



DUCK CREEK BASIN COMMUNITY WILDFIRE PROTECTION PLAN

Prepared by:



NEVADA DIVISION
OF FORESTRY

DUCK CREEK BASIN COMMUNITY WILDFIRE PROTECTION PLAN

THE DUCK CREEK BASIN COMMUNITY WILDFIRE PROTECTION PLAN WAS DEVELOPED UNDER THE PLANNING GUIDANCE OF THE HEALTHY FOREST RESTORATION ACT OF 2003. THIS COMMUNITY WILDFIRE PROTECTION PLAN REPRESENTS THE EFFORTS AND COOPERATION OF A NUMBER OF ORGANIZATIONS AND AGENCIES THROUGH THE COMMITMENT OF PEOPLE WORKING TOGETHER TO IMPROVE PREPAREDNESS FOR WILDFIRE EVENTS IN DUCK CREEK WHILE REDUCING FACTORS OF RISK. THIS IS A SUPPORTING PLAN TO THE WHITE PINE COUNTY COMMUNITY WILDFIRE PROTECTION PLAN.



White Pine County Emergency Manager

MARCH 28, 2023

Date



White Pine County Fire District

22 Mar 2023

Date

ROBBIE MCABOY Digitally signed by ROBBIE MCABOY
Date: 2023.09.19 18:25:47 -0700

Bureau of Land Management

September 19, 2023

Date

Nevada Division of Forestry State Forester

Date

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INTRODUCTION

The purpose of the Duck Creek Basin Community Wildfire Protection Plan is to protect human life and reduce property loss due to catastrophic wildland fire. The Community Wildfire Protection Plan identifies and prioritizes Wildland/Urban Interface areas within Duck Creek Basin and McGill hazardous fuels reduction treatments and recommends methods for achieving hazardous fuels reductions. In addition, the plan outlines measures for reducing fire danger to the structures throughout Duck Creek Basin and surrounding communities, such as the town of McGill which is located just over the mountain ridge.

The Duck Creek Basin Community Wildfire Protection Plan is a supporting plan to the White Pine County Hazard Mitigation Plan, which includes the town of Ely and McGill. The Community Wildfire Protection Plan was developed under direction of the Nevada Division of Forestry, White Pine County Emergency Services in conjunction with representatives from the following agencies: Bureau of Land Management and United States Forest Service.

In order to accomplish the goals of the Community Wildfire Protection Plan, community leaders can assist by promoting and adopting the recommendations and strategies of the Firewise USA program, which include encouraging all residents living in the Wildland/Urban interface area to become acquainted with “Firewise USA” mitigation strategies to protect their property from wildfire hazards. In addition, community leaders can promote growth in a sustainable, hazard-free manner by incorporating Fire Mitigation Strategies into existing zoning ordinances, land use planning, and building code standards to ensure development will not put people in danger or increase threats to existing properties.

Duck Creek Basin is located in White Pine County, Nevada just to the northeast of McGill, Nevada. Duck Creek Basin is located high on the Schell Creek Range in eastern Nevada. It sits at an elevation of 8,500 feet approximately 10 miles from Ely, NV. The Schell Creek Range contains some of the most dramatic scenery in Eastern Nevada. There are many high peaks over 11,500 ft. with stark windswept ridges. Deep canyons and remote valleys flow from these high ridges, with dramatic limestone cliffs and vast stands of aspen. Ancient Bristlecone pines and equally impressive Limber Pines are present in the higher elevation forests. Opportunities for solitude and primitive recreation abound. Hikers and horseback riders can enjoy the primitive trails and backcountry skiers explore this area in the winter. This mountain range supports diverse wildlife and is an important North-South corridor of uninterrupted wild land. This area is also home to the largest Elk herd in the state of Nevada. Duck Creek was the site of a sizeable ranching settlement formed in the late 1860's. Although some ore was discovered in 1869, ranching was the main industry of Duck Creek. The settlement had a constant population of 50 for many years. After the turn of the century, a twice a week stage line to Ely was organized. Some mining activity took place between 1905 and 1921 and the population has fallen off and there are a few active ranches remaining.

As rapid development continues with growing numbers of residents, tourists, increased recreational activity daily, the projects listed will focus on proactive mitigation of wildfire hazards including current open space and forest fuel types. The community involvement and review involved in the approval of this current document is expected to achieve the requirements for a Community Wildfire Protection Plan [CWPP].

Field assessments were completed, and treatment recommendations developed for implementation and completion of work over a one-to-five-year planning horizon. Several key goals were identified during the development of this project and include the following:

- Protect lives and property from wildland fire.
- Increase resident and public understanding of living in a fire-adapted ecosystem.
- Raise community awareness of the issues of living in the wildland urban interface of eastern Nevada and promote support for the recommended measures to reduce wildfire risk.
- Identify and prioritize areas for hazardous fuels reduction treatments; and
- Implement a fire fuels maintenance program.

Community Descriptions & Natural Environment

Climatic Factors, Topography & Exposure

Average annual high temperature: 68°F. Average annual low temperature: 37°F: 68 Days per year with precipitation lower than 97% of other locations. Average annual precipitation 1.22 inch: Av. annual snowfall: 5.74 inches

Weather Highlights

Summer High: the July high is around 86 degrees

Winter Low: the January low is 18

Rain: averages 1.22 inches of rain a year

Snow: averages 5.74 inches of snow a year.

Most moisture in Duck Creek Basin and surrounding communities falls in the form of snow during the winter months, then transitions to rain in the spring. While spring, summer and fall months are relatively dry with isolated thunderstorms, Duck Creek Basin often experiences “dry lightning” storms. Along with more extensive drought periods noted over the past several years, which stresses vegetation and limited water resources, these climate factors contribute to a higher frequency of wildfire ignitions throughout the year.

The terrain in Duck Creek Basin is steep and varied. The slopes range from 10-20% within this area and increase eastward to the High Schell’s Wilderness Area. The High Schell’s Wilderness rises majestically about 10 miles east of Ely, Nevada. This long and lofty range, with lingering snowbanks, marches above timberline for miles, reaching 11,880 feet at North Schell Peak. Taft and South Schell Peaks join in dominating the view. Rimrock, talus slopes and cliffs fall away into broad basins where clear streams

run. The west-side canyons are lovely. Aspen and conifers line the many creeks that plummet off the high benchlands.

Views

To the east, canyons swoop down into Spring Valley, a vertical mile below. The east-side canyons are deeply incised and often heavily wooded, with riparian thickets along stream banks. Looking southeast is a striking view of Wheeler Peak and the South Snake Range: a mountain island surrounded by desert valleys.

Wildlife

Elk, mule deer, and mountain lion thrive in forests of quaking aspen, Douglas and White Fir, Englemann Spruce, Limber and Bristlecone Pine, while golden eagles soar the updrafts along the crest. Riparian vegetation provides key habitat for blue grouse, sage grouse, chukar and many other species. Perennial streams throughout the area support populations of rainbow and brown trout. Fishing, big game and upland game bird hunting are popular activities here.

