7.0 CLEAR CREEK

FUEL HAZARD: EXTREME COMMUNITY RISK: EXTREME

The Clear Creek neighborhood is situated in an east-west canyon in the foothills of southwestern Carson City east of the US Highway 395/Highway 50 junction. The assessment area occupies a one-mile wide band (at its widest) between Highway 50 and the Douglas County line. The eastern limit of the neighborhood is near the canyon narrows, the west boundary is about three-quarters of a mile west of where Old Highway 50 departs from the former site of the Clear Creek Youth Camp. The assessment area includes clusters of developed parcels, scattered individual residences, steep canyon terrain, meadows, and extensive undeveloped timbered acres on steep slopes.

7.1 INTERFACE CONDITIONS AND FUEL HAZARD

The Clear Creek neighborhood is characterized by an intermixed interface condition. Fuel density within the Clear Creek assessment area is heavy. Fuel loading was estimated at 3.5 to 10.0 tons per acre and is classified as an **extreme fuel hazard**. In the higher elevations, vegetation consists of a Jeffrey pine overstory with a big sagebrush and manzanita understory ranging from one to five feet tall. At lower elevations, the conifer overstory is more open and manzanita is replaced by bitterbrush in the understory.

A sagebrush/bitterbrush shrub community dominates the lowest elevations in the southeast portion of the wildland-urban interface. Fuel density is medium and shrub heights range from six to ten feet tall. Fuel loads are estimated at 4.0 to 6.0 tons per acre, and contribute to **extreme fuel hazard conditions**.

Clear Creek is situated in an east-west directional canyon with most of the homes located on the south-facing canyon slope, surrounded on three sides by mountains. Slopes vary from five percent to greater than forty percent. Prevailing winds are from the west-southwest, and can be channeled down Clear Creek Canyon at excessively high speeds that can contribute to extreme fire behavior. Strong afternoon downslope winds occur during the summer months and on the approach of cold fronts. Downslope afternoon winds along the Eastern Sierra Front commonly spread wildfire into the wildland-urban interface, and are the most common factor contributing to structure loss in a WUI for this region. Wildfire history in this area includes the 2003 Highway 50 Fire that was contained at the east end of the assessment area, just across the highway.

Fuel hazard conditions in the Clear Creek neighborhood and photographs of representative fuel types are shown in Figures 7-1 and 7-2, respectively.

Table 7-1 summarizes the history of fuels reduction treatments within the Clear Creek Assessment Area.

Table 7-1. Fuels treatment history for the Clear Creek neighborhood.

Treatment Type	Treatment Area (approximate acres)	Treatment Year	Ownership
Fuelbreak Maintenance	15	2008 2006 2004	Washoe Tribe
Fuelbreak	58	2007-2008	USFS
Fuelbreak	4	2007	Private
Fuelbreak	156	2005	Private
Fuelbreak	15	2002	Washoe Tribe
Cheatgrass Abatement	80	2006	Private
Seeding	30	2005	Private
Hand Treatment	112	2004	Private
Shaded Fuelbreak	20	2004	Private
Thinning – Fuel Reduction	30	2002	Washoe Tribe

7.2 NEIGHBORHOOD RISK/HAZARD RATING

The risk/hazard assessment resulted in classifying Clear Creek in the **Extreme Hazard** category (89 points). A summary of the values that affect the hazard rating is included in Table 7-2 at the end of this chapter. The primary wildfire hazard conditions in the Clear Creek neighborhood were related to community design, including limited road access and steep grades, and the potential for severe fire behavior due to topography and fuel loading.

7.2.1 Community Design

Throughout most of Clear Creek there is no clear line of demarcation between wildland fuels and buildings in the neighborhood. Most homes are situated on lots between one and ten acres in size. These scattered structures are widely spaced and interspersed with wildland fuels.

- > Interface Condition: intermix wildland-urban interface condition.
- ➤ Access: Clear Creek has one paved road in and out of the neighborhood. This road is listed as State Route 705 for the first mile west of U.S. Highway 395 and as Old Clear Creek Road further west. Old Clear Creek Road is between 20 and 24 feet wide and allows adequate room for fire suppression equipment to maneuver. The road gradient on primary and secondary roads is steeper than five percent. Steep roads and limited access to the neighborhood could limit fire suppression and evacuation activities during a wildland fire. There is an unpaved emergency access road between Clear Creek and Highway 395 located approximately three miles west of the junction with Highway 50. A new exit from Highway 395 approximately 4.5 miles west of the junction with Highway 50 has been built to connect with Old Clear Creek Road. However, the opening of this exit has been indefinitely postponed.
- ➤ **Signage:** Visibility of street signs and addresses was inadequate throughout the Clear Creek neighborhood survey area. Nearly one-third of home addresses and sixty percent of street signs were not visible. Clear and visible residential addresses

- are important to aid firefighting personnel in locating homes during low visibility conditions that may occur during wildland fire.
- ➤ **Utilities:** Underground electrical and aboveground propane tanks were the primary utilities serving the Clear Creek neighborhood. The underground electrical service reduces any potential ignition risk from utilities. Vegetation clearance around propane tanks was generally in need of improvement.

