

**COMMUNITY WILDFIRE PROTECTION PLAN (CWPP) FOR THE
GLEN HAVEN/RETREAT COMMUNITIES
LARIMER COUNTY, COLORADO**

DEVELOPED BY:

**GLEN HAVEN AREA VOLUNTEER FIRE DEPARTMENT
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**RETREAT LANDOWNERS ASSOCIATION
KENT MILLS, PRESIDENT**

**Revision 1
May 2020**

Introduction

This *Community Wildfire Protection Plan* (CWPP) was developed by The Glen Haven Association, The Retreat Landowners Association, and the Glen Haven Area Volunteer Fire Department with input from Derek Rosenquist, Larimer County Emergency Services; Matt Norville, Colorado State Forest Service; James White, Arapaho/Roosevelt National Forests; and Mike Lewelling, Rocky Mountain National Park. Information in this plan is provided at a level of specificity determined by the community and appropriate agencies.

The process of developing a CWPP can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland-urban interface. It can also lead community members through valuable discussions regarding management options and implications for the surrounding watershed.

This CWPP is an update to the 2007 original version. The original CWPP focused on items to help combat an active wildfire. Action items in the original CWPP such as dry hydrant and underground water storage tank installations, street signs and address markings, and triage have been completed. Other ongoing items are carried over in this revision.

The focus of this CWPP revision is to help prevent the spread of wildfire by mitigation of roadsides to maintain safe access/egress and creation of fuel reduction zones in the major drainages. Obtaining and maintaining Firewise Certification and associated activities such as an annual Community Wildfire Day and volunteer projects are also important additions to this revision of the plan.

Community / Agencies Involved

Representatives involved in the development of the Glen Haven/The Retreat CWPP are included in the following table. Their name, organization, and roles and responsibilities are indicated below:

CWPP Development Team

Name	Organization	Roles / Responsibilities
Gene Downey Kent Mills <hr/>	The Glen Haven Association/The Retreat Landowners Association	Primary development of CWPP and decision making – community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
Kevin Zagorda Sid Brown	Glen Haven Volunteer Fire Department	Primary development of CWPP and decision making –

		community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods
Matt Norville	Colorado State Forest Service	Facilitation of planning process and approval of CWPP process and minimum standards. Provides input and expertise on forestry, fire and fuels, and Firewise concepts.
Derek Rosenquist	Larimer County Sheriff's Office Emergency Services	Provides input and expertise on hazard assessment, defensible space, and Firewise concepts.
Mike Lewelling James White	Federal Land Management agencies (NPS, USFS)	Provides input and expertise on federal lands forestry, fire and fuels.

Identification of Values at Risk

Using technology and local expertise, Glen Haven and The Retreat have developed a base map and narrative of the community and adjacent landscapes of interest. This map will act as a visual aid from which community members can assess and make recommendations. The base map includes, at a minimum, the following:

- Inhabited areas and values at potential risk to wildland fire
- Areas containing critical human infrastructure—such as evacuation routes, water supply structures, and major power or communication lines—that are at risk from wildfire
- A preliminary designation of the community's Wildland Urban Interface (WUI) zone.

Community Risk Assessment

The purpose of the community risk assessment is to help to prioritize areas for treatment and identify the highest priority uses for available financial and human resources. This section is divided into five areas of concern:

Fuel Hazards: An evaluation of vegetation conditions within the community and on adjacent lands. This was conducted using the Glen Haven Wildfire Assessment Mapping Tool, which is based upon topography and fuel loading. It predicts flame length, rate of spread, fire intensity, heat per unit area, crown fire activity, fuel moisture, and midflame wind speed. This model is

based on the predicted 90th percentile worst case weather conditions for wind, temperature, humidity, and fuel moisture content.

Risk of Wildfire Occurrence: An evaluation of the probability of fire ignition within the community and surrounding lands. This was conducted using the Glen Haven Wildfire Assessment mapping tool and historical data.

Risk to homes, businesses, and essential infrastructure: An evaluation of the vulnerability of structures within the community to ignition from firebrands, radiation, and convection. Also includes an evaluation of risks to essential infrastructure such as evacuation routes, water supply structures, and power and communication lines. This was conducted using the Glen Haven Wildfire Assessment mapping tool, Structure Assessment (construction materials, structure access, defensible space, etc.), and Infrastructure Assessment (utilities, water, community roads, power lines, etc.).

Risk to Other Community Values: An evaluation of risk to other community values such as wildlife habitat, recreation and scenic areas, water supplies and quality, and landscapes of historical, economic or cultural value.

Local Preparedness and Firefighting Capability: Initial response to all fire, medical and associated emergencies is the responsibility of Glen Haven Area Volunteer Fire Department (GHAVFD). The GHAVFD is an all-volunteer, self-funded Fire Department. The Department currently has one Type 4, one Type 5, and one Type 6 Wildland Truck. Membership is typically between 15-20 firefighters. Wildland fire responsibilities of Larimer County, Colorado State Forest Service, United States Forest Service, and the National Park Service are described in the current *Larimer County Annual Operating Plan*. All mutual aid agreements, training, equipment, and response are the responsibility of the local fire department and the agencies listed above.

In addition to the risk assessment above, a Community Wildfire Risk Assessment was conducted as part of the Glen Haven Firewise Application and is attached as an appendix for more information.

Hazard Reduction Priorities

- Evacuation Routes and Safety Zones
- Fuel Reduction
- Property Defensible Space
- Community Readiness for evacuation
- Mitigation of adjacent government lands

Action Plan

The Glen Haven Area Volunteer Fire Department, Glen Haven Association, and The Retreat Landowners Association have developed the attached action plan which identifies roles and responsibilities for the Hazard Reduction Priorities.