Archeology

Archeological sites include petroglyphs and lithic scatters. The "Labor of Love" cave, containing the 10,000-year-old remains of a cave bear, was discovered in 1982.

Fire

Mountain to valley wind patterns strongly influence fire behavior. Fire intensity and spread rate depends on the fuel type and condition [i.e.] live vs. dead fuels, weather conditions prior to and during an ignition, and the topography. Generally, the following relationships hold between the fire behavior and fuel, weather, and topography:

- Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel type, the more there is and the more continuous it is, the faster a fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels.
- Weather conditions affect the moisture content of dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower the fuel moisture content. Lower fuel moistures produce higher spread rates and fire intensities.

Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity.

- Topography influences fire behavior principally by the steepness of the slope; however, topography and terrain features such as narrow draws and saddles, can influence fire spread and intensity. In general, the steeper the slope, the faster a fire spreads uphill and with greater intensity.

Home Ignition Zone

Duck Creek Basin is located in a wildfire environment that is similar to most of Eastern Nevada and the Great Basin. It is not a matter of "if" a wildfire will occur, it's when, where, and how intense and severe the wildfire will be. This assessment addresses Duck Creek Basin's wildfire-related characteristics, ignition potential and the community's exposure to wildfire, both in terms of individual homes, and even more so in reference to neighborhoods, associated open space and the community as a whole.

There are approximately 64 homes scattered throughout Duck Creek Basin. These homes vary from ranches to homes being tucked into wooded areas into the surrounding wilderness area. The Elk Springs Subdivision is located south of Duck Creek Basin and makes up 24 of the Duck Creek's residents.

Ignition risks for wildfires fall into two categories: lightning and human caused. Human caused ignitions can come from a variety of sources [i.e.] fires started along highways and roads from burning material thrown out of vehicle windows, or ignited during auto accidents, off-road vehicles, arcing power lines, agricultural fires, ditch burning, debris burning in piles or burn barrels, burning matches, target shooting, and fireworks, to name a few.

Duck Creek Basin vegetation is comprised of black, Wyoming, mountain and low sagebrush, willows, and grasses. The east-side canyons are deeply incised and often heavily wooded, with riparian thickets along stream banks.

A house burns because of its interrelationship with the surrounding landscape, the house or structure construction, and its immediate physical surroundings, which is termed the “home ignition zone.” To reduce the potential for a home ignition, homeowners should focus on mitigating wildfire’s possibility to consume the home. While there are no guarantees, altering a wildfire’s path and intensity through vegetation management and fuels reduction can minimize potential loss of life or property. Proactive removal of flammable vegetation adjacent to the home and reducing the volume and density of the vegetation around a structure prevents direct flame contact. Duck Creek Basin homeowners have the ability to take specific actions to protect their homes from wildfire.

Partner Agencies and Collaborations

The CWPP plan area has a strong cadre of fire management agencies that have a long history of cooperation and partnerships in wildfire suppression and prevention. The partner fire agencies in the plan area all work cooperatively to provide the most successful response to wildland fire and hazardous fuels reduction. This includes sharing of resources, combined interagency dispatch centers, the utilization of closest forces regardless of jurisdiction, and providing training to all Nevada fire suppression forces.

A core planning group was created with representatives from fire agency personnel from the Nevada Division of Forestry (NDF), the Bureau of Land Management (BLM), the White Pine County Fire District and White Pine County Emergency Manager. This group developed the recommendations brought forward in this CWPP Update. In addition to specific recommendations that address conditions in Duck Creek Basin, recommendations are included to address conditions and needs common to all communities. Meeting the objectives of this CWPP to support and expand Fire Adapted Communities, engage all stakeholders in preparing to withstand wildfire without loss of life or property, improving firefighter safety and suppression effectiveness, and continuing education for homeowners on defensible/survivable space strategies depend upon continued public involvement to accomplish the recommendations described in this CWPP Update.

Wildland Fire History & Characteristics

The Paine Fire in Duck Creek Basin in July 2018 burned 727 acres. This fire was human caused and consumed priority Greater Sage Grouse habitat and burned into the High Schells Wilderness. The Range fire in July 2012 burned 4,635 acres, threatening the Duck Creek Basin residents as the fire started moving over the ridgeline into the basin. The North Creek fire in April 2020 was sparked by lightning and burned 160 acres. This fire was located approximately 1 mile from the north end of Duck Creek Basin community. The Middle Creek fire in September 2020 was also a lightning ignited fire burning 151 acres. This fire was also located approximately 1 mile from the community. The North Schell fire in June 2012 which was human caused burned 11,652 acres and was located approximately 5 miles from Duck Creek Basin. The

primary fuels for these fires are grass, brush, pinion-juniper, mountain mahogany and white fir. This just proves how unprepared the community is for a catastrophic wildfire.

Consequences are numerous, including loss of life, property loss and lowered property values, high fire suppression costs, economic losses, and lengthy and costly post-fire rehabilitation. Environmental impacts can also be extensive including increased soil erosion, flooding, water quality impacts, loss of wildlife habitat and aesthetics, and overall watershed degradation.

Community Fuel Types

There are a variety of vegetation types in Duck Creek Basin and community, including sagebrush, willows, grasses and conifers. The sagebrush, dead/dying willows and grasses are considered high fuel hazards. Upper elevation vegetation is mixed conifer of quaking aspen, Douglas and white fir, Engelmann spruce, pinyon pine, juniper, limber and bristlecone pine. The pattern in cool moist mixed conifer has added complexity, due to the presence of competing tree species. Fire exclusion has caused forest densification and a shift in tree species dominance from Engelmann spruce and Limber and Bristlecone pines toward white fir (*Abies concolor*) and Douglas-fir (*Pseudotsuga menziesii*). Historically, fire gave these species a competitive edge over the other species found in the warm-dry mixed conifer. Forest studies have shown that fire intervals range in the multi-decadal to century time scale in the cool moist mixed conifer, with evidence of both surface and crown fire (Grissino-Mayer et al. 2004; Wu 1999). Fires in cool-moist mixed conifer forests were not fuel-limited systems because these productive mesic sites always have enough live and dead fuels to carry fire. Fuel moisture, linked to climate, was the most limiting factor. Intra-annual drying (i.e., seasons) creates a potential for fire in most years. During typical seasonal climate and weather patterns, fires were probably predominantly surface fires with limited high intensity patches. The sizes of those fires ranged from small to large. Larger fires with a greater ratio of crown fire to surface fire area would burn in significantly dry years. Overall size, intensity, and severity of any fire would depend on fuel moisture, weather conditions, and climate context. This fire regime promotes a complex and heterogeneous forest. Lack of fuel/forest management increased the risk of wildfire. Many extreme fires across the West are being fueled by overgrown forests, where dense vegetation has accumulated over a century of fire suppression. In recent years, the Forest Service has worked to reduce that risk by using fire proactively.

