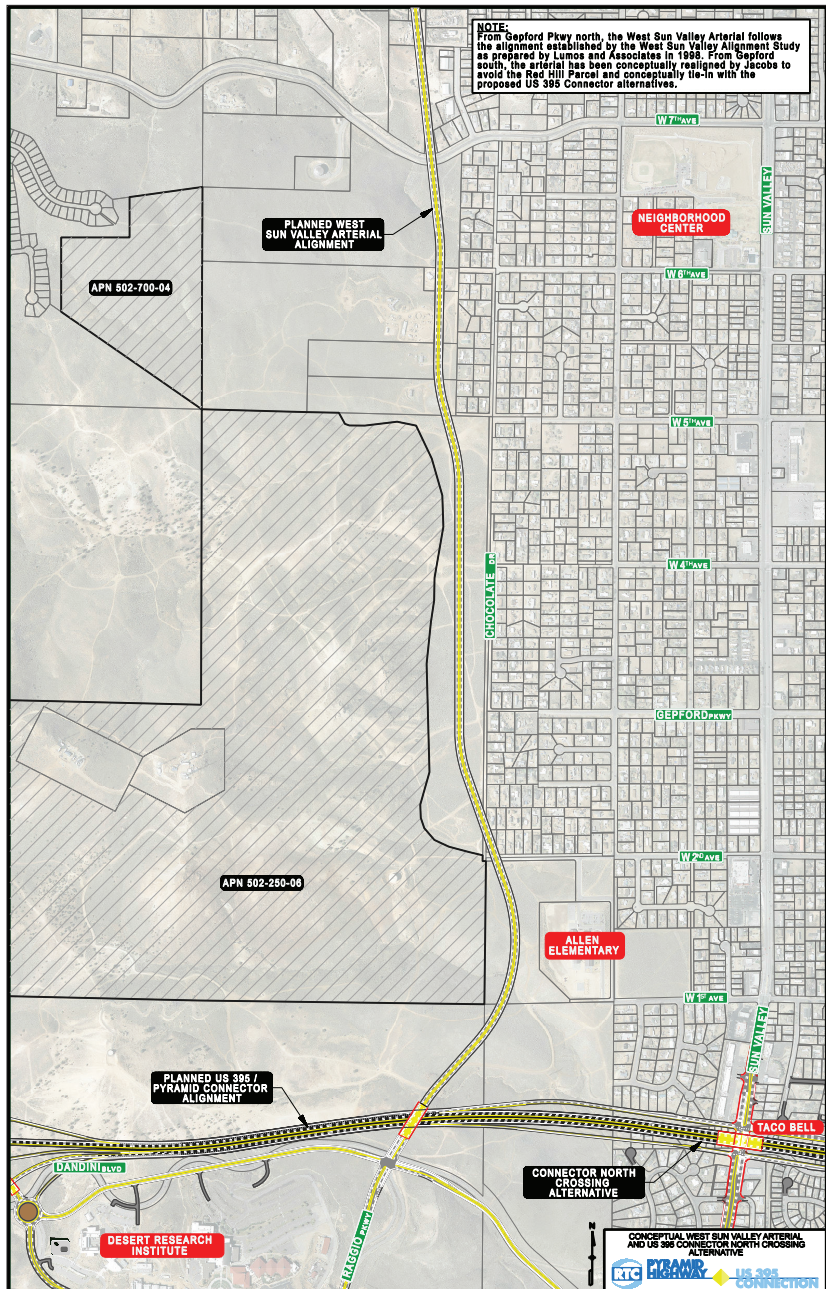
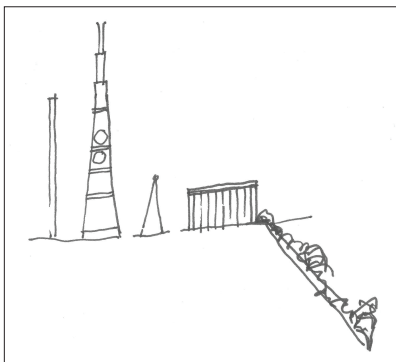


Figure H: Conceptual West Sun Valley Arterial and US-395 Connector



Design workshop participants gather at the top of Red Hill, which includes towers for cell phones, radios and television.



A preliminary concept for disguising the towers was developed during the design workshop.

Utilities

Access to power and water utilities exist on site, but are not formally established. No water rights are currently owned by Washoe County at Red Hill. Power lines exist along the southern property line, between Desert Research Institute (DRI) and Washoe County properties. Four water tanks are located within the Red Hill vicinity. Two are owned and operated by the Sun Valley General Improvement District (north and southeast of Red Hill) and two are owned and operated by the Truckee Meadows Water Authority (south and west).

Desert View Commercial Properties, LLC owns two parcels of land at the top of Red Hill and leases small pieces to wireless companies and organizations such as KNPB Public Television, AT&T Mobility, Verizon Wireless, Sprint PCS, T-Mobile, 92.1 The Wolf, and Radio Tricolor 102.1 FM (Spanish Language Radio). There are also several Wireless Internet Service Providers (ISP) broadcasting from Red Hill. They include High Desert Internet Services, Hot Spots, ClearWire and RollerNet. Desert View Commercial Properties monitors the site in person and has a live web cam that could be an opportunity for additional site monitoring or interpretive and educational opportunities.

Master Plan Process

In order to guide the planning process, the Red Hill Stakeholder Committee, which consisted of residents, agencies, surrounding property owners and community organizations, developed the following project goals and desired outcomes that guided the master planning process:

Goals

- Build a core planning team that serves as a coordinating group for the design charrette and supports plan development and implementation.
- Facilitate strategic community engagement for Red Hill, 438 acres of open space located in Sun Valley, NV.
- Facilitate a Washoe County sponsored design charrette that utilizes pro-bono design services from landscape architects and invited resource professionals to create a concept plan(s) that will be used by Washoe County to prepare the Red Hill Master Plan.

Desired Outcomes

- Vision statement and goals
- Youth engagement
- Conceptual plan(s) for Red Hill that identifies:
 - Non-motorized trails and recreational opportunities
 - Transportation needs and public access, including vehicular access, parking areas and trailheads
 - Restoration of wildlife habitat
 - Conservation areas for protection of sensitive plant species
 - Viewing areas that take advantage of natural outcroppings and scenic vistas
 - Interpretive sites and educational opportunities
 - Trail access between Red Hill, adjacent neighborhoods, community destinations (schools), regional trails and DRI
 - Mitigation of conflicts with adjacent property owners (i.e. shooting at public safety training center) and safety issues (i.e. abandoned mines, dumping, congested area shooting)
 - Alternative OHV routes and acquisition needs
 - Strategies for plan implementation, long-term stewardship, funding and environmental considerations



Over 60 students from Lois Allen Elementary School participated in interactive planning workshops.



Sun Valley residents and local landscape architect share ideas for the future of Red Hill.

Community Engagement

Community engagement included a series of stakeholder committee meetings, youth workshops, community meetings, an on-line survey, a two-day design workshop and meetings with individual property owners, as outlined below:

Stakeholder Committee Meetings *(January - October 2011)*

A stakeholder committee, consisting of 12-15 residents, community organizations, local and regional agencies and surrounding property owners, reached agreement on planning goals and desired outcomes, provided input on agendas and outreach materials for workshops and meetings, and coordinated the logistics for the 2-day Design Workshop.

Youth Workshop *(May 2011)*

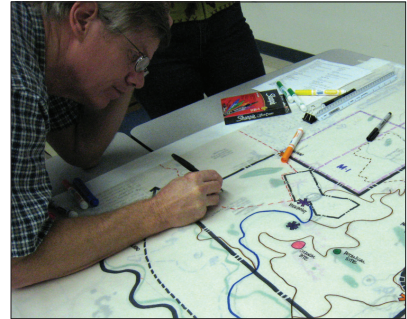
Over 60 sixth-grade students from Lois Allen Elementary School participated in youth workshops. Students developed a shared understanding of history, geology and natural resource values at Red Hill. Through an interactive exercise using an Audience Response System, students shared their vision for Red Hill, including priority amenities, activities and ideas for trail connections. As shown in Appendix C, students identified walking/hiking, biking, horseback riding and picnicking as the most desirable future activities at Red Hill. Students were also interested in a trail connection from Lois Allen Elementary School to Red Hill and using the site for future field trips.

Community Meeting *(June 2011)*

Neighbors were invited to learn about resources, opportunities, challenges and the need for planning at Red Hill. Results of the youth workshop were also shared with the community. Through a small group exercise, residents shared their concerns and ideas for Red Hill including current recreational uses, access points, and future recreational uses and amenities. As shown in Appendix D, residents voiced a need for improved signage and way-finding, trails and amenities. While not permitted at Red Hill due to deed restrictions, the community voiced a need for motorized trails and an education campaign to direct motorized use away from Red Hill. Ideas for long-term maintenance and partnerships were also expressed.