Each year progress will be assessed and specific actions for the next year will be determined. This may be done as part of the planning for volunteer efforts such as Community Wildfire Preparedness Day or as Grant Funding becomes available. Obtaining and Maintaining Firewise certification will also drive many of these actions.

The following community representatives / agencies have approved this *Community Wildfire Protection Plan*.

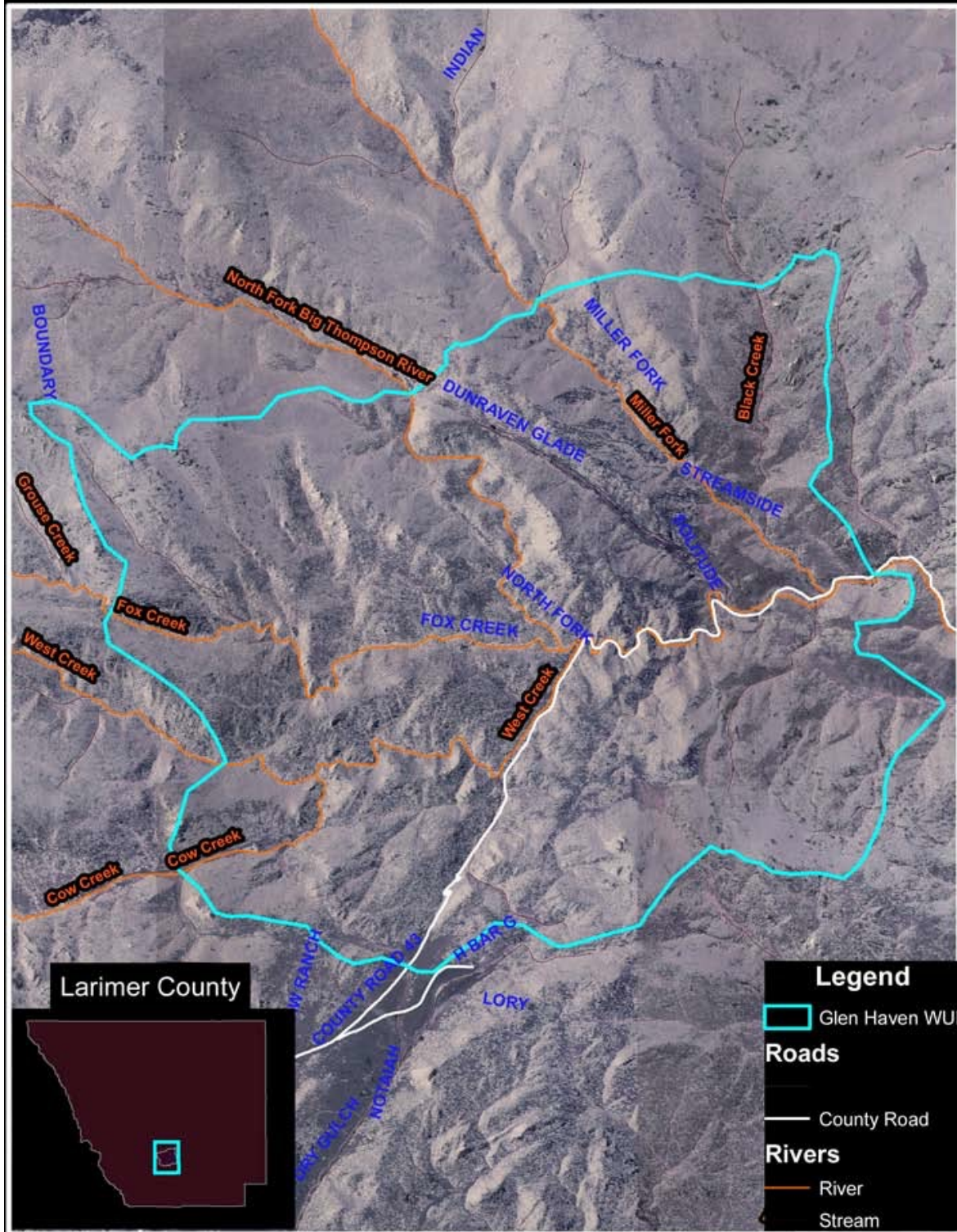
Kevin Zagorda, Chief Glen Haven Area Volunteer Fire Dept	<u>/S/ Original Signed by</u>
Sid Brown, President Glen Haven Area Volunteer Fire Dept	<u>/S/ Original Signed by</u>
Gene Downey, President Glen Haven Association	<u>/S/ Original Signed by</u>
Kent Mills, President Retreat Landowners Association	<u>/S/ Original Signed by</u>
Supervisory Forester Colorado State Forest Service, Ft. Collins District	<u>/S/ Original Signed by</u>

GLEN HAVEN/RETREAT CWPP HISTORY AND NARRATIVE

The community of Glen Haven is located in a deep canyon area 7.5 miles north of the Town of Estes Park and 8 miles southwest of the community of Drake. The canyon, commonly known as Devil's Gulch, begins at its southern end with a very steep descent of some 700 feet from the northern reaches of the Estes Valley. Larimer County Road 43 (CR 43) descends into the "Gulch" via a series of switchbacks, and follows the course of West Creek to a point where the confluence with the North Fork of the Big Thompson is reached in what is now "downtown" Glen Haven. The road continues another 8 miles northeast until it intersects U.S. Highway 34 and the community of Drake in the Big Thompson Canyon.

The area is surrounded by U.S. Forest Service lands and Wilderness Area. Rocky Mountain National Park boundaries are approximately 4 miles west of the community. Private properties in the area are largely contained in one of the two Home Owners Associations, the Glen Haven Association (GHA) and the Retreat Landowners Association (RLA). Other properties are located in the Dennis Subdivision along the West Creek in the southern part of the area, along County Road 43 between Glen Haven and Drake, on Crosier Mountain's northern and western aspects and on the southern aspect of Storm Mountain. The area contains 5 creek drainages which all feed the North Fork of the Big Thompson River: West Creek, Fox Creek, North Fork, Miller's Fork and Black Creek.