If left undisturbed for long periods of time (i.e., 30 to 50 years) without the occurrence of fire to remove or setback shrub density and canopy expanse, the elevated tree/shrub canopy in these native plant communities will increase to the extent where the shrub component will readily carry fire under benign weather and wind conditions. Fuel loading levels occurring in over-mature tree/sagebrush stands can become very high and result in extreme fire behavior when ignition occurs. Selective thinning, trimming and removal of dead woody biomass in these plant communities will help to mitigate wildfire risk over time. Firebrands and embers are picked up and spread up to a mile ahead of the actual flame front, igniting spot fires where they land. Vegetated open spaces in developed residential communities become receptive fuel beds and can quickly spread wildfire throughout the development, threatening homes, and infrastructure. Topography and prevailing winds increase wildfire risks considering the exposure, topography and climatic factors found in Duck Creek Basin.

Mechanical thinning

Along with prescribed burns and hand removal of forest debris, mechanical thinning is one of the most important tools to reduce fire risk in our national forests. It is used to restore more natural forest structure with a focus on tree density, tree species distribution, tree age distribution and natural gaps in the canopy. Fuel reduction can help lessen the possibility of high-intensity crown fires.

Community Wildfire Fuels Assessment for Duck Creek Basin and McGill

Assessment Findings

Nevada Division of Forestry did a Community Risk Assessment on February 27, 2023. The report's Suppression Assessment section included factors on road width and accessibility for ingress and egress; water supply and infrastructure; local response resources and community governance; etc. A total of 15,032.53 acres of the community was assessed.

☐ The Surrounding Environment Assessment section included factors on vegetation; adjacency to wildlands; defensible space; geographic and topographic features; etc.

Community Wildfire Risk Assessment Duck Creek Basin

Total Assessed Rating

166 - High

Suppression Rating

High Hazard

Surrounding Environment Rating

High Hazard

Structures Rating

High Hazard

Fire Protection District

White Pine County

Fireshed(s)

Headwaters Duck Creek

Community Information

Latitude 39° 25' 11"

Longitude -114° 41' 48"

Dwelling Units 37



Size 15,032.53 acres

Community Type Residential - Mixed

Assessed By: Adam Strouse

Assessment Date: 02-27-2023





SUPPRESSION ASSESSMENT

Ingress and Egress

- 2 or more roads in/out with NO response/evacuation complexity
- 2 or more roads in/out with SLIGHT response/evacuation complexity
- 2 or more roads in/out with MODERATE/HIGH response/evacuation complexity
- **One road in and out (entrance and exit is the same)**

Recommended Mitigation Strategies

- Keep community ingress/egress open and maintained (cleared of vegetation, vehicles, and/or any obstructions)
- Consider developing safety zones and a plan for Shelter-in-Place; consult with Local Fire Department
- Consider adding a secondary ingress / egress route for use in emergencies

Road Width

Road width is > 24 feet

→ **Road width is > 20 feet and < 24 feet**

Road width is < 20 feet

Recommended Mitigation Strategies

- Keep shoulders of road clear for emergency vehicle use at all times
- Consider providing pull-offs every 100 yards

Road Accessibility

→ **Surfaced road**

Non-surfaced road, grade less than or equal to 5%

Non-surfaced road, grade greater than 5%

Non-maintained dirt road

Recommended Mitigation Strategies

- Ensure that road maintenance plan is in place

Secondary Road Terminus

Roads ends in a cul-de-sac, diameter > 100 feet

Roads ends in a cul-de-sac, diameter < 100 feet

→ **Dead end roads <200 feet long**

Dead end roads >200 feet long

Recommended Mitigation Strategies

- Ensure emergency responder are aware of dead-end roads; Consider signing all dead ends.

Street Signs

Present throughout, lettering 4 inches high, non-flammable and reflective

Inconsistent throughout, lettering 4 inches high, non-flammable and reflective

→ **Present or inconsistent but wooden, non-reflective, or lettering less than 4"**

Not present

Recommended Mitigation Strategies

- Consider upgrading to reflective, noncombustible street signs to improve emergency response efforts
- Keep street signs visible and clear of vegetation and fine fuels

Driveways

→ **Average driveway allows access to homes**

Average driveway restricts access to homes

Recommended Mitigation Strategies

- Maintain driveway access and clearance

Water Supply

Pressurized hydrants spaced less than 1000 feet apart

Pressurized hydrants spaced more than 1000 feet apart

Dry Hydrant(s) / Draft available within the community

→ **Other accessible sources within community (pond, lake, etc.)**

Water sources located within 4 miles of community (incl Heli dip sites)

No water sources in or within 4 miles of the community

Recommended Mitigation Strategies

- Coordinate with fire department and landowners to train/test use of local water sources (e.g. ponds, lakes)

Geographic Features

→ **No notable geographical features present to hinder fire suppression**

Suppression efforts hindered by geographical features (e.g., hazardous terrain)

Recommended Mitigation Strategies

- Be aware of local geographic features and plan appropriately in the event of a wildfire approaching your area; consider pre-suppression plan

Local Response Resources

5 mi. or less from Agency with Response Authority (Staffed FD)

5 mi. or less from Agency with Response Authority (Mixed Staff/VFD)

5 mi. or less from Agency with Response Authority (VFD)

→ **> 5 mi. from Agency with Response Authority FD**

Recommended Mitigation Strategies

- Establish and maintain contact with the closest Fire Department; consider pre-suppression plan
- Discuss with closest Fire Department to identify quicker response strategies and other potential solutions

Community Organization/Governance

GID present; HAS structure for sustained fire prevention and mitigation

HOA present; HAS structure for sustained fire prevention and mitigation

Municipal govt present; HAS structure for sustained fire prevention and mitigation

GID present; LACKS structure for sustained fire prevention and mitigation

HOA present; LACKS structure for sustained fire prevention and mitigation

Municipal govt present; LACKS structure for sustained fire prevention and mitigation

→ **Lacks any structure for sustained fire prevention and mitigation**

Recommended Mitigation Strategies

- Work with community to become more proactive towards protecting your life and property against wildfires; Become a Firewise USA® Site
- Host a Community Education Event at least once a year
- Complete Community Risk Mitigation Project(s) as identified by Community Action Plan
- Ensure individual homes are ignition-resistant, hardened, and Firewise/Living with Fire concepts are followed

SURROUNDING ENVIRONMENT ASSESSMENT

Predominant Vegetation

- Light (grass)
- Medium (brush)
- Heavy (timber, overgrown sage, Pinyon/Juniper with dead/down, etc.)