Online Survey *(June-August 2011)*

To complement the community meeting, similar input regarding current and desired future recreational uses was gathered through an on-line survey, completed by 34 individuals. As shown in Appendix E, top current activities are hiking and exploring nature. Biking trails, hiking trails, natural areas, trailhead parking and viewing areas were identified as priority elements for the Red Hill plan.



The Red Hill plan was developed through an intensive two-day design workshop that included a field trip, design work by three interdisciplinary teams, and community meetings.

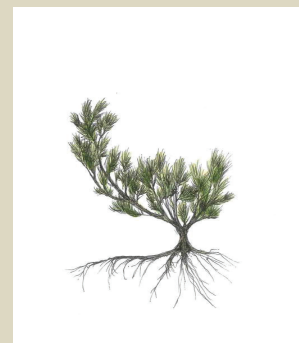
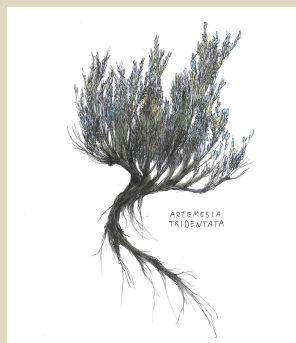
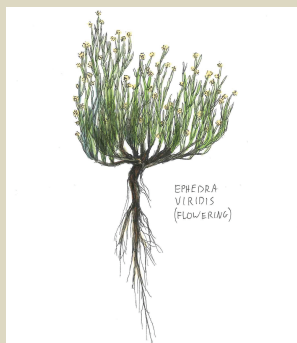
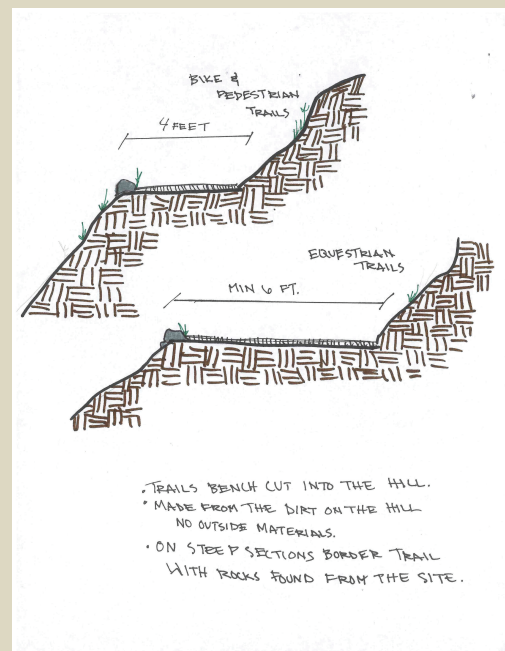
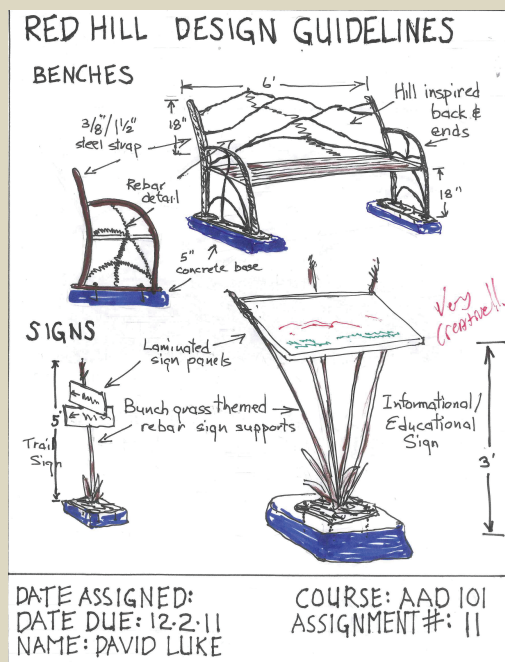
Design Workshop (October 2011)

Over 40 residents, students, agency staff and community partners came together for a two-day design workshop to creatively and collaboratively address the future of Red Hill. Following an orientation and site tour, design teams were challenged to design a non-motorized trail system, identify trailheads, restoration and conservation areas, create learning opportunities, and address recent signs of misuse (i.e. illegal dumping, off road vehicles, unauthorized trails) that threaten unique cultural and natural resources. The community was invited to participate during two meetings, where neighbors reviewed conceptual plans and provided feedback. Results included a conceptual plan, illustrative designs, a restoration plan, and implementation strategies, which are included in the Master Plan.

Truckee Meadows Community College, Design with Nature Class Project

Students enrolled in the Architectural Design program at the neighboring Truckee Meadows Community College were active participants in the Red Hill master planning process. Professor Kreg Mebust and the students enrolled in his Design With Nature course, used Red Hill for numerous class projects due to the close proximity of the site to the school. Design With Nature introduces the concepts of natural systems and their influence on human activity and the living environment; the course reviews the historical context and cultural adaptations and introduces the basic management and use of the natural systems; and reviews natural, biological, cultural and design management philosophies. Students not only participated in the design workshop, but also assisted the efforts through opportunity and constraints mapping, site and slope analysis, and provided details for trail construction and desired park amenities.

Proposed Design Concepts and Sketches



Following the design workshop, Truckee Meadows Community College students used Red Hill for class projects including trail design, the development of design guidelines, and creation of sketches of native vegetation.

Property Owner Meetings (November 2011 – February 2012)

Following the Design Workshop, County staff held meetings with individual property owners in order to review and seek agreement on the conceptual plan and identify other opportunities, such as additional trail connections and to ensure that proposed plans at Red Hill would not adversely impact future plans of adjacent property owners.



The Red Hill project and related community outreach efforts were featured several times in the Reno Gazette Journal.

Vision and Goals

The following vision and goal statements, based on Planning Goals and Desired Outcomes and input received through community engagement, served as a guide for the conceptual plans and recommendations developed at the Red Hill Design Workshop.

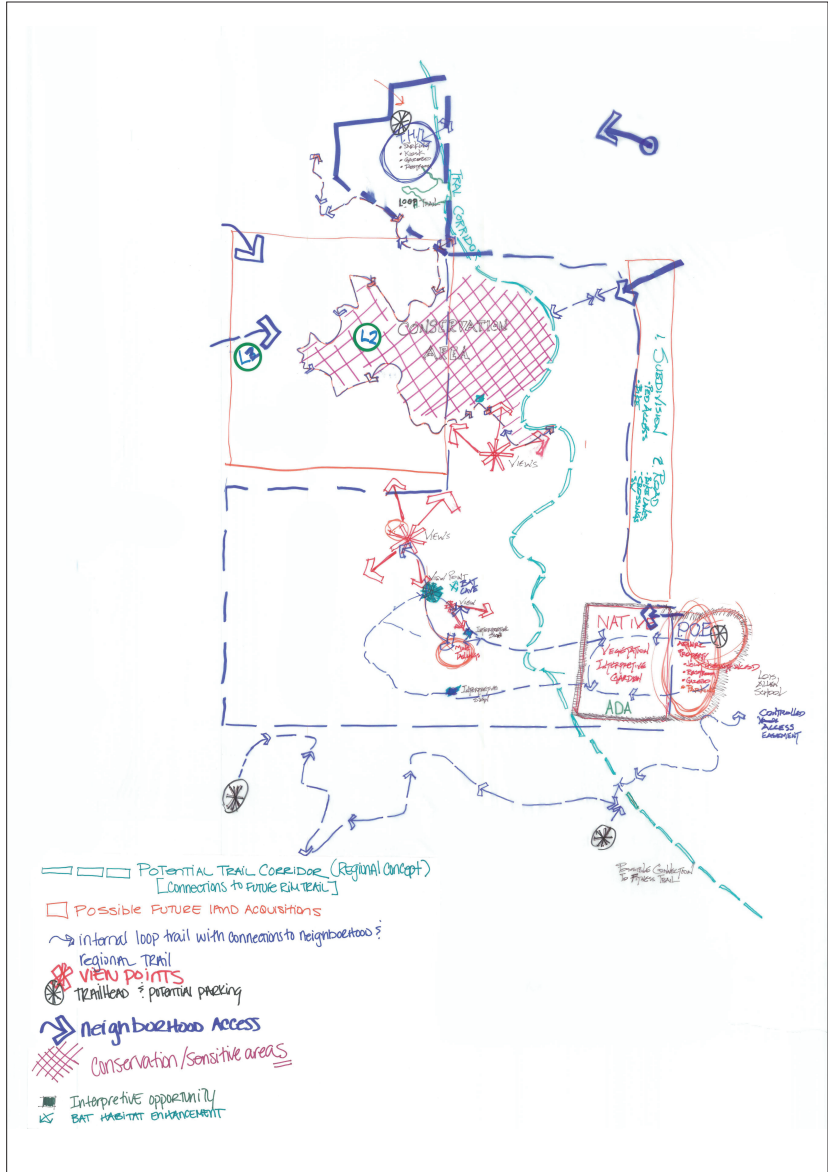
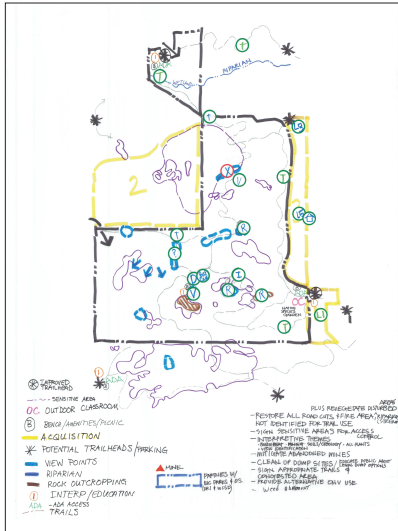
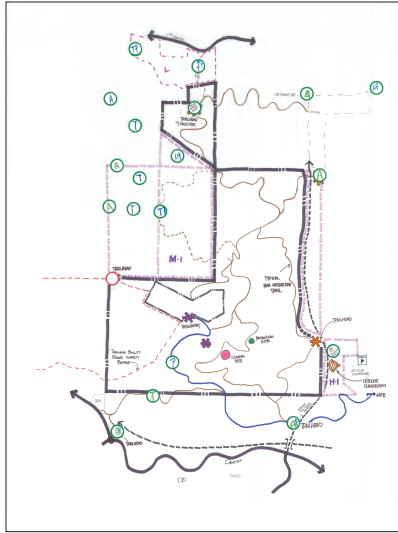
Vision