Glen Haven CWPP

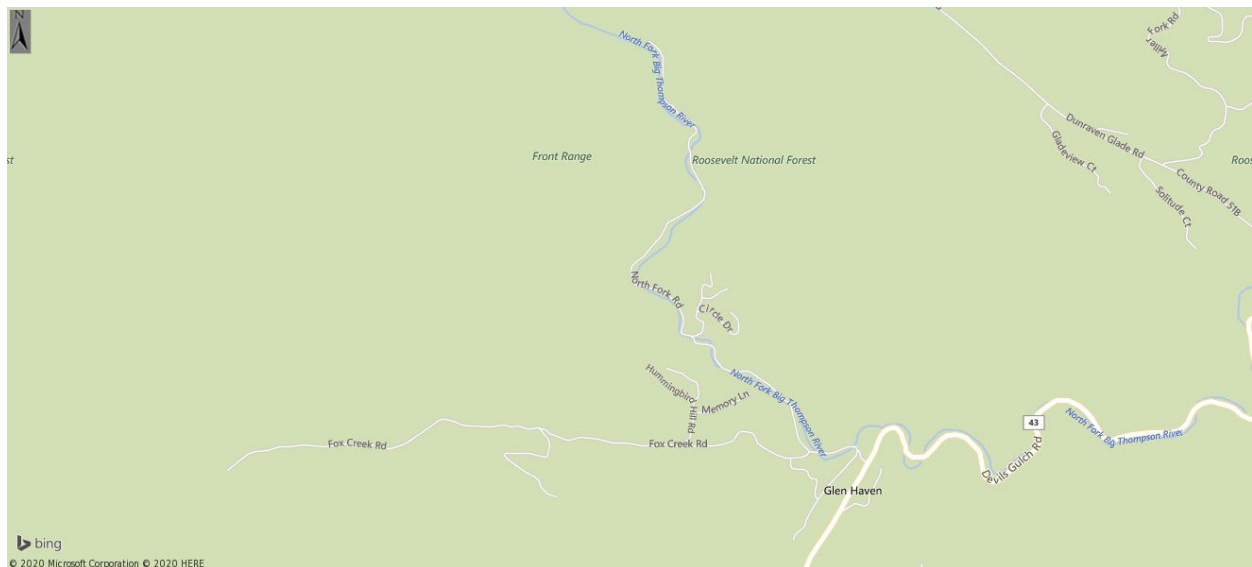


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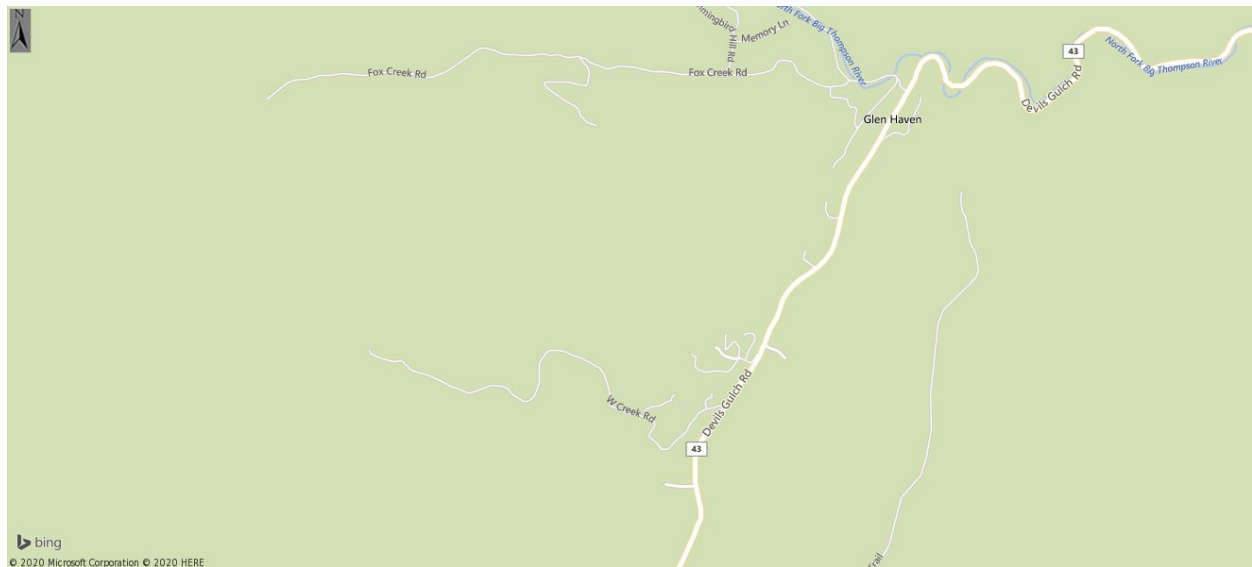
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Glen Haven Area WUI Boundary