→ **Extreme / Slash (Any Combination of contiguous Light, Medium, Heavy)**

Recommended Mitigation Strategies

- Identify heavy fuel areas (jackpots) and consider removal or breaking them up
- Consider removal of ladder fuels that allow fire to climb from lower to higher vegetation
- Trim tree canopies regularly to keep their branches a minimum of 10' from structures and other trees
- Leave 30 feet between clusters of two to three trees, or 20 feet between individual trees
- Prune trees 6-10 feet from the ground

Defensible Space

> 75% of homes meet criteria in Zone 0, 1 & 2

→ **50 to 75% of homes meet criteria in Zone 0, 1 & 2**

< 50% of homes meet criteria in Zone 0, 1 & 2 - Light fuels amongst structures

< 50% of homes meet criteria in Zone 0, 1 & 2 - Moderate fuels amongst structures

Fuels heavy/extreme amongst structures & other urban hazards/materials are present

Recommended Mitigation Strategies

- Be aware of the risks from falling embers in relation to nearby fuels and defensible space
- Mow lawns regularly
- Water grass, plants, trees, and mulch regularly
- Create a spacing of 30 feet between tree crowns
- Create a non-combustible area (zone 0) within 5 feet of your home, using non-flammable landscaping materials
- Remove dead vegetation from under the deck and within 10 feet of the house; stack firewood away from structures
- Consider xeriscaping
- Plant a mixture of deciduous trees (e.g., oak and maple) and coniferous trees (e.g. pine)
- Create fuel breaks like driveways and gravel walkways

Structure-to-Structure Ignition

No Possible Structure-to-Structure Ignition

→ **Possible Structure-to-Structure Ignition**

Recommended Mitigation Strategies

- Work with neighbors to remove/prune vegetation between houses to mitigate structure-to-structure ignition risk; consider non-combustible fencing 5 feet from structure
- Consider use of sprinkler systems to keep vegetation moisture levels up
- Replace flammable roofs, siding, soffits, etc. with nonflammable when possible

Slope

Slope 0% - 5%

→ **Slope 6% - 10%**

Slope 11% - 30%

Slope > 31%

Recommended Mitigation Strategies

N/A

Vegetation on Electric Transmission Lines

No above ground electric transmission lines present

→ **Above ground electric transmission lines are maintained**

Above ground electric transmission lines are NOT maintained

Recommended Mitigation Strategies

Know who to call should there be a problem with electric lines in community

Topographical Features

→ **No topographical features adversely affect wildland fire behavior**

Topographical features adversely affect wildland fire behavior (box canyons, chimneys, etc.)

Recommended Mitigation Strategies

N/A

Adjacency to Wildlands

Not adjacent to wildlands with accumulated fuels

→ **Adjacent to wildlands with accumulated fuels**

Recommended Mitigation Strategies

When possible, install firebreaks and reduce fuel loads around community boundary to reduce risk from adjacent wildlands; Work with neighboring landowners

Undeveloped Lots with Restricted Access and/or Not Maintained

Fewer than 10% of lots are undeveloped

10% to 30% of lots are undeveloped

→ **31% to 50% of lots are undeveloped**

Greater than 51% of lots are undeveloped

Recommended Mitigation Strategies

- Provide Living with Fire/Firewise construction guidelines to developers /owners
- Consider developing covenant restrictions, if applicable

STRUCTURES ASSESSMENT

Roofing Materials

→ **> 75% of homes have metal, tile or class A asphalt or fiberglass shingles**

50 to 75% of homes have metal, tile or class A asphalt or fiberglass shingles

< 50% of homes have metal, tile or class A asphalt or fiberglass shingles

Recommended Mitigation Strategies

- Use fire-resistant roofing material such as metal, tile or Class A shingles
- Inspect for and address gaps in roofing that can expose roof decking or supports
- Place angle flashing over openings between the roof decking and fascia board

Debris on Roof and/or Gutters

No

→ **Yes**

Recommended Mitigation Strategies

- Clear branch, leaf-litter and other debris from roof and gutters regularly
- Prune tree limbs away from roof

Ventilation and Soffits

→ **> 75% of homes have non-combustible ventilation soffits with mesh or screening**

50-74% of homes have non-combustible ventilation soffits with mesh or screening

< 50% of homes have non-combustible ventilation soffits with mesh or screening

Recommended Mitigation Strategies

- Clean vents to keep them free of debris, allowing them to keep embers out while allowing air flow for ventilation
- Enclose or box-in eaves with non-combustible materials such as metal, cement board or stucco
- Install a 1/8-inch metal screen behind roof vents

Siding

> 75% of homes have non-combustible siding

50-74% of homes have non-combustible siding

→ **< 50% of homes have non-combustible siding**

Recommended Mitigation Strategies

- Keep landscaping materials and vegetation away from combustible siding
- Create 5-foot non-combustible area (Zone 0) around house
- Replace with noncombustible siding when possible

Underskirting

> 75% of homes have skirting underneath raised floors/decks

50-74% of homes have skirting underneath

→ **< 50% of homes have skirting underneath**

Recommended Mitigation Strategies

- Remove combustible vegetation and leaf litter
- Spread gravel or other non-combustible material under the deck
- Screen in the bottom of the deck with metal 1/8-inch screening

- Separate wooden fences from the house with a stone or metal barrier

Wooden Attachments

> 75% of homes have NO Wooden Attachments

→ **50-74% of homes have NO Wooden Attachments**

< 50% of homes have NO Wooden Attachments

Recommended Mitigation Strategies

- Maintain debris-free decks (e.g., remove ignitable furniture, planters and covering propane grills, especially during high fire danger periods)
- Consider disconnecting fences from structures, or replacing materials directly attached to structures with fire resistant materials
- Be aware that wooden attachments can act as a fuse to the structure

Building Setback

→ **Not applicable**

Greater than or equal to 30 feet from slope

Less than 30 feet from slope

Recommended Mitigation Strategies

- N/A

Propane

→ **> 30 feet from the house and surrounding vegetation maintained**

Fewer than 30 feet from the house and/or surrounding vegetation not maintained

N/A

<i>Recommended Mitigation Strategies</i>
<input type="checkbox"/> N/A

Electric Utilities
Electric Underground
→ Electric Overhead drop maintained
Electric Overhead drop not maintained
<i>Recommended Mitigation Strategies</i>
<input type="checkbox"/> Keep vegetation pruned and mowed around electric cabinets
<input type="checkbox"/> Place non-flammable mulch (rock, stone) around base of electrical cabinets
<input type="checkbox"/> Plant less flammable bushes and shrubs around electrical cabinets

Non-Combustible Zone 0
> 75% of homes/outbuildings have adjacent 5-ft non-combustible zone
→ 50-74% of homes/outbuildings have adjacent 5-ft non-combustible zone
< 50% of homes/outbuildings have adjacent 5-ft non-combustible zone
<i>Recommended Mitigation Strategies</i>
<input type="checkbox"/> N/A

COMMENTS
Main road is paved approximately 2/3 of the area, then it turns to a lightly maintained dirt road. All driveways are dirt. No fire hydrants in the area. There are two ponds located on private property. Some of the homes have agricultural fields near, or around them. Streams are scattered throughout the area. Limited access to structures during winter months due to snow accumulation and poor road maintenance.