7.2.2 Construction Materials

All the homes within the neighborhood survey area were built with fire resistant composite roofing materials; however, thirty percent of the homes were built with combustible siding and most (74 percent) had unenclosed or unscreened balconies, decks, porches, eaves, or attic vents that create drafty places where sparks and embers can be trapped, smolder, ignite, and rapidly spread fire to the house.

7.2.3 Defensible Space

Of the twenty-seven homes evaluated, most (63 percent) did not have landscaping that would meet the minimum defensible space requirement to help protect the home and minimize the potential for damage or loss during a wildfire.

7.2.4 Suppression Capabilities

Wildfire Protection Resources

The Carson City Fire Department and the NDF Sierra Forest Fire Protection District provide wildland and structure fire protection to the Clear Creek Neighborhood. The US Forest Service also provides fire protection for the national forest lands surrounding the Clear Creek neighborhood. BLM/BIA provide fire protection for tribal lands.

Water Sources and Infrastructure

Water availability for fire suppression in Clear Creek neighborhood includes a limited drafting source from Clear Creek, one pond, and two residences with water storage facilities. Fire suppression water tenders can refill at a source near the intersection of U.S. Highway 395 and Old Clear Creek Road in the event of a wildfire (ten to twenty minute round trip) (Dynamac, 2003 from 2004 Report). In 2006, the Fire Safe Council assisted in the installation of a 10,000-gallon dry hydrant in Clear Creek.

7.3 RECOMMENDATIONS

The *extreme* community hazard rating for the Clear Creek neighborhood warrants priority attention to this area for fuel hazard reduction. In the summer of 2009, the US Forest Service will begin the field layout and tree marking for fuels reduction on 12,190 acres on Forest Service lands to the north and west of the Clear Creek neighborhood.³ Work expected to commence on USFS lands during the 2010 field season is shown in Appendix F.

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³ Project components are described in the 2008 "Environmental Assessment for Clear Creek Fuels Reduction and Ecosystem Enhancement Project" (available online at www.fs.fed.us/r4/htmf/projects/carson/ClearCreekEA.pdf).

The Washoe Tribe is using Southern Nevada Public Land Management Act (SNPLMA) funding to perform hazardous fuels reduction activities between 2009 and 2011. During the summer of 2009 the Washoe Tribe will perform stand examinations on approximately 386 acres of tribal lands, with fuels reduction activities occurring during 2010 and 2011. Figures in Appendix F show areas and type of treatment for the Washoe Tribe lands.

The recommendations included here should be implemented as a complement to past and planned homeowner and Fire Safe Council Chapter activities. On a larger scale they are designed to complement the treatments on forest lands.

- ➤ Conduct annual defensible space and hazardous fuels evaluations on private and public lands.
- ➤ Distribute copes of *Living With Fire: A Guide for the Homeowner, Eastern Sierra Front Edition* (U of NV Cooperative Extension).
- ➤ Encourage homeowners to follow the UNR Cooperative Extension's recommendations for fire safe landscaping.
- ➤ Continue the defensible space dumpster program to provide homeowners with an easily accessible biomass removal option.
- ➤ Develop a vegetation management plan for non-Forest Service lands in T14N, R19E, Sections 3, 4, 5 and 6 and in T15N, R19E Sections 28, 33 and 34 with the objective of reducing ground fuels, ladder fuels, and stand density to lessen the potential for torching and crown fires in the remaining stand. Specific treatments should be designed to restore appropriate stand density, structure and species composition by thinning prescriptions that remove more than just small trees. Table 7-4 provides the extent of the treatment area by county and land status.

Table 7-4. Timber treatments recommended or planned in the Clear Creek wildland-urban interface.

Treatment Type	County	Treatment Area (approximate acres)	Ownership
Timber Thinning	Carson City	733	Private (15%) Carson City
	Douglas County	1160	Private Washoe Tribe (14%)

➤ Continue the riparian vegetation treatment along Clear Creek from the narrows to 1.8 miles upstream to connect to previous riparian treatment areas. (A description of riparian area treatment is given in Appendix B.) This treatment crosses into Douglas County. Table 7-3 provides the extent of the treatment area by county and land status.

Table 7-3. Riparian area treatment recommended or planned in the Clear Creek neighborhood.