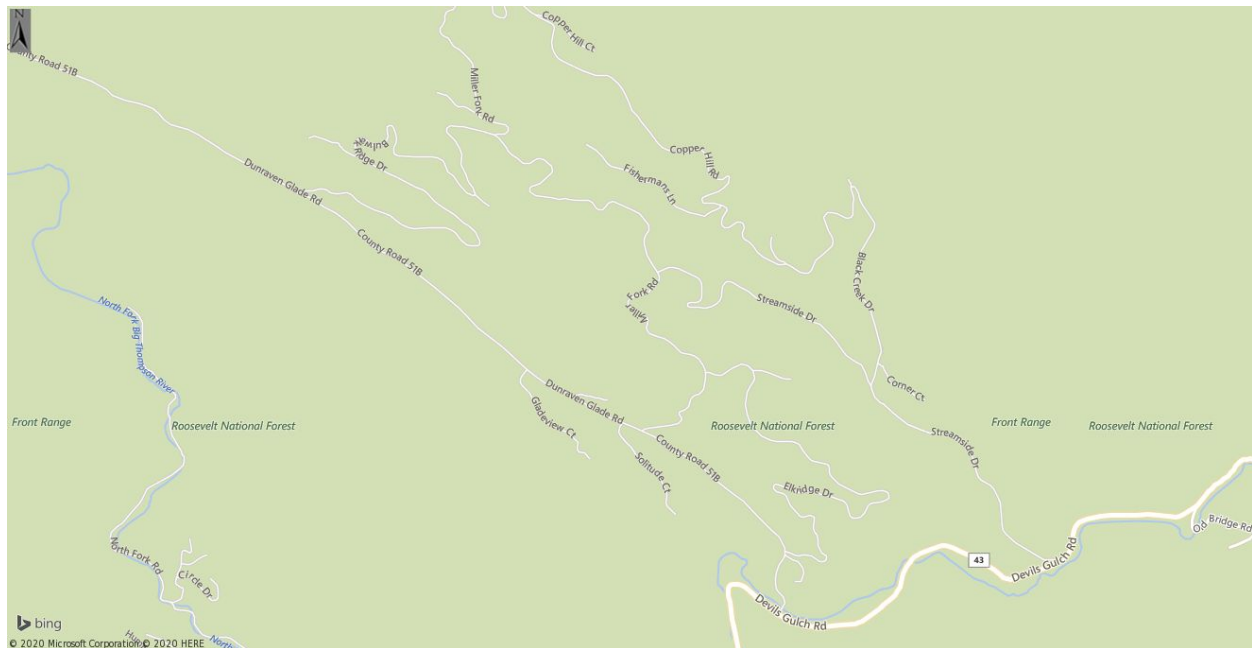
The GHA was organized in 1903 and is the oldest continuing Home Owners Association in Colorado. The GHA and the RLA currently include approximately 387 homes and cabins. Construction is primarily wood frame/siding or log home. Most of the structures in the GHA are summer cabins which exceed 50 years in age. The structures are located along the Fox Creek or North Fork drainages which are accessed by narrow dirt roads approximately 1 1/2 miles in length, and alongside County Road 43. Access to the GHA is on North Fork Road where it intersects County Road 43 next to the General Store in Glen Haven. Structures in the RLA are newer, with most <30 yrs old, but are spread among some 11 miles of narrow dirt roads. The main access roads to the RLA are Dunraven Glade (County Road 51B) at Mile Marker 9.3 on County Road 43, and Streamside Drive which intersects County Road 43 at Mile Marker 10. Approximately 70 additional homes exist outside of the GHA and RLA boundaries.