Red Hill is Sun Valley's premier location for enjoying natural open space, trails and outdoor recreation. Sensitive lands at Red Hill are protected and the community stewards this unique landscape and its rare natural resources.

Goals

- Conserve sensitive lands that provide habitat for sensitive plants and animals.
- Designate a non-motorized trail system for walking, biking, horseback riding, running and dog walking, including trailheads, pedestrian access points and connections to adjacent neighborhoods, community destinations and regional trails.
- Identify an alternative off-road route from nearby neighborhoods to Bureau of Land Management public lands and provide directional signs to permitted areas.
- Provide passive recreation opportunities, such as viewing areas of natural outcroppings, scenic vistas, and wildlife, quiet areas for reflection, picnic areas, gazebos and shade shelters, or native plant gardens.
- Protect Red Hill from further site disturbance through education, signs, and barriers.
- Clean up areas of misuse and restore impacted lands.
- Develop educational opportunities, such as interpretive sites, an outdoor classroom and day camps.
- Encourage youth to enjoy and become stewards of Red Hill in collaboration with nearby schools.
- Identify strategies and develop partnerships for plan implementation and long-term stewardship.





Three interdisciplinary teams worked together to create preliminary design alternatives, which were merged together into one conceptual plan.

Preliminary Design Alternatives

During the Design Workshop, participants completed a field trip and orientation in order to develop a shared understanding of the existing opportunities and constraints. Using the community's vision and goals and a list of potential design/program elements as a framework, three teams, each consisting of a landscape architect, facilitator and 10-12 community members and technical experts, developed the preliminary design alternatives shown above. While specific locations may differ, the preliminary designs include the following common elements: non-motorized trails with connections to adjacent neighborhoods and key destinations (i.e. viewpoints and rock outcroppings), trailheads, the identification of key land acquisitions, recreational amenities, such as outdoor classrooms, and concepts for signage and interpretation.

Final Concept Plan

Teams worked together to combine ideas from the preliminary concept plans into one final concept plan, which includes: 1) protection of sensitive lands, 2) identification of access points and trailheads, including "Gateway" trailheads, 3) a non-motorized trails system that leads to points of interest, avoids sensitive lands, and connects to the future Sun Valley Rim Trail, 4) interpretive and educational opportunities, 5) potential acquisitions, and 6) locations of amenities, including an outdoor classroom.