Community Wildfire Risk Assessment

Total Assessed Rating

105 - High

Suppression Rating

Moderate Hazard

Surrounding Environment Rating

Moderate Hazard

Structures Rating

High Hazard

Fire Protection District

White Pine County

Fireshed(s)

Upper Duck Creek



Community Information

Latitude 39° 24' 15"

Longitude -114° 46' 40"

Dwelling Units 20

Size 611.09 acres

Community Type Residential - Mixed

Assessed By: Adam Strouse

Assessment Date: 09-14-2023



SUPPRESSION ASSESSMENT

Ingress and Egress

2 or more roads in/out with NO response/evacuation complexity

→ **2 or more roads in/out with SLIGHT response/evacuation complexity**

2 or more roads in/out with MODERATE/HIGH response/evacuation complexity

One road in and out (entrance and exit is the same)

Recommended Mitigation Strategies

- Keep community ingress/egress open and maintained (cleared of vegetation)
- Develop community plan for evacuation routes, safe zones, staging areas
- If community is gated, develop evacuation plan and ensure emergency responder access
- Ensure residents know their closest exit in case of emergency
- Ask Local Fire Department about Ready, Set, Go!

Road Width

Road width is > 24 feet

→ **Road width is > 20 feet and < 24 feet**

Road width is < 20 feet

Recommended Mitigation Strategies

- Keep shoulders of road clear for emergency vehicle use at all times
- Consider providing pull-offs every 100 yards

Road Accessibility

→ **Surfaced road**

Non-surfaced road, grade less than or equal to 5%

Non-surfaced road, grade greater than 5%

Non-maintained dirt road

Recommended Mitigation Strategies

- Ensure that road maintenance plan is in place

Secondary Road Terminus

Roads ends in a cul-de-sac, diameter > 100 feet

Roads ends in a cul-de-sac, diameter < 100 feet

Dead end roads <200 feet long

→ **Dead end roads >200 feet long**

Recommended Mitigation Strategies

- Ensure emergency responders are aware of dead-end roads; Consider signing all dead ends.
- If dead-end roads are narrow, restrict access during an emergency

Street Signs

→ **Present throughout, lettering 4 inches high, non-flammable and reflective**

Inconsistent throughout, lettering 4 inches high, non-flammable and reflective

Present or inconsistent but wooden, non-reflective, or lettering less than 4"

Not present

Recommended Mitigation Strategies

- Keep street signs visible and clear of vegetation and fine fuels

Driveways

→ **Average driveway allows access to homes**

Average driveway restricts access to homes

Recommended Mitigation Strategies

- Maintain driveway access and clearance

Water Supply

Pressurized hydrants spaced less than 1000 feet apart

→ **Pressurized hydrants spaced more than 1000 feet apart**

Dry Hydrant(s) / Draft available within the community

Other accessible sources within community (pond, lake, etc.)

Water sources located within 4 miles of community (incl heli dip sites)

No water sources in or within 4 miles of the community

Recommended Mitigation Strategies

N/A

Geographic Features

→ **No notable geographical features present to hinder fire suppression**

Suppression efforts hindered by geographical features (e.g. hazardous terrain)

Recommended Mitigation Strategies

- Be aware of local geographic features and plan appropriately in the event of a wildfire approaching your area; consider pre-suppression plan

Local Response Resources

→ **5 mi. or less from Agency with Response Authority (Staffed FD)**

5 mi. or less from Agency with Response Authority (Mixed Staff/VFD)

5 mi. or less from Agency with Response Authority (VFD)

> 5 mi. from Agency with Response Authority FD

Recommended Mitigation Strategies

- Establish and maintain contact with the closest Fire Department; consider pre-suppression plan
- Be aware of the importance of early detection and reporting of any emergency

Community Organization/Governance

GID present; HAS structure for sustained fire prevention and mitigation

HOA present; HAS structure for sustained fire prevention and mitigation

Municipal govt present; HAS structure for sustained fire prevention and mitigation

GID present; LACKS structure for sustained fire prevention and mitigation

HOA present; LACKS structure for sustained fire prevention and mitigation

→ **Municipal govt present; LACKS structure for sustained fire prevention and mitigation**

Lacks any structure for sustained fire prevention and mitigation

Recommended Mitigation Strategies

- Work with community to become more proactive towards protecting your life and property against wildfires; Become a Firewise USA® Site
- Host a Community Education Event at least once a year; Become a Firewise USA® Site
- Complete Community Risk Mitigation Project(s) as identified by Community Action Plan

SURROUNDING ENVIRONMENT ASSESSMENT

Predominant Vegetation

Light (grass)

→ **Medium (brush)**

Heavy (timber, overgrown sage, Pinyon/Juniper with dead/down, etc)

Extreme / Slash (Any Combination of contiguous Light, Medium, Heavy)

Recommended Mitigation Strategies

- Consider removal of ladder fuels that allow fire to climb from lower to higher vegetation
- Trim tree canopies regularly to keep their branches a minimum of 10' from structures and other trees
- Leave 30 feet between clusters of two to three trees, or 20 feet between individual trees
- Prune trees 6-10 feet from the ground

Defensible Space

→ **> 75% of homes meet criteria in Zone 0, 1 & 2**

50 to 75% of homes meet criteria in Zone 0, 1 & 2

< 50% of homes meet criteria in Zone 0, 1 & 2 - Light fuels amongst structures

< 50% of homes meet criteria in Zone 0, 1 & 2 - Moderate fuels amongst structures

Fuels heavy/extreme amongst structures & other urban hazards/materials are present

Recommended Mitigation Strategies

- Be aware of the risks from falling embers in relation to nearby fuels and defensible space
- Mow lawns regularly
- Water grass, plants, trees and mulch regularly
- Create a spacing of 30 feet between tree crowns
- Create a non-combustible area (zone 0) within 5 feet of your home, using non-flammable landscaping materials

- Remove dead vegetation from under the deck and within 10 feet of the house; stack firewood away from structures
- Consider xeriscaping

Structure-to-Structure Ignition

No Possible Structure-to-Structure Ignition

→ **Possible Structure-to-Structure Ignition**

Recommended Mitigation Strategies

- Work with neighbors to remove/prune vegetation between houses to mitigate structure-to-structure ignition risk; consider non-combustible fencing 5 feet from structure
- Consider use of sprinkler systems to keep vegetation moisture levels up
- Replace flammable roofs, siding, soffits, etc. with nonflammable when possible

Slope

Slope 0% - 5%

Slope 6 % - 10%

→ **Slope 11% - 30%**

Slope > 31%

Recommended Mitigation Strategies

- Increase defensible space in areas with steeper slopes

Vegetation on Electric Transmission Lines

No above ground electric transmission lines present

→ **Above ground electric transmission lines are maintained**

Above ground electric transmission lines are NOT maintained

Recommended Mitigation Strategies

- Know who to call should there be a problem with electric lines in community

Topographical Features

→ **No topographical features adversely affect wildland fire behavior**

Topographical features adversely affect wildland fire behavior (box canyons, chimneys, etc.)