Central Glen Haven Area including Glen Haven Association



South Glen Haven Area

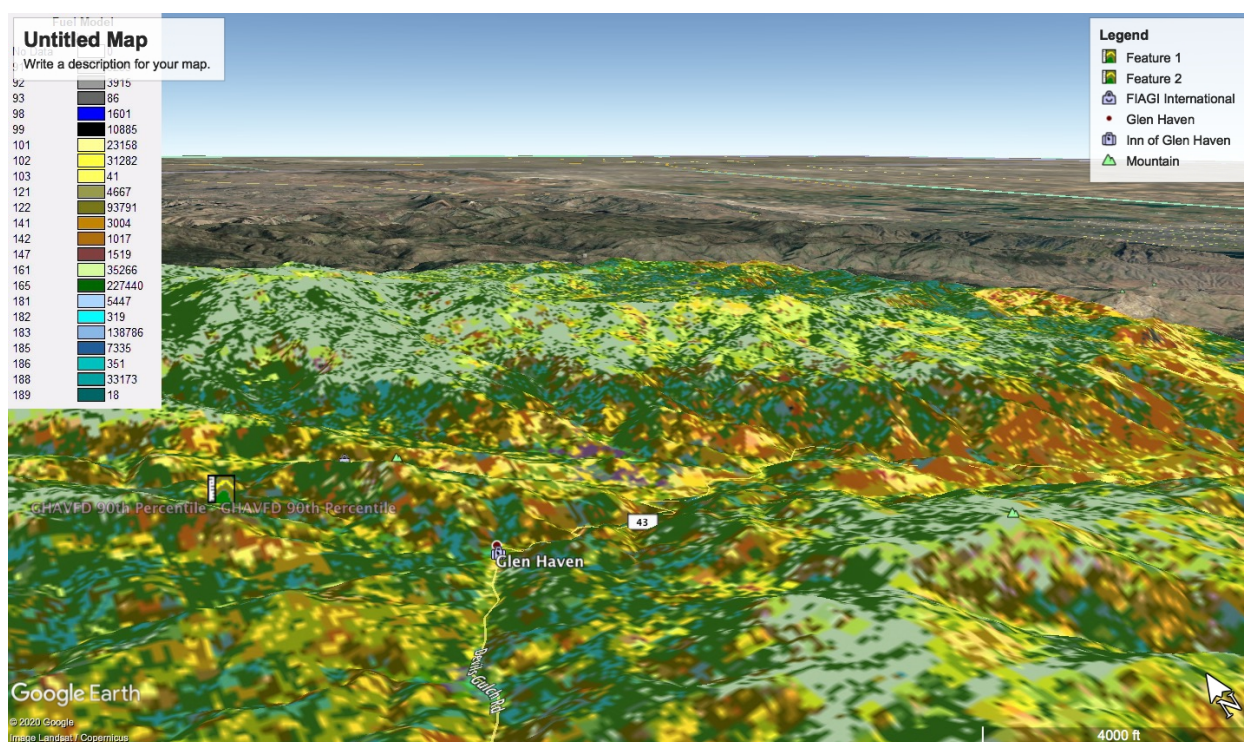


North Glen Haven including Retreat Landowner Association

The Glen Haven area is heavily forested with Lodgepole, Ponderosa and Spruce stands. The Scott-Burgan fuel types in the WUI are primarily Dry Climate/Low Moisture Grass (GR1 & GR2), 1-3 ft Grass -Shrub (GS2), high load conifer litter with shrub understory (TU5) in about equal amounts. There is also some dead and down woody fuel litter (TL-8) beneath the canopy and at higher elevations some Long needle pine litter (TL8) due to Lodgepole. The Wildfire Behavior Model provides a map of fuel types in the Glen Haven Area (see below). Fire rate of spread of up to 80 ft/min can be expected for some of the narrow drainages in the Glen Haven WUI. For perspective, a large wildfire could consume the length of Fisherman's Lane in an hour and

North Fork Road in 3 hours.

Historically, the entire area has been considered a “High Risk” Wildfire area, along with much of the Front Range of the Rockies due to the abundance of low moisture fuels. Its susceptibility to heavy lightning activity during the Spring and Summer months, as well as being a hugely popular recreation destination create a challenge for Wildfire management. The Urban-Wildland Interface has grown over a period of almost 100 years. The increase in year-round residents, tourist activity and wildfire risk has prompted the creation of the Glen Haven/Retreat Community Wildfire Protection Plan.



Model of Scott – Burgan Fuel Types in the Glen Haven Area

GLEN HAVEN/RETREAT AREA CWPP VALUES AT RISK AND PRIORITY DETERMINATION

Values and Priorities (H-high, M-Medium, L-low)

Structures

- Historical/archeological structures - H
- Homes - H
- Businesses/local economy - H
- Fire houses – H

- Town Hall - H

Infrastructure

- Above-ground fuel storage/individual propane tanks - L
- Utilities (electrical power, phone, internet) - H
- Bridges - H
- Access/Evacuation routes - H
- Community-owned vehicles – L
- Fire Department vehicles - H

Natural Resources

- Water Quality - H
- Rivers and streams/Riparian areas - L
- Scenic beauty - L
- Wildlife - L
- Forested areas - H
- Recreation/access to backcountry - L
- USFS picnic areas - L
- Community-owned open space – L

Seasonal Camps

- Cheley Girl's Camp - H
- Cheley Boy's Camp -H
- Youth United - H

Intrinsic Values

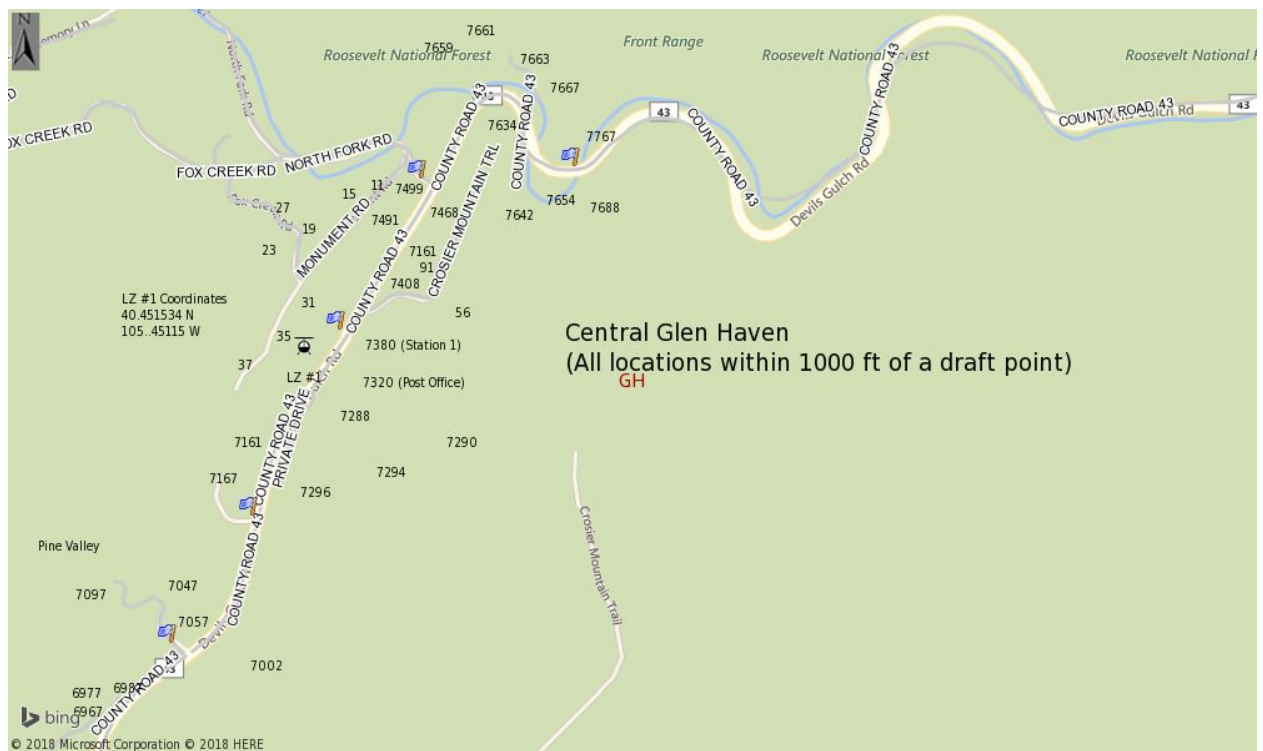
- Life Safety/Public Health -H
- Sense of community identity - H
- Independence - M
- Maintaining property values/investments - H
- Serenity/solitude - M