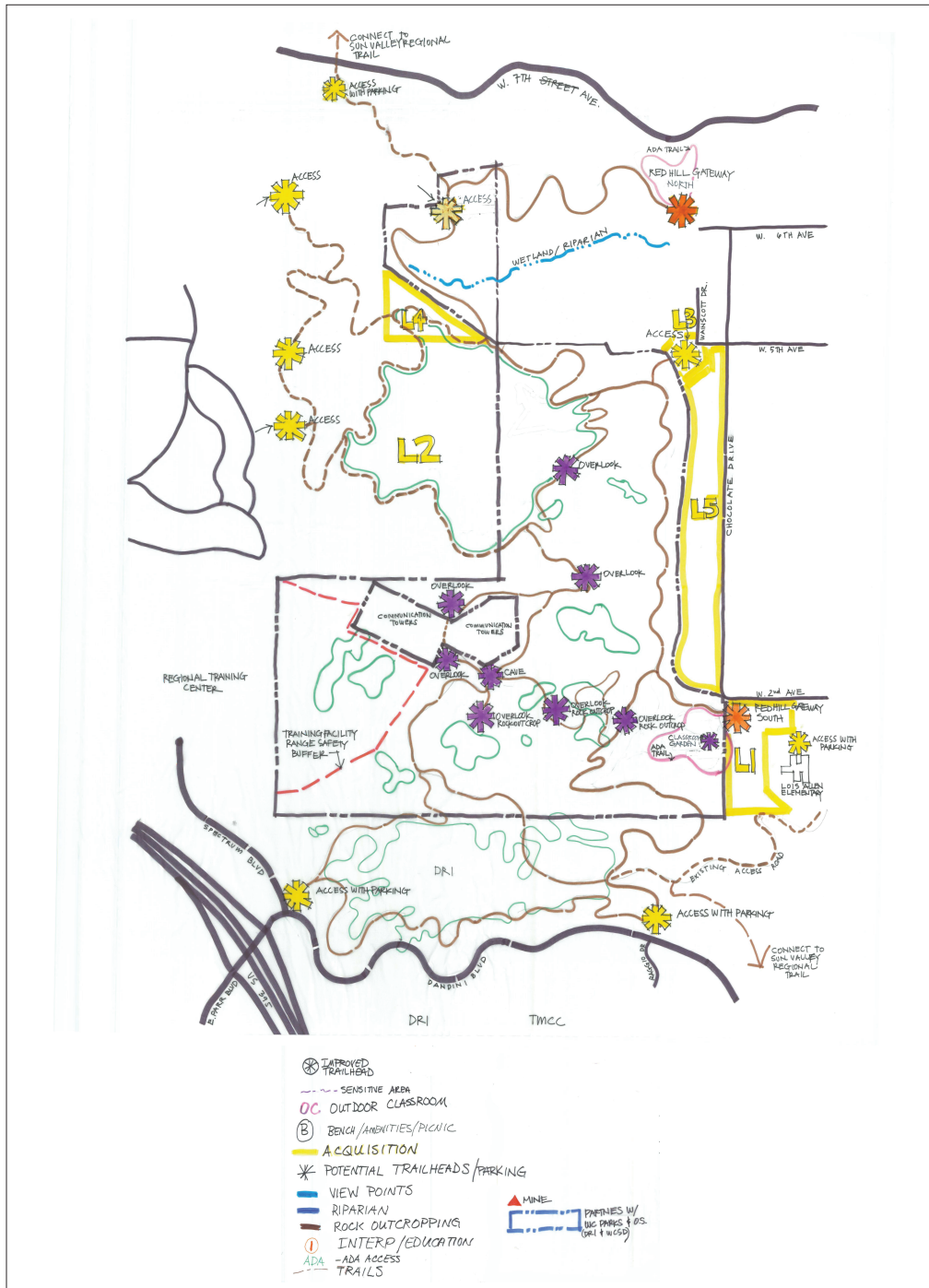


Figure 1: Final Conceptual Plan

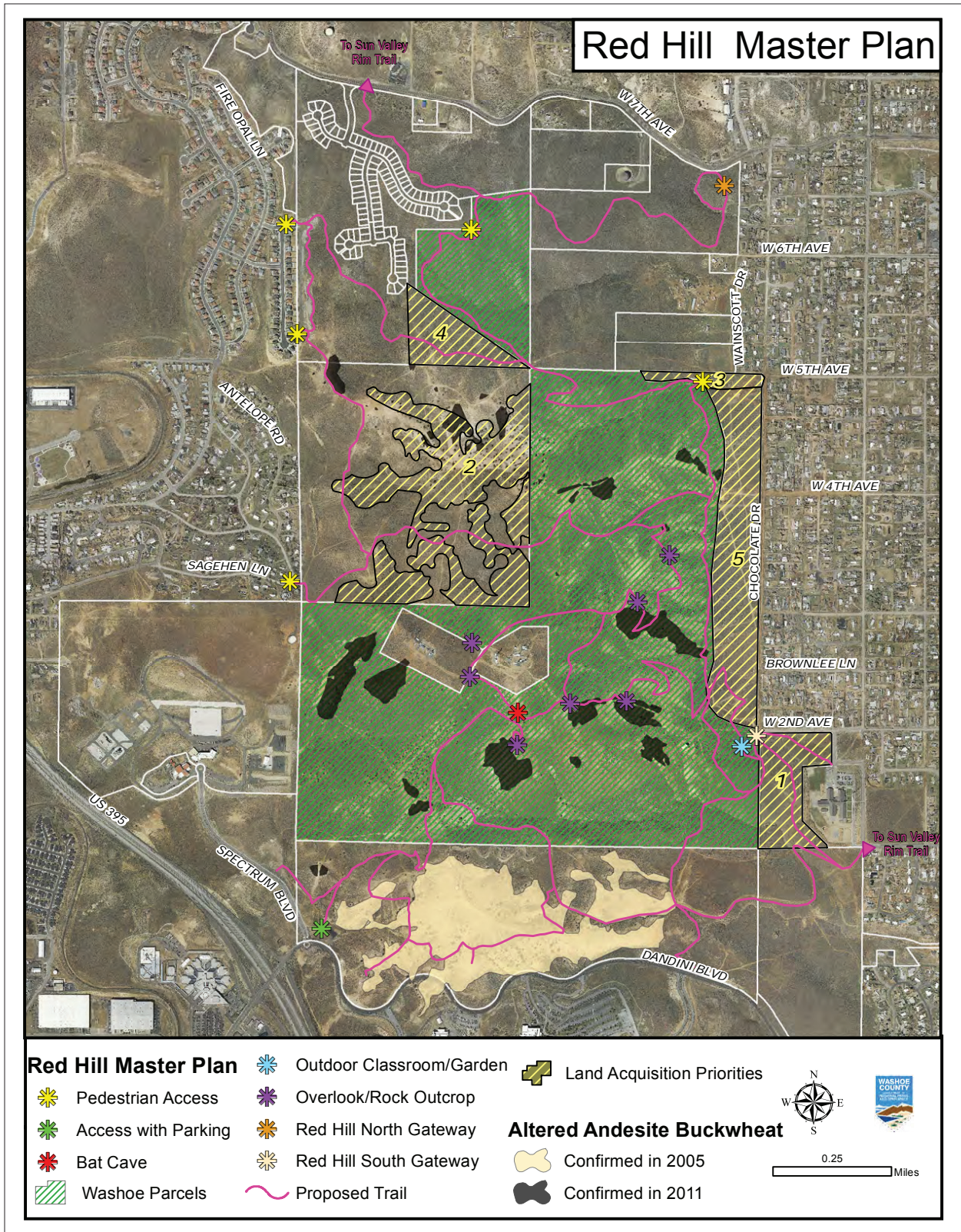


Figure J: Final Conceptual Plan (Digitized Version)

Design Concepts

Design concepts developed during the workshop provide ideas for future entry features, trailheads, signs, trail amenities, and trail crossings. The following sketches represent conceptual designs that will be refined further during detailed design and engineering.

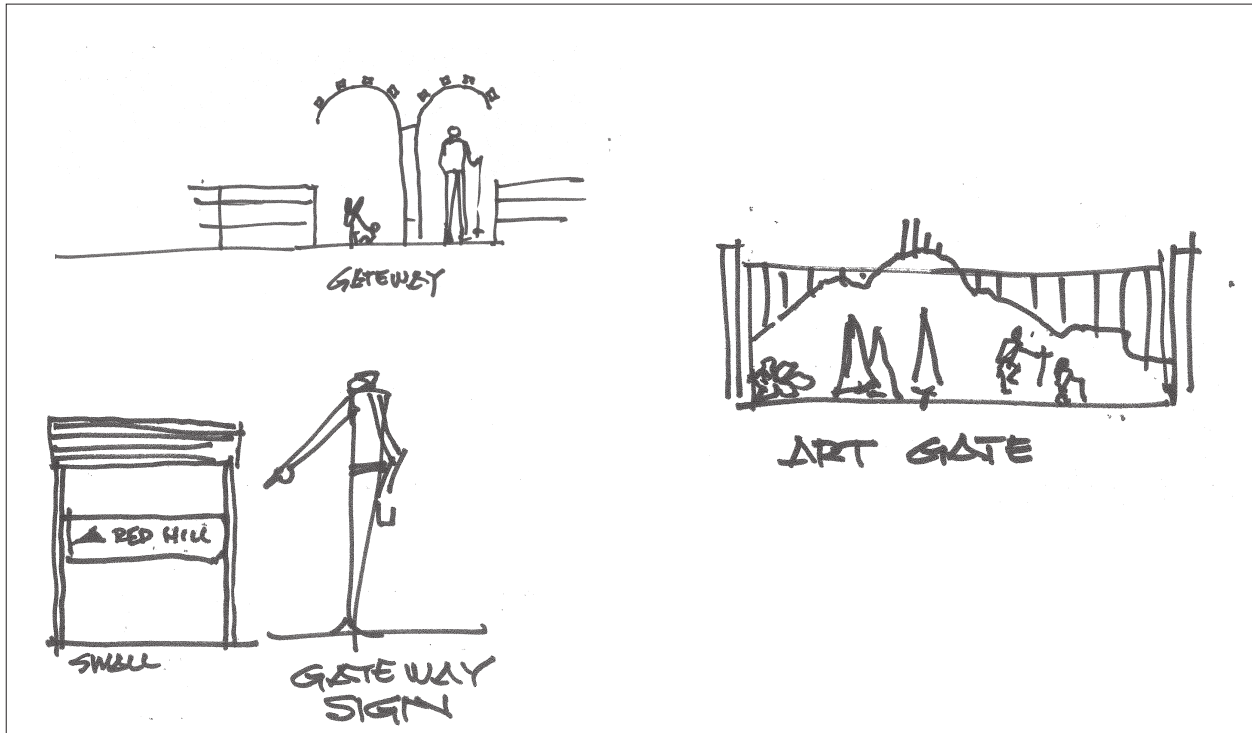


Figure K: Entry Features

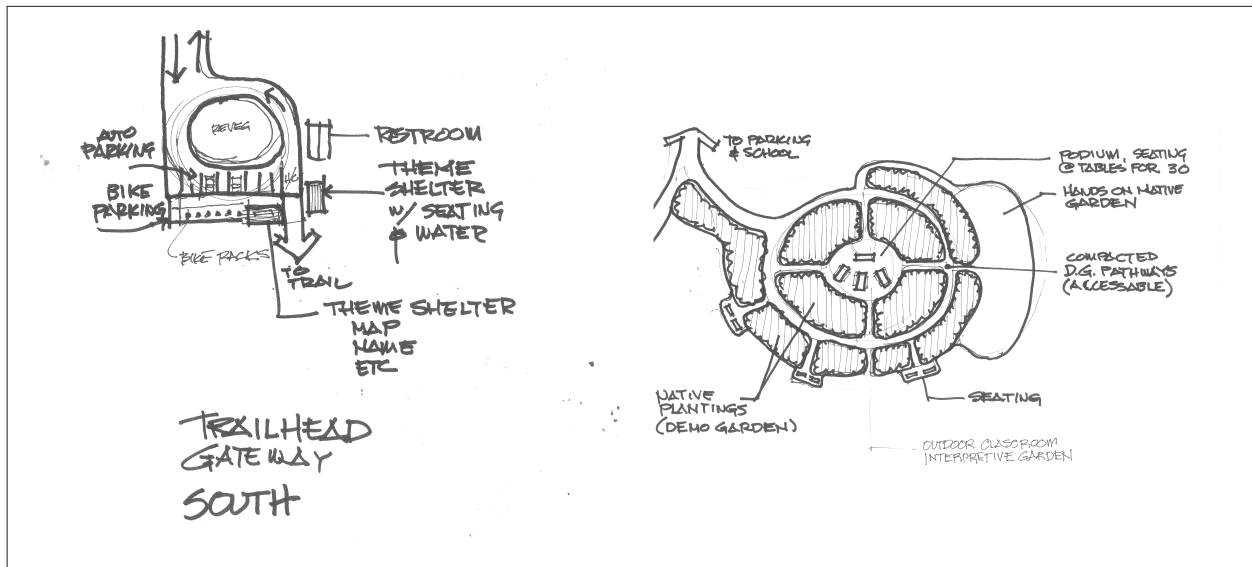


Figure L: Gateway Trailhead South (primary): The southern gateway would be located near the Lois Allen Elem. School and is envisioned to be an “experience within itself”; visitors would enjoy accessible trails and learn about Red Hill through an outdoor classroom and interpretive garden.