Recommended Mitigation Strategies

- N/A

Adjacency to Wildlands

Not adjacent to wildlands with accumulated fuels

→ **Adjacent to wildlands with accumulated fuels**

Recommended Mitigation Strategies

- When possible, install firebreaks and reduce fuel loads around community boundary to reduce risk from adjacent wildlands; Work with neighboring land owners

Undeveloped Lots with Restricted Access and/or Not Maintained

→ **Fewer than 10% of lots are undeveloped**

10% to 30% of lots are undeveloped

31% to 50% of lots are undeveloped

Greater than 51% of lots are undeveloped

Recommended Mitigation Strategies

- Provide Living with Fire/Firewise construction guidelines to developers /owners
- Consider developing covenant restrictions, if applicable

STRUCTURES ASSESSMENT

Roofing Materials

→ **> 75% of homes have metal, tile or class A asphalt or fiberglass shingles**

50 to 75% of homes have metal, tile or class A asphalt or fiberglass shingles

< 50% of homes have metal, tile or class A asphalt or fiberglass shingles

Recommended Mitigation Strategies

- Use fire-resistant roofing material such as metal, tile or Class A shingles
- Inspect for and address gaps in roofing that can expose roof decking or supports
- Place angle flashing over openings between the roof decking and fascia board

Debris on Roof and/or Gutters

No

→ **Yes**

Recommended Mitigation Strategies

- Clear branch, leaf-litter and other debris from roof and gutters regularly
- Prune tree limbs away from roof

Ventilation and Soffits

→ **> 75% of homes have non-combustible ventilation soffits with mesh or screening**

50-74% of homes have non-combustible ventilation soffits with mesh or screening

< 50% of homes have non-combustible ventilation soffits with mesh or screening

Recommended Mitigation Strategies

- Clean vents to keep them free of debris, allowing them to keep embers out while allowing air flow for ventilation
- Enclose or box-in eaves with non-combustible materials such as metal, cement board or stucco

- Install a 1/8 inch metal screen behind roof vents

Siding

> 75% of homes have non-combustible siding

→ **50-74% of homes have non-combustible siding**

< 50% of homes have non-combustible siding

Recommended Mitigation Strategies

- Keep landscaping materials and vegetation away from combustible siding
- Create 5-foot non-combustible area (Zone 0) around house
- Replace with noncombustible siding when possible

Underskirting

> 75% of homes have skirting underneath raised floors/decks

→ **50-74% of homes have skirting underneath**

< 50% of homes have skirting underneath

Recommended Mitigation Strategies

- Remove combustible vegetation and leaf litter
- Spread gravel or other non-combustible material under the deck
- Screen in the bottom of the deck with metal 1/8-inch screening
- Separate wooden fences from the house with a stone or metal barrier

Wooden Attachments

> 75% of homes have NO Wooden Attachments

→ **50-74% of homes have NO Wooden Attachments**

< 50% of homes have NO Wooden Attachments

Recommended Mitigation Strategies

- Maintain debris-free decks (e.g. remove ignitable furniture, planters and covering propane grills, especially during high fire danger periods)
- Consider disconnecting fences from structures, or replacing materials directly attached to structures with fire resistant materials
- Be aware that wooden attachments can act as a fuse to the structure

Building Setback

→ **Not applicable**

Greater than or equal to 30 feet from slope

Less than 30 feet from slope

Recommended Mitigation Strategies

- N/A

Propane

> 30 feet from the house and surrounding vegetation maintained

→ **Fewer than 30 feet from the house and/or surrounding vegetation not maintained**

N/A

Recommended Mitigation Strategies

- Clear ALL flammable debris and materials from around propane tank regularly
- Consider setting propane tank on concrete or gravel pad

Electric Utilities

Electric Underground

→ **Electric Overhead drop maintained**

Electric Overhead drop not maintained

Recommended Mitigation Strategies

- Keep vegetation pruned and mowed around electric cabinets
- Place non-flammable mulch (rock, stone) around base of electrical cabinets
- Plant less flammable bushes and shrubs around electrical cabinets

Non-Combustible Zone 0

> 75% of homes/outbuildings have adjacent 5-ft non-combustible zone

→ **50-74% of homes/outbuildings have adjacent 5-ft non-combustible zone**

< 50% of homes/outbuildings have adjacent 5-ft non-combustible zone

Recommended Mitigation Strategies

- N/A

COMMENTS

Most homes are old stick built mining homes brought over from Ruth, Nevada many years ago. Town sits on a fairly steep slope, which is very difficult to access in the winter months due to the slick roads. The North and South outskirts of town are covered in heavy brush and grasses. The East side of town is fairly barren, with very little vegetation. The West side of town is mostly active agricultural fields.

Water Sources and Infrastructure

All resident properties are on private wells. There are two private ponds on the old Kennecott Ranch property. There are multiple creeks throughout Duck Creek Basin, however, would not be conducive for suppression efforts.

Recommended Treatments and Projects:

Hand Thinning & Maintenance

Hand thinning involves the use of manual labor and hand tools, including shears, loppers, hoes, handsaws, weed-eaters, chainsaws, etc. to cut, trim and remove vegetation from a specific site. Typically, a treatment area is designated, vegetation is modified, and the resulting biomass is hauled off site or piled and burned.

Hand thinning as a treatment is typically used on slopes too steep for mechanized equipment, or areas too small, inaccessible, rocky, or sensitive for other treatment types. Lop and scatter is typically used in phase 1, where the trees are smaller and not too dense. Typically, shrubs and/or trees are selectively marked for trimming or removal to maintain aesthetics or ecosystem values while still reducing the threat of wildfire. Examples of treatment areas include pockets of vegetation around homes, steep slopes along conservation lands, roadways, trails, and identified areas of the golf courses. Ongoing maintenance is required to ensure the effectiveness of any fuel's treatment. A maintenance schedule should be developed in accordance with the vegetation type and desires of the community. Appendix A contains procedures and Best Management Practices (BMPs) for Hand Thinning methods.

Mechanical

There are a variety of mechanical treatments available for larger scale treatment areas, or areas that lend themselves to equipment access. A trail corridor is an example where mechanical treatments could be used to create a shaded fuel break. A "brush mower" can be utilized in conjunction with a tractor for smaller areas, or a "masticator" mounted on a track hoe are commonly used in Nevada. There are numerous cutting heads for this equipment, customized for the vegetation type. There is no disposal of woody biomass, rather it is spread on site and serves as a mulch. Design of a treatment area includes clear marking of the grass, shrubs, or trees to be removed while retaining healthier vegetation in a mosaic pattern which leaves "shrub islands". Utilizing mechanized equipment to reduce fuels and modifying vegetation allows the maintenance of a natural appearance on the landscape. Appendix A contains recommended BMPs for mechanical treatments.

Fuel Break Design & Maintenance

A fuel break may take many forms, but typically existing vegetation is reduced in a manner that slows and/or retards the spread of wildfire. In some cases, fire breaks are constructed where vegetation is completely removed down to bare ground, often tilled along highway right of ways. While bare ground is an effective fuel break it is not always acceptable within a community. Green stripping is currently being used by the BLM in the Duck Creek Basin to help with wildfire suppression.