Treatment Type	County	Treatment Area (approximate acres)	Ownership
Riparian Area Treatment	Carson City	15	Private
	Douglas County	16	Private Washoe Tribe (33%)

➤ Create a shaded fuelbreak 200 feet wide along the south side of Clear Creek from the narrows to approximately one mile upstream to the Section 34/35 line (as recommended in the 2005 Risk/Hazard Assessment). Remove ladder fuels, prune remaining trees to a height three times any remaining understory shrub, or six feet or to a maximum height equal to 1/3 of the total tree canopy. Tree spacing should be such that torching and crown fire potential in the remaining stand has been significantly reduced. Proper crown spacing for trees on slopes greater than 30 percent will be determined during the development of a comprehensive prescription.

Table 7.2 Results of the wildfire risk/hazard rating in the Clear Creek neighborhood.

A. Urban Interface Condi	tion 2	TALLIES
B. Community Design		27 Total Houses 5 Residential Streets
1. Ingress / Egress	3/5	B5. Street Signs
2. Width of Road	3 /5	3 not 2 visible 40% visible
Accessibility	3/3	visible — visible — visible
4. Secondary Road	<u>5</u> /5	
Street Signs	5/5	B6. Address Signs
Address Signs	5/5	8 not 19 visible 70% visible
7. Utilities		visible
C. Construction Materials		C1. Roofs
1. Roofs		0 combust 27 not 100% not combust
2. Siding		C2. Siding
3. Unenclosed Structure	s <u>5</u> /5	8 combust 19 not 70% not combust
D. Defensible Space		combust
1. Lot Size	3/5	C3. Unenclosed Structures on Lot
2. Defensible Space	7 /15	not enclosed 74% not enclosed enclosed
F. Fire Behavior		D1. Lot Sizes
1. Fuels	5 /5	0 <1ac26
2. Fire Behavior	10 /10	
3. Slope	10 /10	D2. Defensible Space
4. Aspect	10 /10	17 not 10 adequate 37% adequate
E. Suppression Capabiliti	es	
1. Water Source	⁵ /10	
2. Department	1 /10	

Community
Hazard Score: 89 /128

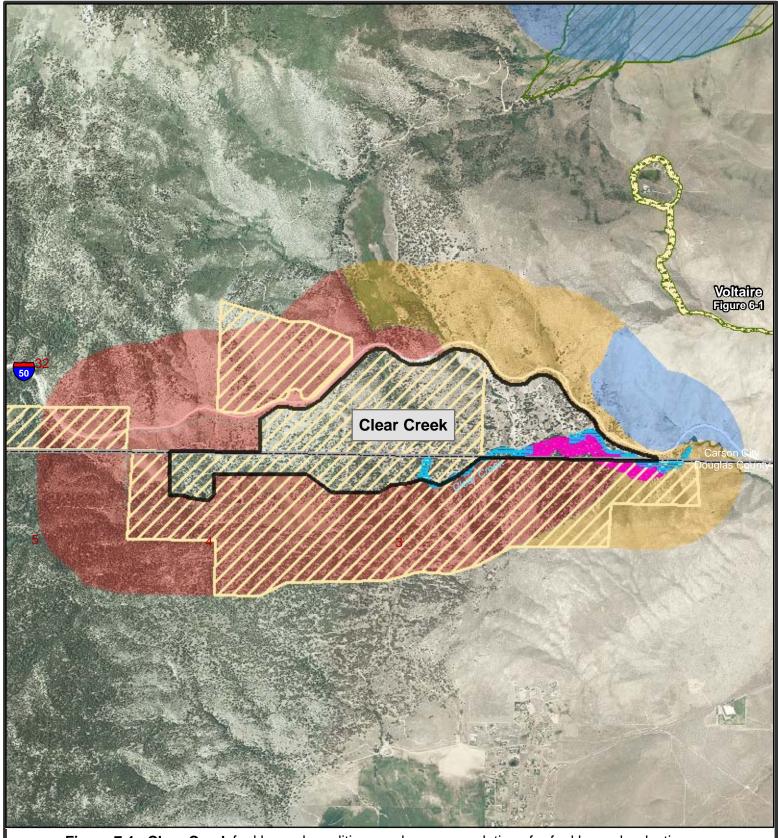


Figure 7-1. Clear Creek fuel hazard conditions and recommendations for fuel hazard reduction.

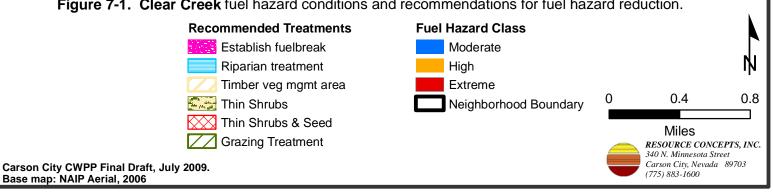
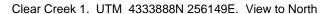


Figure 7-2. Representative fuel types in the wildland-urban interface around the Clear Creek neighborhood.





Clear Creek 2. Clear Creek 1. UTM 4333048N 253238E. View to West