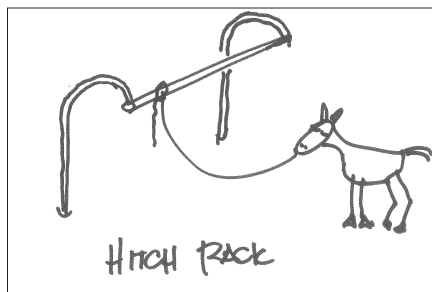
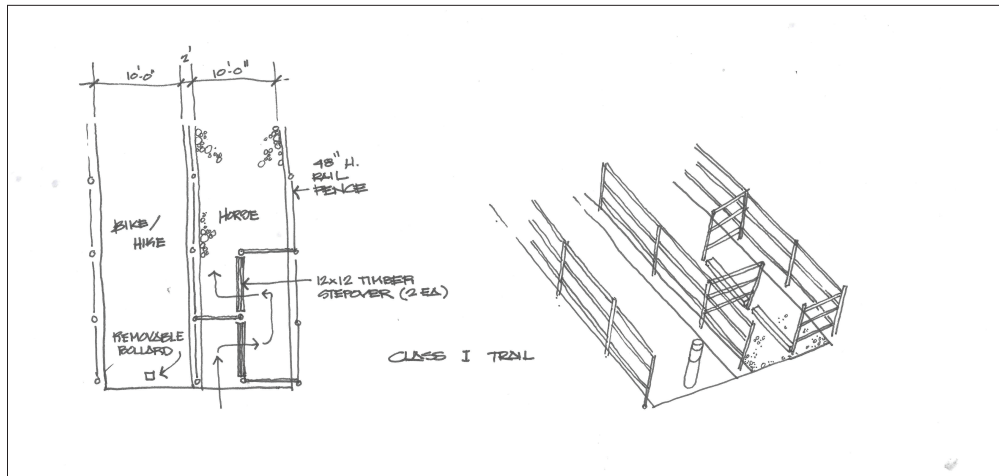


Figure M: Equestrian Facilities: The non-motorized trails system would accommodate hikers, bikers and equestrian users with connections to the Sun Valley Rim Trail, Lois Allen Elementary School, and adjacent neighborhoods, including equestrian properties.