An effective alternative is a shaded fuel break that breaks up fuel continuity, increases spacing between plant species and will slow the spread of a wildfire. The design and location of a shaded fuel break should be incorporated into the topography of the treatment area, of sufficient width for

the vegetation type, while maintaining access for maintenance. A fuel break can be designed for any scale from a property line boundary to a landscape level crossing multiple land ownership. Ongoing maintenance of fuel breaks is necessary and can be accomplished by mechanical treatment, livestock grazing or hand thinning.

Public Education & Signing

Duck Creek Basin has full time residents; however, Elk Springs Community is completely isolated in the winter months, therefore, these homes are summer/secondary residents. In addition to the projects identified in this CWPP, getting Duck Creek Basin to become a recognized FirewiseUSA® is part of these goals and much more importantly, to promote buy-in from all stakeholders to continue efforts to harden the community against wildland fire. Protecting the community is more than just on-the-ground vegetation treatments and their associated maintenance. In the past few years, most of the west has, and will continue to have wildfires that burn hundreds of thousands of acres and residents are aware that they live in an environment that is susceptible to wildfire hazards; further, Duck Creek Basin residents also understand the risk of wildfire, and that during wildfire season and periods of drought, it is everyone's responsibility to be respectful and cautious while using fire or heat producing equipment. To this end, the Nevada Division of Forestry is already proactively educating residents through notifications in the community, holding informational speakers' series events with local fire agencies, and hosting regional training exercises with numerous fire, police and emergency management agencies.

Education and Outreach

Duck Creek Basin is currently working with the Nevada Division of Forestry's Fire Adapted Nevada to continue to develop the Fire Adapted Communities approach in White Pine County. Currently, there are no FirewiseUSA® communities in White Pine County.

One of the goals of this CWPP is for Duck Creek Basin along with White Pine County to work with Fire Adapted Nevada and community leaders throughout the County and, in turn, work with their communities to implement actions to increase community safety and create more Fire Adapted Communities. Agency and community leaders see the Fire Adapted Communities approach as an excellent model for community-based outreach and education activities. This provides effective forums for member agencies to regularly meet, conduct planning, coordinate funding opportunities, project implementation, discuss the legal, political, social, and financial factors that either promote or impede community wildfire mitigation. The people in our local communities feel they have significant input into the wildland fire mitigation issue and are confident that substantial work is being completed that is materially reducing the risk posed by wildfire.

Recommendations & Priorities

The overall goal for Duck Creek Basin is to create a sustainable balance that will allow residents to live safely while maintaining environmental, quality of life, and recreational opportunities in the Wildland Urban Interface setting. It is important for individual homeowners and the Duck Creek Basin community together, to balance fire protection measures against certain flammable components, primarily vegetation. These choices directly relate to the ignitability of their home ignition zones during a wildfire incident.

The Duck Creek Basin has already begun a proactive and collaborative approach to building trust and understanding between involved homeowners, local and state fire officials. For Duck Creek Basin community to advance its efforts to become Firewise Community, an ongoing commitment is required from all stakeholders for the Duck Creek Basin to ensure that mitigation activities continue over time in a prioritized manner.

Overall recommendations for Duck Creek Basin and McGill include:

- Living vegetation and fuel conditions are continually changing depending upon annual moisture and growing conditions. The Duck Creek Basin and McGill communities must make a long-term commitment to vegetation management, fuel reduction and public education. Management of native and planted vegetation throughout the community is necessary to keep plants healthy and resilient to wildfire.
- Annual fuels should be assessed annually and treated as necessary. Shrublands should be assessed on a three to five-year cycle depending upon annual growing conditions.
- Breaking up any continuous fuel beds by modifying the spatial arrangement of the dominant and/or mature shrubs to create openings or a “mosaic” landscape.
- Prioritized treatment projects to be managed by a qualified wildland fire specialist

BLM, USFS, and some private landowners have been doing numerous treatments already. By planning and executing these landscape level hazardous fuels projects, they would be integrating the previous and future treatments to create a holistic approach to the fuel load in the Basin.

The Duck Creek Basin community access for emergency fire suppression equipment is poor. The main road is paved approximately 2/3 of the area, then it turns to a lightly maintained dirt road. All driveways are dirt. Some of the homes have agricultural fields near or around them. There is limited to no access during winter months with snow accumulation and/or poor road maintenance. The McGill community is located on a slope and has poor access in the winter months due to the moisture and cold temperatures on the roadways.

To the extent possible, the road system should be critically reviewed to identify existing ingress/egress that can be upgraded to allow access by emergency fire equipment throughout the community’s open spaces. This recommendation will not only improve fire agency responses for controlling future wildfire within these communities, but adding controlled-vehicle access will also have the indirect effect of reducing future fuels management costs through enhanced access.

Specific Treatment Recommendations & Priorities

Treatment recommendations for Duck Creek Basin were identified through the field assessment surveys, discussions with wildfire officials and professionals, and coordination with the community. Generally, the most hazardous fuel conditions throughout Duck Creek Basin are within the steeper draws, drainage channels and forested areas along the wilderness areas in the eastern perimeters of the community. These hazards are found abutting property lines that have not historically burned or been modified for development. These areas act as “wicks,” a continuous fuel bed that can carry a wildland fire into or out of the community. McGill’s most hazardous fuel conditions are located on the north and south outskirts of town, with very dense brush and annual grass vegetation. These areas could easily carry a fire into or out of the town of McGill, which will threaten life and property.

Priority	Treatment Descriptions
1	<p>Berry Creek: 600+ Acres</p> <p>Remove fuels along the north and south of Berry Creek Road to a tree spacing no less than 25 feet between crowns by means of mastication. This will compliment previous fuels reduction work completed by Nevada Division of Forestry hand crews. Brush will be removed at a rate in which spaces between plants will be twice the average height of the vegetation. Defensible space will be created by significantly reducing fuels surrounding structures where a wildfire would otherwise spread through these fuels threatening homes and lives. Removal of dead and down aspen along the riparian area will also be an important factor to create defensible space in this area. By reducing these fuels, fire suppression resources will have an increased opportunity to make access to structures and defend them from loss. Vegetation will be removed via hand crews and or mechanized equipment when applicable.</p>
1	<p>Initiate discussions with adjacent property owners to explore opportunities to improve access into the area and/or vehicle access roadways. Future development and/or recreational access should incorporate fuel breaks and access for emergency vehicles.</p>
1	<p>Duck Creek Basin: 500+ Acres</p> <p>Various ranch properties and residential homes need tremendous fuels reduction work completed around properties to reduce the risk of a catastrophic wildfire. Multiple homeowners have been contacted and agree this work needs complete. Many of these homes share a border with BLM and USFS lands, which are overgrown with mixed conifer and ground fuels. Shaded fuel breaks should be implemented with no less than 25 feet between crowns. Brush should be removed at a rate in which spaces between plants will be twice the average height of the vegetation. Defensible space will be created by significantly reducing fuels surrounding structures where a wildfire would otherwise spread through these fuels threatening homes and lives.</p>
1	<p>Elk Springs: 250+Acres</p> <p>Insect infested and diseased white fir, single leaf pinyon pine and Utah juniper trees, as well as dead and downed vegetation will be targeted for removal. Vegetation throughout the stand will be thinned at a rate which creates spacing that is approximately 15 feet between crowns of the residual trees. The healthiest and most vigorous trees will be selected to remain on site. Tress will be removed by means of mastication and chainsaw. Trees containing nests will not be cut. Trees will be cut close to ground level leaving no greater than a 4-inch-tall stump. Tree portions measuring less than 4 inches in diameter will be considered slash and will be disposed of via chipping and broadcasting the chips back on site and/or by piling and burning. Any skid trails created</p>