GLEN HAVEN/RETREAT CWPP ACTION PLAN RESPONSIBILITIES

Fire Department Responsibilities

- Support community efforts to obtain/maintain Firewise certification (Community Wildfire Risk Assessment, Community Wildfire Preparedness Day, Volunteer Mitigation Projects, etc)

- Provide defensible space and Home Ignition Zone evaluations to property owners at no cost
- Maintain existing water storage facilities (10,000 gal) on Bulwark Ridge, Copper Hill, and Hummingbird Hill
- Maintain and update maps of water sources and draft points – Copies of the updated maps are kept in each apparatus and by each firefighter. Additional copies are maintained at Station 1. (See example below)
- Maintain access for fire apparatus: Turn-around/turn out space, Pull-off drafting areas, Space for portable dump tanks, Room to place apparatus alongside roadways
- Maintain helicopter landing zone (LZ) accessibility, to both aircraft and ground transportation - LZ's are designated with GPS Coordinates on the same maps that provide water sources and draft points. Larimer County Sheriff's Office Emergency Services also has been provided LZ coordinates.
- Establish safety zones
- Maintain and update property/structure wildfire triage process



Example GHAFFD Map showing property addresses, LZ Coordinates, and flagged draft points

Property Owner/HOA Responsibilities

- Obtain/maintain Firewise certification (staff committee, track volunteer hours and dollars spent)
- Create/maintain defensible space around structures
- Maintain access for fire equipment in driveways (overhead clearance and driveway width, post weight limits on private bridges)
- Create/maintain personal wildfire action checklists
- Maintain signage (addresses, evacuation route signs, road signs)
- Complete details for evacuation plan
- Provide educational materials to landowners on Firewise concepts, forest health issues, insect and disease problems, preparing for emergency evacuation, etc.
- Create fuel breaks/reduction zones where appropriate
- Address dead and currently infested trees due to Mountain Pine Beetle that pose a fire hazard
- Address issues with emergency access to locked, private gates to homes and trails
- Educate landowners on county restrictions and required permits for burning piles or performing a prescribed burn on their land
- Maintain a community slash disposal program for community members
- Identify areas on National Forest land adjacent to the community for fuels reduction treatment

GLEN HAVEN/RETREAT CWPP PRIORITIES AND ACTIONS ITEMS

GLEN HAVEN CWPP COMMUNITY ACTION PLAN April 2020

PRIORITY 1: Roadside Mitigation

Access for evacuations and firefighting apparatus is the highest priority action item. During a wildfire, roads may become impassable if roadside trees and vegetation are not mitigated. Narrow long roads with only one means of access and no Safety Zone are the most urgent to be dealt with. In the Retreat, a right of way exists to perform roadside mitigation work. However, Glen Haven Association roads have no such right of way and property owner permission is required for any mitigation work. Roadside Mitigation will be conducted each year using a combination of property owner work, volunteer work, Forest Service work on USFS land, or grant funded work. The primary responsibility rests with the property owner, however, support from volunteers may also be available.

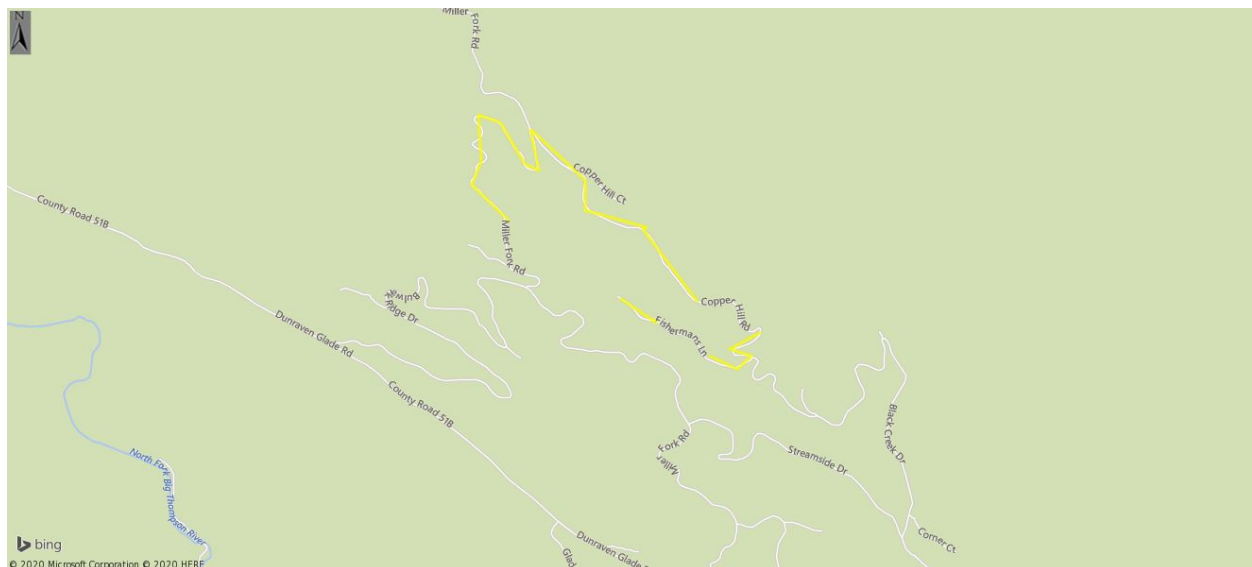
Priority roads include dead end roads with multiple structures and higher risk for large flame height and rate of spread such as Fisherman's Lane, North Fork Road, and Fox Creek Road.

Following these priority roads, other major evacuation routes such as Miller Fork Road, Copper Hill Road, Black Creek Road, Bulwark Ridge, and Streamside Drive need to be mitigated. This will require a multi-year effort that includes volunteer labor, grant funded work, and individual property owner work.

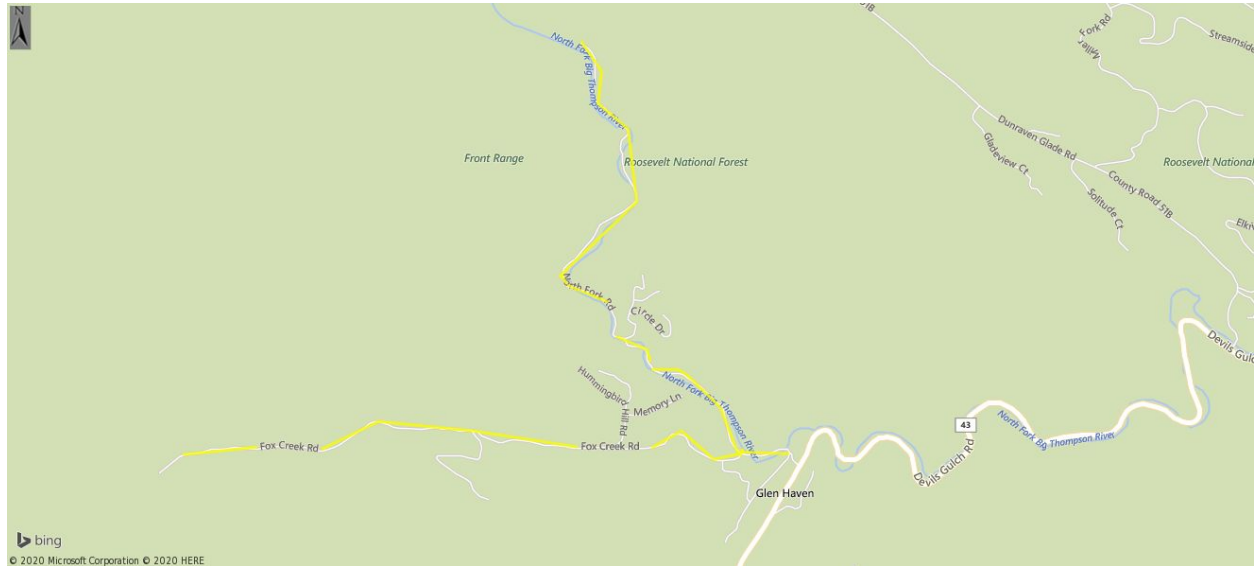
Portions of CR 43, especially along the switchbacks and in the narrow canyon areas between Glen Haven and the Retreat and below Old Bridge Road will also require roadside mitigation to maintain accessibility. This will require coordination with property owners and the USFS.

Roadside mitigation will involve removal of small trees and ladder fuels by volunteer hand crews. Low limbs and/or limbs overhanging roadways will be trimmed from larger trees. Slash will be removed to either the Retreat Slash pile or staged for hauling away by the GHA slash removal contractor. Overhead power lines also restrict removal of some trees.

The first planned roadside mitigation areas are highlighted in yellow below:



Retreat Area Roadside Mitigation – Phase I in Yellow



Glen Haven Association Roadside Mitigation – Phase I in Yellow

PRIORITY 2: FUELS REDUCTION

Fuels Reduction includes mitigation work on both private and public lands with the intent of reducing fire intensity and spread. A volunteer organization (Team Rubicon) created a fuel reduction zone at the end of North Fork Road and started another at the end of Fisherman's Lane in 2019. This work needs to continue including burning of slash piles generated.



Approximate location of Fuel Reduction Zone at end of North Fork Road



Approximate location of Fisherman's Lane Fuel Reduction Zone

Priority work includes the completion of the fuel reduction zones at the end of Fisherman's Lane and Fox Creek to slow or stop the spread of fire down these major drainages. GHAVFD inspects the reduction zone and marks Junipers, ladder fuels, and other smaller trees for removal by volunteer hand crews. Low hanging limbs are also flagged for removal from larger trees such as Ponderosa Pines. Following completion of these Miller Fork and Black Creek would be the next priorities. While the primary responsibility rests with the property owner, support from volunteers or grants may also be available. Property owner permission is required for all work on private land.

When slash removal is impractical, slash piles may be built for subsequent burning. Larimer County burn permits must be obtained by the property owner and all requirements for pile size and burn conditions must be met. GHAVFD will ignite piles and monitor burning if desired by property owners. GHAVFD will also stage personnel and apparatus for protection during burns on both private and public lands that are near structures.

Mitigation on public land will be planned and executed by the appropriate government agency. (Fuel Mitigation on Public Lands is discussed under Priority 5)

Priority 3: Defensible Space

Creation of defensible space (D-Space) and maintaining the Home Ignition Zone (HIZ) around structures is critical to structure survivability in a wildfire. It also saves valuable firefighting resources and improves firefighter safety. Responsibility rests with the property owner for creating and maintaining their defensible space and Home Ignition Zone. GHAVFD provides a property evaluation and recommendations free of charge. Public education and tools are provided during annual HOA meetings and education events. Neither the GHA nor the RLA have any codes or requirements concerning D-Space or HIZ. Many properties have dense tree stands within 100 ft of the structure with ladder fuels and/or low hanging limbs. In addition, many properties have tall grass that remains uncut during the summer within 100 ft of the structure. These conditions have a huge impact on structure survivability during a wildfire, especially since most homes have wood exterior siding.

Following completion of roadside mitigation and fuels reduction, volunteer work efforts will be shifted to individual property defensible space creation. This will likely be several years down the line. Properties will be selected with owner consent based upon risk factors such as location, topography, size, and difficulty. For example, a structure surrounded by a dense stand of large mature trees or on steep terrain may be impossible to create defensible space for, while a structure with fewer or smaller trees would be much simpler.

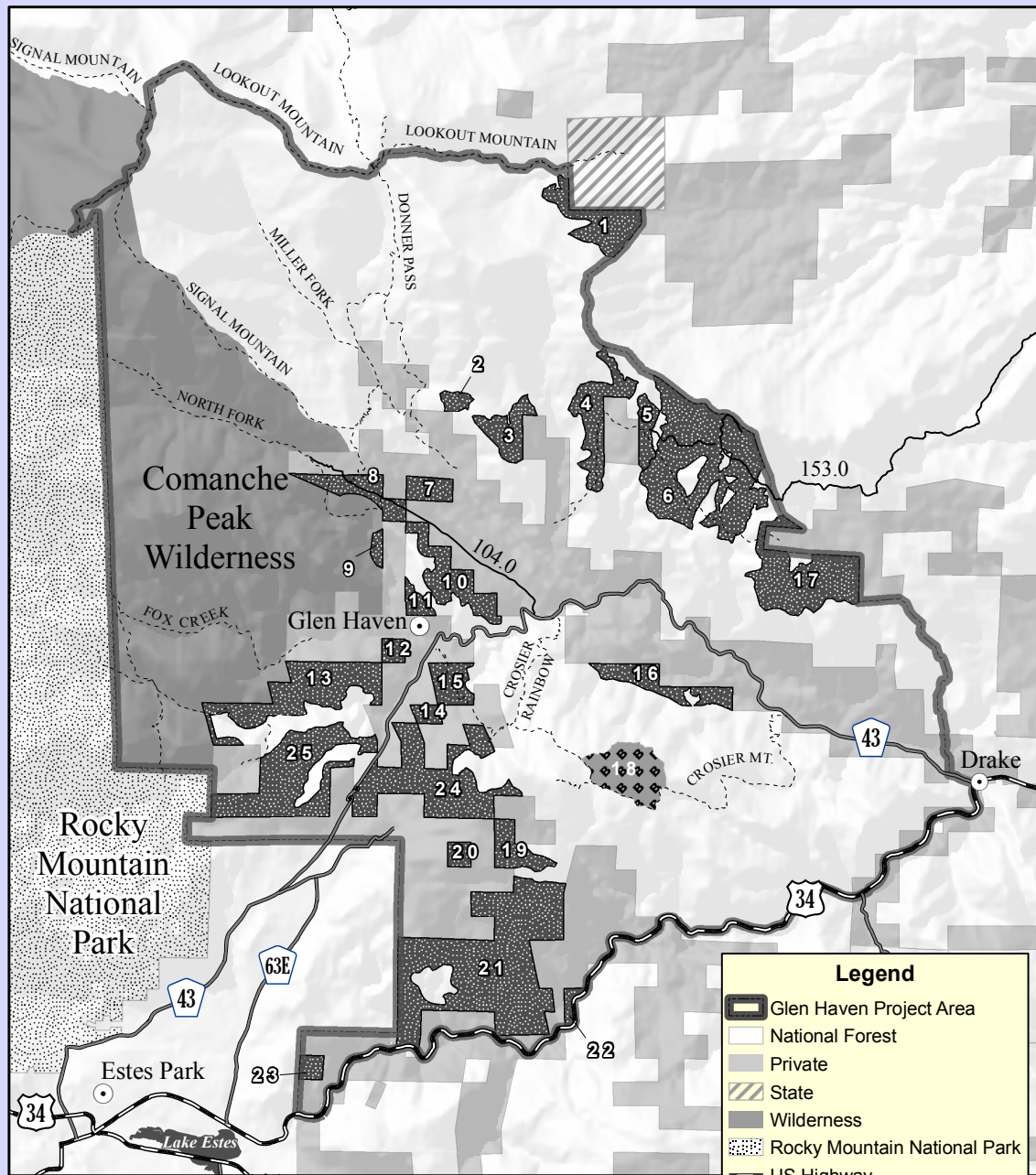
Priority 4: Community Readiness for Evacuation

Unfortunately, many Glen Haven residents who were present for the 2013 flood have experience with being evacuated. However, since that time many new residents have arrived. Evacuation readiness includes having reverse 911 capability for rapid notification, having an individual written evacuation plan, and having safe egress. A community workshop to help develop individual wildfire plans will be held as part of the 2020 Community Wildfire Day and repeated periodically over the years to reach new residents. The Glen Haven Evacuation Plan will also be reviewed and updated. An evacuation drill will be conducted during a future Wildfire Preparedness day.

Priority 5: Mitigation of Adjacent Public Lands

Glen Haven is surrounded by public lands that are undeveloped forest. The risk of a wildfire on adjacent public land impacting Glen Haven is high. While community actions to create fuel reduction zones and mitigate roadsides will help to slow the spread of wildfire on private land, they will never eliminate the risk. Therefore, the USFS has a collaborative burn unit plan that outlines manual fuel reduction efforts for the entire Big Thompson watershed (see below) and has resulted in thousands of slash piles being created and burned in Glen Haven in 2019 and 2020 with more being planned. The USFS has begun a multiyear plan to mitigate forest land adjacent to Glen Haven and other communities in the Big Thompson watershed. Pictured below is the USFS Collaborative Burn Unit Plan:

Glen Haven Fuels Reduction Project



Legend

- Glen Haven Project Area
- National Forest
- Private
- State
- Wilderness
- Rocky Mountain National Park
- US Highway
- County Road
- Trails

Proposed Treatment Areas

- Broadcast Burn
- Thin

Proposed Action

USFS Collaborative Burn Unit Plan for Glen Haven

Appendix

Firewise Community Risk Assessment for Glen Haven