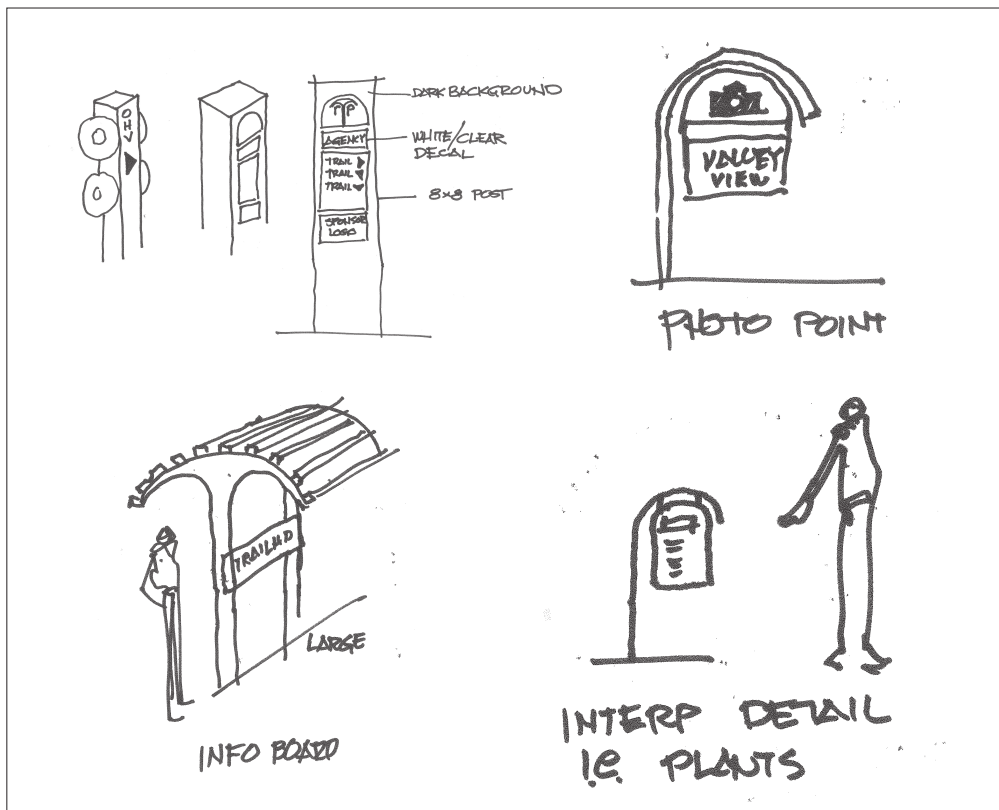


Figure N: Sign Concepts

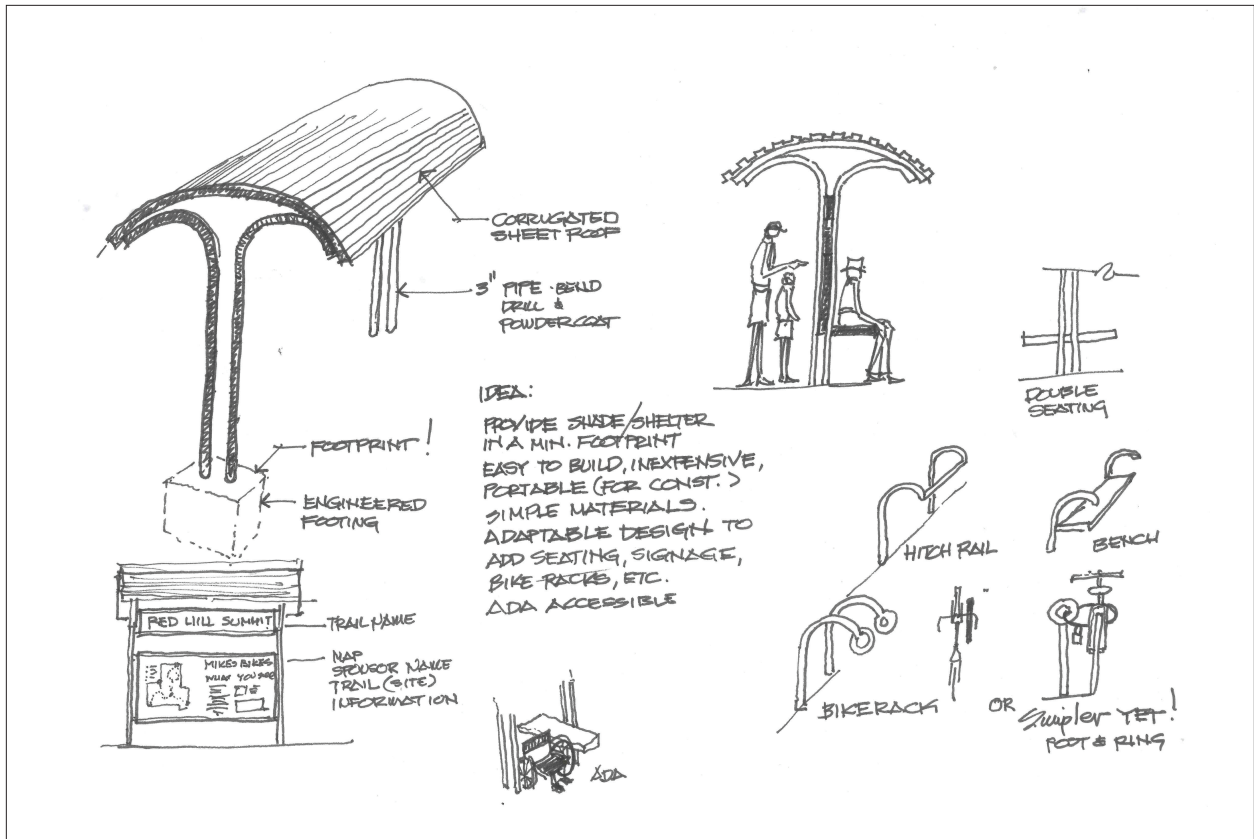


Figure O: Trail Amenities

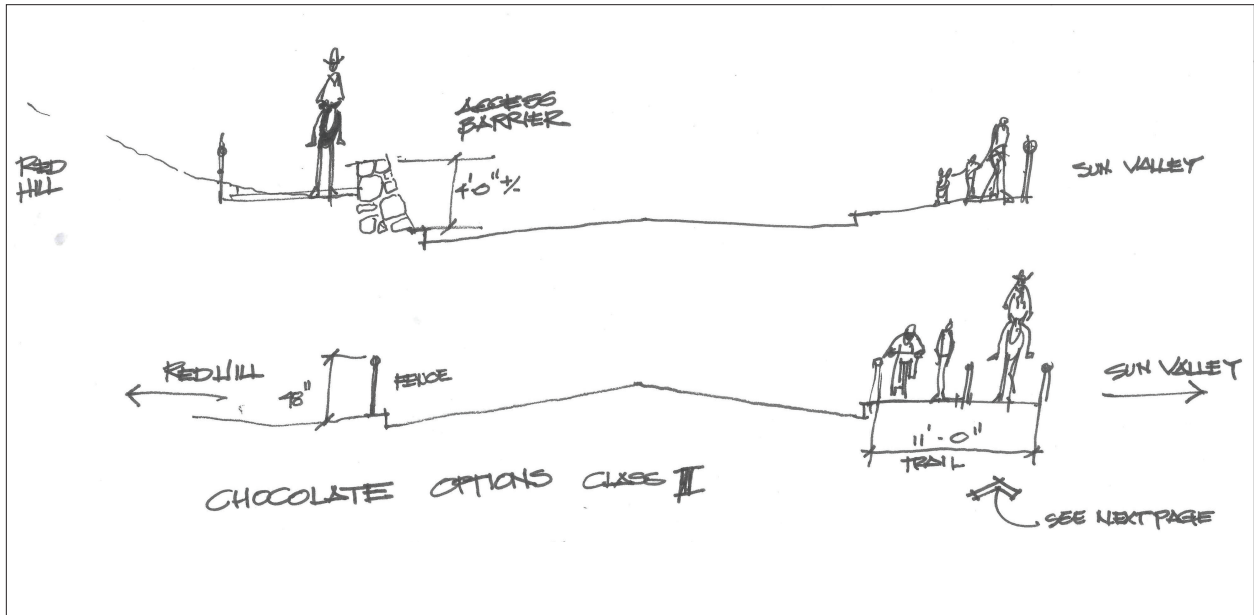


Figure P: Typical Trail Cross Section

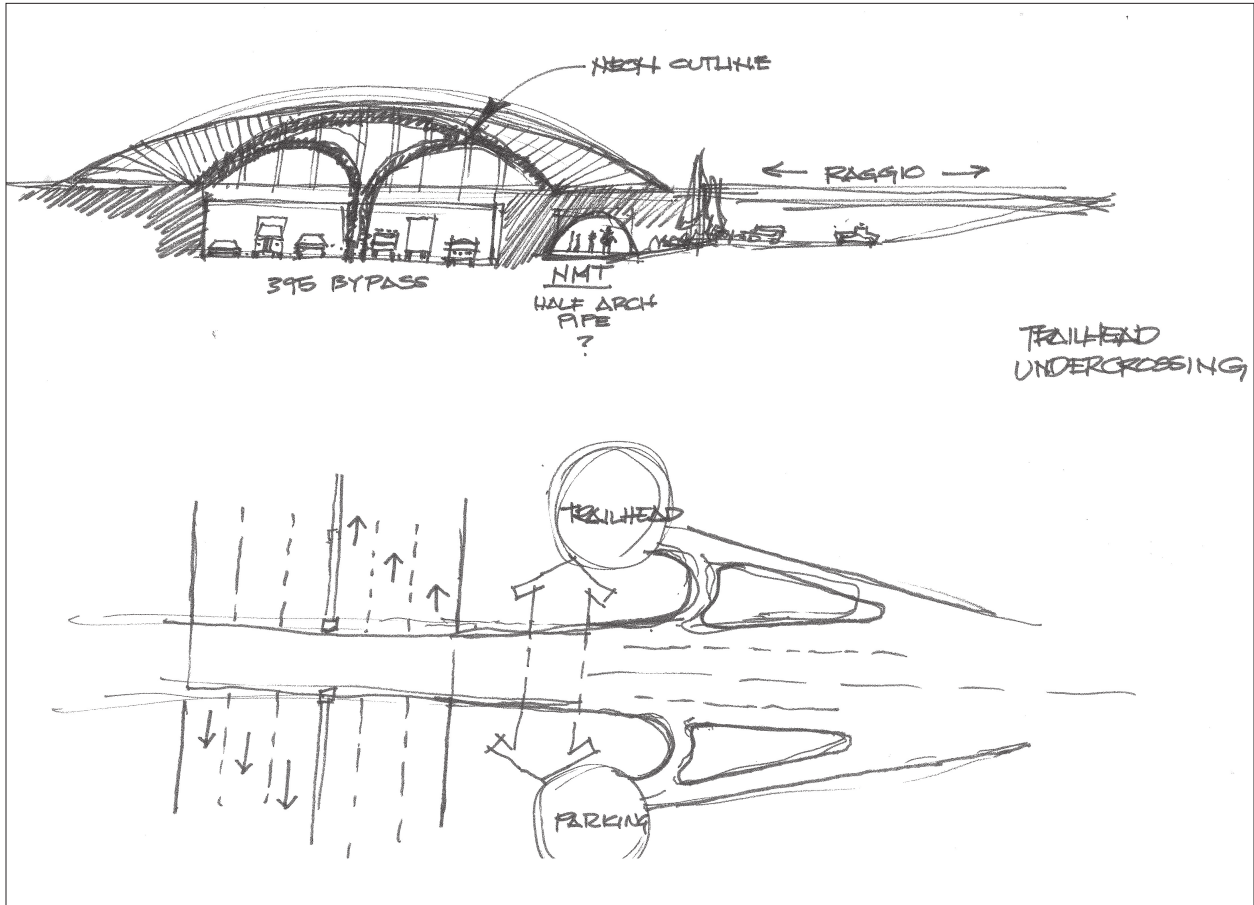


Figure Q: Trailhead Undercrossing at US-395: In order to increase the comfort and safety of trail users and accommodate access for adjacent residents, an undercrossing is proposed at US-395.



Karin Lin, National Park Service RTCA intern, works with the Restoration Team to complete a plan for restoring disturbed areas.

Restoration Plan

Based on an inventory of existing roads and trails, existing disturbed areas are compared to locations of the altered andesite buckwheat, resulting in the identification of priority restoration areas (shown in green below). With approximately 34-acres of roads to be decommissioned and more than 60-acres in need of rehabilitation from fire, restoration is a top priority at Red Hill. There are also significant needs for protection of sensitive areas and erosion control throughout the area.

Preliminary budgetary estimates (2012) for restoration include:

Road Decommissioning: Approx. 2500.00- 3000.00/acre x 35 acres = \$105,000

Broadcast and harrow: Approx. 900.00/ acre x 60 acres= \$54,000

Herbicide treatments: Varies. Estimate \$400-500/acre

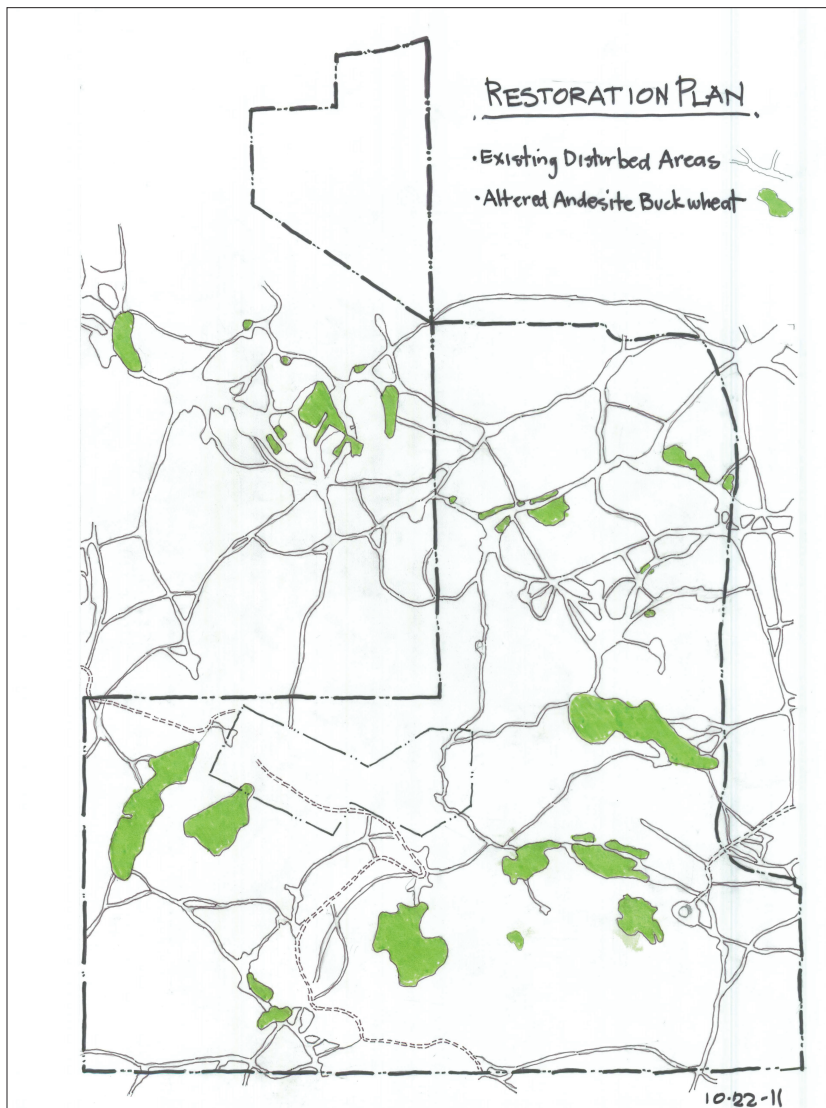


Figure R: Restoration Plan

Restoration Plan Steps

1. Identify all trails, roads and areas of disturbance using aerial photos.
2. Ground truth preliminary map in the field using GPS.
3. In conjunction with trails map, decide what trails and roads to keep, close and rehab. Close all trails leading and through buckwheat habitat and unsafe areas.
4. Meet with Fire District to identify primary access needed for wildland fire.
5. Identify major existing access points, which are not needed by fire or for trailhead/pedestrian access, and close through gates, boulders, fencing, jersey barriers or a combination.
6. Identify native sage/grass communities that could benefit by revegetation/rehabilitation, such as around the school for nature trails and at gateways at north and south.
7. Reseed 2011 fire area.
8. Restore fire riparian areas.
9. Restore north gateway riparian area for demonstration garden.
10. Restore hill climb areas through jute netting and seeding.
11. Install congested area signs for shooting.
12. Install illegal dumping signs.
13. Initiate public education program on OHV closure, dumping, shooting and restoration.
14. Coordinate with Interpretive Plan.
15. Direct OHV use away from the project to an acceptable area in coordination with BLM.
16. Coordinate with Washoe County School District and Keep Truckee Meadows Beautiful on dump site clean-ups.
17. Initiate an "adopt a park" program with Lois Allen Elementary School.

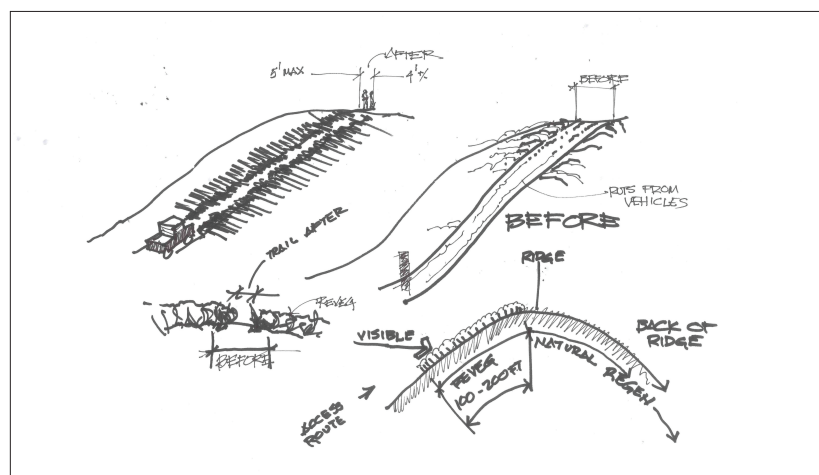


Figure 5: Restoration Detail

Interpretation and Education

While Red Hill is rich in natural resource and scenic values, few people are aware of the resources available at Red Hill. Additionally, there is a need to increase awareness of allowed uses in order to control illegal uses that threaten habitat and species at Red Hill. The following potential interpretive themes, messages and programs are intended to provide a foundation for a future Interpretation and Education Plan, which will include: 1) goals for interpretation and education, 2) final themes and messages, 3) media and facilities (i.e. signs) for delivering the themes and messages.

Potential Interpretive Themes and Messages

- Birds: Eagles, raptors and other species
- Plants: Buckwheat (sensitive and endemic to this area), Hookers Balsamroot, chocolate smelling flower tied to the naming of Chocolate Drive, Morman Tea, general plant ecology with information related to spring perennials
- Home Gardening and Water Conservation: Native plants need watering in the first year and after the first year irrigation may be turned off. Encourage the community to grow native plants and conserve water.
- Wildlife: insects, coyotes, bats, lizards, snakes, small mammals, rabbits, skunks and raccoons
- Backyard Wildlife
- Wildlife at Urban Interface
- Restoration
- Mining: Mining in late 1800s through 1940s occurred at Peavine and Red Hill. Mining may have been for talc or copper (unknown at this time).
- Rock Formations and Geology
- Viewpoints and Surrounding Landscape: Slide Mountain and Peavine, geothermal activity, volcanic activity
- Soil Types
- Plant Diversity: Convey the relationship between plant diversity and elevation
- Watersheds
- Towers (on top of Red Hill): purpose of towers, "what are the waves and where to they go", electromagnetic fields

Potential Interpretive Facilities

- Native Plant Garden
- Outdoor Classroom
- Signs and Kiosks
- Bat Cave in abandoned mine

Potential Educational Messages

- Redirect illegal uses such as ATV, shooting and dumping to appropriate locations
- Outdoor etiquette
- Shooting – congested area, no shooting allowed
- Negative effects of erosion from illegal motorized use
- Penalties for motorized travel, shooting or dumping
- Include website/QR code for more information

Potential Programs

- Art in the Park
- Birding Tours
- Day Hikes, led by local partners
- Class Field Trips from Lois Allen Elementary School
- "Red Hill Rovers" trail watch program

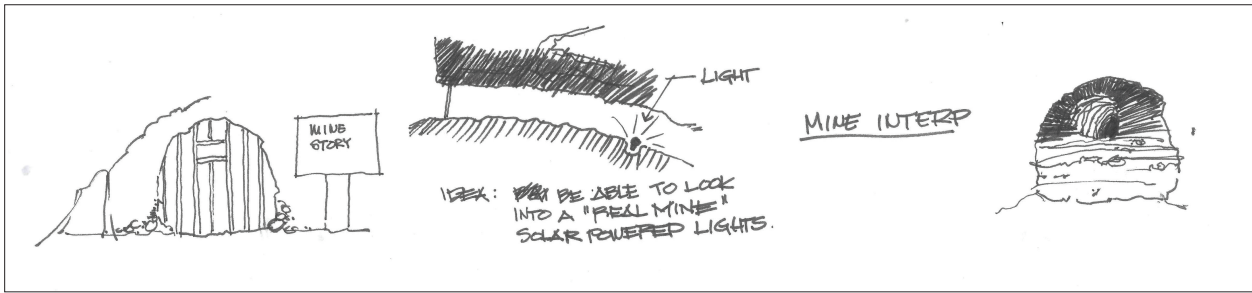


Figure T: Mining Interpretation Concept

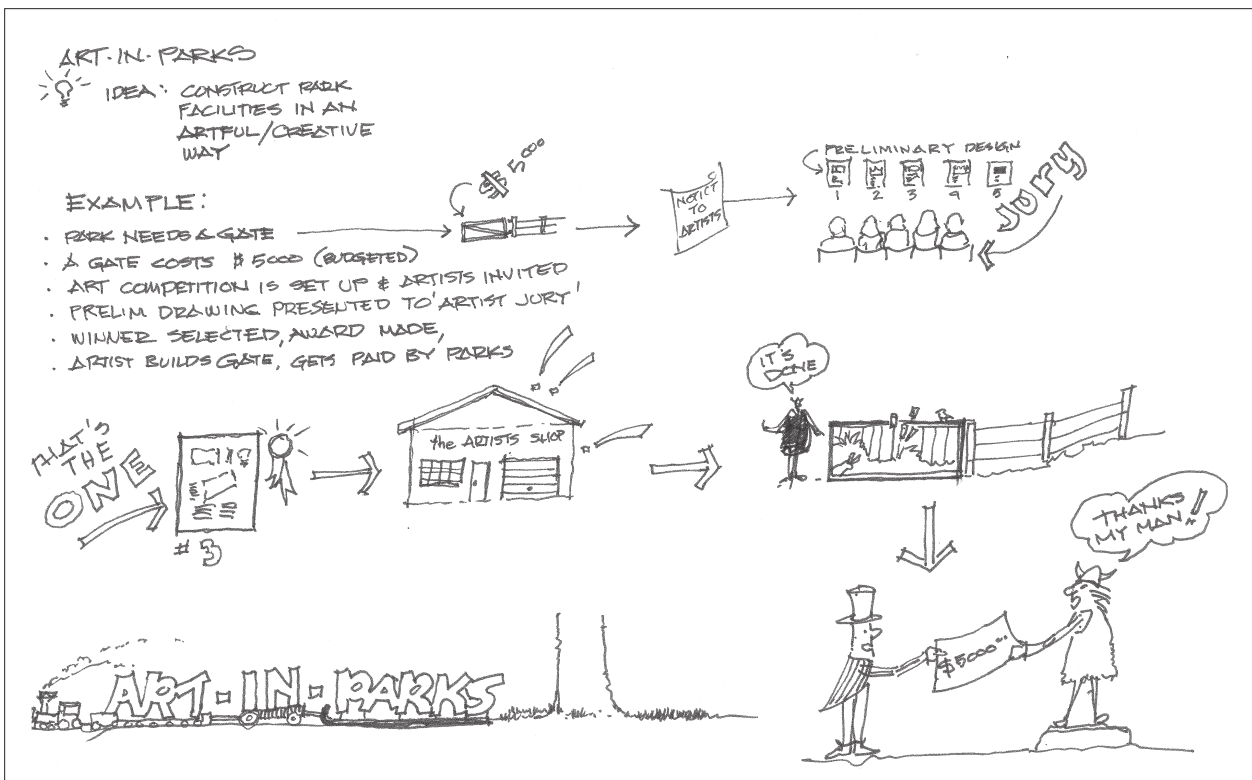


Figure U: Art-in-Parks Program Concept

Funding

This geographic area of unincorporated Washoe County has a particular challenge in the ability to construct and improve parks due to the restrictive structure of the residential construction tax (RCT) assessments on mobile homes. While new home construction is assessed up to \$1,000, mobile homes are only assessed a maximum of \$88. Due to the high percentage of mobile homes in Sun Valley and Panther Valley, very limited RCT is available to assist in the funding of park projects. Alternative funding sources will be needed to augment existing RCT funds to adequately accommodate the future park and recreation needs at Red Hill. Potential funding resources include:

Land and Water Conservation Fund: The Land and Water Conservation Fund (LWCF) Act of 1965 was enacted to assist in preserving, developing, and assuring accessibility to all citizens for outdoor recreation purposes. LWCF provides matching grants to local governments for development of public outdoor recreation areas and facilities. Since 1967, Washoe County, through its Department of Regional Parks and Open Space, has received over \$2,000,000 from LWCF to enhance Washoe County's park system and numerous locations. LWCF is administered locally through the Nevada Division of State Parks and requires a 50% match. LWCF requires National Environmental Policy Act (NEPA) compliance.

Brownfield Program: Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. The United States Environmental Protection Agency's Brownfields Program provides direct funding for brownfields assessment, cleanup, revolving loans, and environmental job training. To facilitate the leveraging of public resources, EPA's Brownfields Program collaborates with other EPA programs, other federal partners, and state agencies to identify and make available resources that can be used for brownfields activities. In addition to direct brownfields funding, EPA also provides technical information on brownfields financing matters.

Recreational Trails Program: The Recreational Trails Program (RTP) is a Federal-aid assistance program to help states provide and maintain recreational trails for both motorized and non-motorized recreational trail use. The program provides funding for all kinds of recreational trail uses, such as pedestrian uses (hiking, running, wheelchair use), 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. Nevada State Parks administers the RTP in Nevada and requires a 20% match. Each year the Federal Highway Administration distributes funds to each state based on gasoline tax revenue from registered off-road vehicles in the state. Nevada received approximately 0.6% of the total apportionment or \$1 - \$1.5 million. RTP requires National Environmental Policy Act (NEPA) compliance.

National Fish and Wildlife Foundation Native Plant Conservation Initiative: The Native Plant Conservation Initiative (NPCI) grant program is conducted in cooperation with the Plant Conservation Alliance (PCA), a partnership between the Foundation, ten federal agencies, and more than 270 non-governmental organizations. PCA provides a framework and strategy for linking resources and expertise in developing a coordinated national approach to the conservation of native plants. Since 1995, the NPCI grant program has funded multi-stakeholder projects that focus on the conservation of native plants and pollinators under any of the following 6 focal areas: conservation, education, restoration, research,

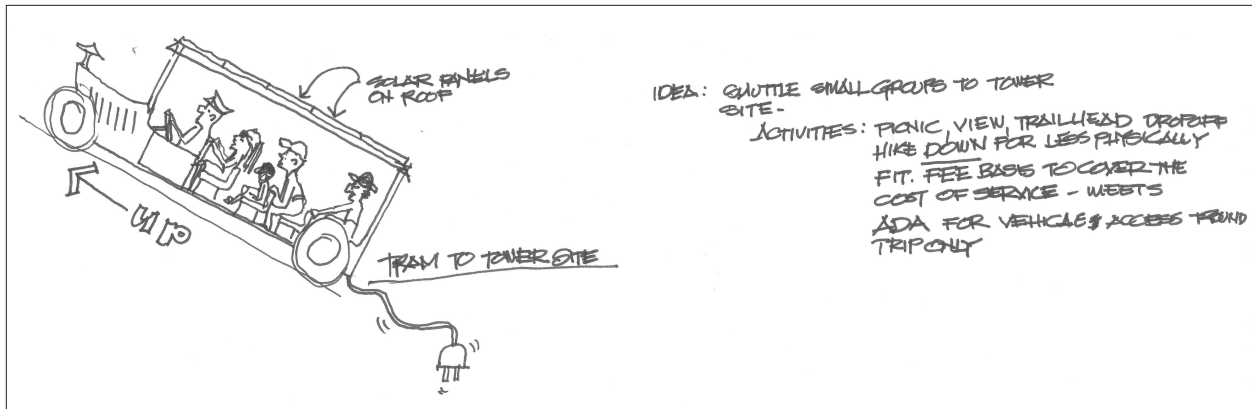


Figure V: Tour Concept

sustainability, and data linkages. These 6 focal areas are the core strategies for native plant conservation, as outlined by the Plant Conservation Alliance National Framework for Progress. Projects require a minimum 1:1 non-federal match by project partners, including cash or in-kind contributions of goods or services (such as volunteer time). This program may require National Environmental Policy Act (NEPA) compliance.

Dream Tags Charitable Fund: The Dream Tags Charitable Fund provides funding through the Community Foundation of Western Nevada to engage Nevadans in wildlife conservation by focusing donated funds to restore resilience in at-risk Nevada habitats with strategic collaborative projects for sustained impact that supports the preservation, protection, management, or restoration of wildlife and its habitat. A 25% match is required.

Community Partnerships: Along with limited capital and infrastructure preservation funding in Washoe County, there are currently limited resources available for operations and maintenance of park facilities, including Red Hill. Formal partnerships between Washoe County and Red Hill stakeholders, area businesses, and non-profit organizations should be pursued to augment existing budget. Stewardship opportunities and joint efforts to collaborate with adjacent property owners particularly with site protection and development at Red Hill will not only help preserve this unique

site, but reduce impacts of illegal dumping, congested area shooting and vandalism to neighboring properties as well.

Tours: While motorized use is not currently permitted, the community expressed an interest in pursuing opportunities for controlled public access through organized tours in an effort to provide accessible access to the top of the Red Hill so that individuals of all abilities can experience the tremendous views from the site. Tours may also provide a much needed revenue source. Permissions would need to be obtained before beginning tours or other motorized public access to Red Hill due to deed restrictions and lack of a formal paved transportation system on site.



Monitoring and restoring habitat for sensitive plants, such as the Altered Andesite Buckwheat, is an important step in implementing the Red Hill Master Plan. (Photos: Northern Nevada Native Plant Society)

Conclusion

The Red Hill Master Plan establishes the community's vision for Red Hill. In order to implement this vision, a Stakeholder Committee consisting of Sun Valley residents, community partners, businesses, recreation groups, and agency staff has created a 10-year Action Plan (Appendix I) which will be updated on an ongoing basis. The Stakeholder Committee plans to work together to complete the following short-term priority actions:

Habitat Conservation and Monitoring: Develop and maintain a wild-life and vegetation species list, identify priority species and monitoring needs. Monitor Golden Eagle nest using NDOW protocol and recommendations. Monitor mine and bat gate. Map noxious weeds and create a document that summarizes treatment plans.

Site Plan Development: Complete an environmental assessment and detailed trail plan.

Restoration and Protection: Ground truth disturbance areas and map. Develop a sign and barrier plan and begin to install signs. Prepare a detailed restoration plan. Reseed lands impacted by fires.

Open Space Acquisition: Continue to monitor for willing sellers and opportunities for easements. Advocate for protecting Red Hill through development review process. Review needs for additional conservation easements.

Funding and Partnerships: Review current stakeholders and identify additional partnership opportunities. Develop a collaborative budget strategy. Work with SPCA to implement "canine friendly" activities.

Interpretation and Wayfinding: Gather existing habitat and species information, which may be used for interpretive planning. Develop a wayfinding plan to help residents and visitors find Red Hill.

Stewardship and Special Events: Clean up existing dump sites and host regular clean-up events.

For more information or to learn how to get involved, please contact: Washoe County Regional Parks and Open Space at 775-823-6500.