	through equipment use will be rehabilitated via hand tools upon project completion.
1	<p>Duck Creek Aspen Restoration: 150+ Acres</p> <p>White Fir trees have overtaken the Aspen stands along “Success Loop” corridor that connects Cave Lake State Park to Duck Creek Basin. The Aspen stands are dying off due to the lack of sunlight and moisture. By removing the White Fir from these aspen stands, it will provide the Aspen’s with adequate sunlight and moisture, in return helping the Aspen’s restore back to a healthy forest. Wildlife such as mule deer, elk, mountain lion, blue grouse, sage grouse, chukar and many varmints thrive and depend on these healthy forests for feed, water, and cover. The treatment protocol will be reviewed by a qualified forester.</p> <p>85% of White Fir trees will be mechanically removed by means of chainsaw or mastication. All dead and diseased Quaking Aspen will also be removed in the same manner. Slash will be ground and spread on site, or brought to a chipper and broadcasted back onto the site. Trees that are too big in diameter will be cut and piled for firewood and removed by the landowner.</p> <p>There will be no White Bark Pines removed from the project area. These are an important tree species for biodiversity. All skid trails will be rehabilitated with cross ditches or covered with minor amounts of slash to prevent soil erosion. This will be determined near the end of the project.</p>
1	<p>McGill Mowing Strips: 100+ Acres</p> <p>Vegetation on both the north and south ends of the community of McGill are very dense with sagebrush and annual grasses, as well as invasive and noxious weeds such as cheat grass. If a wildland fire started on either end of the community, it could easily engulf the community and spread from structure to structure. There are many abandoned buildings with no defensible space around the community, and even more so on the outskirts of the community. A proposed project is to mow/ masticate fuel breaks through the vegetation on both the north and south ends of town. These fuel breaks would tie into the private property on the east and west ends of town. The west side of town is boarded by active agricultural fields.</p>
2	<p>The Duck Creek Basin community boundary borders public lands managed by BLM. And USFS. Initiate discussions with BLM to design and implement a shaded fuel break to protect homes and prevent wildfire from moving through the community. These discussions should include development of annual fire breaks along this property boundary until a permanent fuel break is constructed.</p> <p>Thin native vegetation below trail and along drainage channel to create interspaces and break up the continuous fuel bed/hazardous fuels.</p>
2	<p>Existing trails and access roadways pose opportunities for increasing access for emergency vehicles. Future development should incorporate fuel breaks and access for emergency fire equipment.</p> <p>Install wildfire hazard signs and smoking prohibited signs along the trail system in pedestrian use areas.</p>



Duck Creek Basin CWPP Map



Disclaimer: The Nevada Division of Forestry makes no claim, representation, or guarantee, express or implied, concerning the validity, the timeliness or the accuracy of the GIS data and GIS map products furnished by the Division, including the implied warranty of any uses of such data.

USER: 01/01/2015
Projection: NAD83 UTM Zone 11 North

Notes: This area is showing the Duck Creek Basin CWPP area for potential project work.

Cost Estimates

The costs of mitigation and fuel reduction for the various identified treatment areas are affected by several variables including fuel type, fuel density, slope, surface obstructions (rock) and access. Equipment and labor mobilization can be reduced by keeping the project areas connected and as large as possible. Current cost estimates average around \$1,000 per acre for Eastern Nevada, and include any mixture of the following treatments:

- Planning and Clearances- Cultural clearances, mining claims, threatened and endangered plant and animal taxa
- Mechanical Thinning - Hand Thinning
- Hand Pile & Burn - Hand Removal
- Prescribed Burn - Mastication
- Chipping [material stays in place]

It is important to note that the above treatment costs are only the costs of actual treatment. Many projects particularly on public lands also have associated costs for planning, resource surveys, environmental analysis, administration and project management which may raise project costs by 30 to 50 percent.

Conclusions

The Duck Creek Basin is at high risk for wildfire ignitions in the wildland urban interface areas. The area is known for summer thunderstorms and dry lightning strike fires. Public education about fire safety, implementation and maintenance of defensible space and fuel reduction projects will remedy many of the hazards and provide a greater level of safety to this community.

The majority of private lands in Duck Creek Basin are included in the NDF and White Pine County Fire protection district. The district is managed by the White Pine County Fire Chief and includes the Ely Conservation Camp. The McGill volunteer fire department operates under White Pine County. NDF relies on seasonal crews and conservation camp crews. They are in dire need of equipment and storage facilities. However, the Ely Conservation camp is at risk of closing due to State of Nevada Department of Corrections budget issues. This severely impacts the suppression efforts and increased consequences could be devastating.

The majority of public lands in Duck Creek Basin are administered by the Bureau of Land Management and USFS. The BLM Ely Field office and USFS has a cooperative agreement with each VFD to respond to wildfires that threaten communities with fire suppression equipment and personnel. BLM fire suppression apparatus is housed at the Ely Field office but may not be available on high fire days due to other commitments. Agricultural fields in the Duck Valley community provide a buffer zone between residential structures and wildland fuels. However, these areas are more at risk of economic loss from damage to ranch improvements and stockpiled commodities than residential structure loss. The rural ranch communities have no other water sources than wells and ranch ponds. Water sources for fire suppression will need to be brought to the site by fire protection personnel.

While there is no way to completely eliminate the risk of wildfires to the Duck Creek Basin community, it is recommended to increase public responsibility and encourage concerned community members to be

proactive in maintaining defensible space on private property and increase public awareness of the risks and potential damage or loss of lives and property associated with living in a wildfire prone environment. Long term community safety from wildfire requires a permanent commitment to enforcement of fire safe ordinances at the local level, and dedicated attention to fuels reduction and management. Regular monitoring of fuel conditions and periodic updates to this report should include new recommendations for maintenance or implementation of additional treatments as development continues to encroach into the wildland urban interface.

Appendix A

Hand & Mechanical Best Management Practices

Hand Thin, Pile, and Haul

Shrub or Brush Reduction

Hand tools such as weed-eaters, