

Section 6: Values at Risk

Communities, Safety, and Infrastructure

Within the 222,300-acre Carson Range planning area, 128,000 acres (57 percent) are within the wildland-urban interface. Of the nearly 100,000 homes in the area, approximately 60,000 are considered to be at risk to uncharacteristic wildfire. Depending on the community, average property values vary between \$130,000 and \$350,000, with many homes worth more than one million dollars. Including homes and businesses, all private and commercial property values at risk in the analysis area are estimated to be well over 6.5 to 9 billion dollars. In addition to homes, present conditions diminish firefighter safety, and threaten community infrastructure. In 2005, Resource Concepts Inc. completed the Nevada Community Wildfire/Risk Assessment. This assessment found that 15 assessed communities are in the analysis area and detailed risk assessments were prepared that describe community infrastructure that is at risk.



Communities at risk: structures lost to the Waterfall Fire

In addition, based on the assessment of values at risk by the planning cadre, communities in the Mount Rose Area, around Carson City, around Galena, and the outskirts of Reno were determined to be the most at risk to uncharacteristic fire behavior. However, it is the planning cadre's assessment, that all communities within or adjacent to the defined wildland-urban interface of the Carson Range analysis area or the Nevada Community Wildfire/Risk Assessment are at risk.

For example, outside of the Carson City area, there are many homes abutting the wildland-urban interface, and a few subdivisions with only one access road. There is not only a challenge in evacuation of residents but also in protection of their safety. The area in question is populated by nearly 20,000 residents. Because of this concentration of people, there is a risk to firefighter

safety in both protecting the citizens and the firefighters themselves.

Another example is the Evan's Creek open space area. This site is part of a designated community area that was rated as part of the Nevada Community Wildfire Risk/Hazard Assessment. In this initial rating, the community hazard rating for this area is the low hazard category (40 points). Subsequent site-specific analysis using the same rating methodology utilized in the study reveals the true community hazard rating for this area is the high hazard

category (82 Points). Primary factors that determined the hazard rating in this area include fire behavior potential in the area and the high availability of permanent fire suppression resources throughout the community. This area is characterized as the classic interface condition. There is no clear demarcation between wildland fuels and the residential structures of the community. Powerlines run along the southern property edge. Recently, several structures were lost in a similar area, where small wildland fires were started in open space areas adjacent to the community.



Power lines serving Lake Tahoe in the Lake Tahoe Nevada State Park

In addition, infrastructure that serves both local and adjacent communities is at risk. This includes roads, bridges, transmission lines, communication lines, water and sewer lines, and communication facilities. For example, in the Lake Tahoe Nevada State Park, there is the 120 kV Sierra Pacific Power utility lines serving Lake Tahoe Basin, the Snow Valley Peak cellular relay service tower and the Marlette-Hobart-Virginia City water system.

Municipal Watersheds

The City of Reno, Carson City, Virginia City, Sparks, Mt. Rose, Minden, Gardnerville, Jobs Peak, Genoa, Gold Hill, Silver City, and the Washoe Tribe are all dependent upon watersheds that are currently at risk in the analysis area. Surface and ground water sources originate within the watersheds located in this plan. Outside of Carson City, there are nine water tanks along the



Vicee Canyon water detention basins

eastern foothills of the city, which collect and store surface water, and supply nearly 40 percent of the water supply to the city. In addition, the western slopes supply water and provide the water system for Virginia City.

Carson City experienced first-hand the damaging effects of wildfire on the watershed. During the Waterfall Fire, four of the water tanks received minor damage. The distribution system suffered damage to pumps, supply lines, electrical control, and filters. Following the fire, denuded slopes increased the erosion and stormwater runoff.

The city lost hundreds of thousands of gallons of water due to ash and debris contamination.

There are pipelines in Lakeview, Timberline, Vicee, and Ash Canyons that supply water from Marlette/Hobart Water System to Virginia City and Carson City. These pipelines are vulnerable in several places where they cross streams. There are two pipelines: one that supplies water to the historic inverted siphon to Virginia City (which is their only source of municipal water), and another to the Ash Canyon



Burned area from Waterfall Fire adjacent to reservoir

Water Treatment chlorination facility in Carson City. The access road to the Marlette Lake pump was within the Waterfall Fire and was burned. The Marlette Lake pump operates on diesel fuel, which must be trucked in three times a week. Loss of access on this road to the Marlette/Hobart Water System would inhibit system adjustments. Substantial investments are currently being made to upgrade this system including a new pumping system that will continue to be vulnerable to wildfire.

Scenic and Intrinsic Values

Scenic and intrinsic values are a major factor driving tourism in the Carson Range. Each participating agency has the responsibility to protect these resources. For example, a primary responsibility of Nevada Division of State Parks is to identify, protect, and interpret the cultural resources under its jurisdiction. All jurisdictions include historic and pre-historic resources that must be protected by the partnering agency. These encompass the physical remains of past cultures, including prehistoric archaeological sites and historic buildings and structures. For example, Lake Tahoe Nevada State Park includes a number of at-risk infrastructure components, including two historic structures, Red House and Hannah's Cabin; numerous documented and undocumented historic sites related to Comstock-era mining and lumbering activities; 20th century Basque shepherd aspen carvings; and the federally registered historic Marlette water system, which includes roads, pipes, railroad grades and flumes, and reservoirs. In addition to its historic significance, the Marlette water system currently provides municipal water to a portion of Carson City, and all of Virginia City, Gold Hill, and Silver City. Also, the Washoe Tribe has the responsibility to protect ecosystem and human environment components that have both physical and spiritual qualities. These include the Clear Creek Parcel, which is part of the designated scenic overlook of the Carson Valley, natural and cultural resources, and protection of culturally sensitive medicinal plants and associated native practices.

Forest and Ecosystem Health

A majority of the analysis area is managed by the Humboldt-Toiyabe National Forest, Carson Ranger District. These lands provide the primary forested resources of the Carson Range. In addition, forested lands are managed by the Washoe Tribe, Nevada Division of Forestry, Nevada Division of State Lands, and the 2,700-acre Whittell Forest of the University of Nevada at Reno. The foothills and valleys contain a mix of sagebrush and rabbitbrush, gradually transitioning into pinyon pine and Utah juniper. At the lower reaches of the timber community, Jeffrey pine and white fir communities dominate the landscape. In the upper reaches of the timber communities, lodgepole pine, western white, sugar and washoe pine, incense cedar, and California red fir are plentiful. At timberline, you can find mountain hemlock and whitebark pine. Due to years of fire suppression and historic Comstock logging, these forest resources are at risk to stand-replacing events occurring elsewhere in the Sierra Nevadas.

Wildfire has the potential to damage or destroy suitable habitat for wildlife, including critical threatened, endangered, proposed and other special-status species, such as the mountain yellow-legged frog, California spotted owl, Northern goshawk, and the Lahontan cutthroat trout.

High-intensity wildfires will directly result in high tree mortality in forest stands, especially within moderate- and high-density forests having increased canopy cover. Tree mortality (representing severity of fire effects on vegetation) likely will be high in most fires, given current surface and ladder fuel conditions.

Native flora is also at risk as noxious weeds and invasive species tend to spread rapidly following wildfires. Wildfire areas are especially vulnerable to weed infestations because: 1) although equipment used in wildfire suppression and burned area emergency rehabilitation is cleaned prior to use, some seeds may still be brought into the area; and 2) burned areas provide ideal conditions for weed germination. Weed populations can easily gain a foothold before native vegetation has a chance to recover from the fire.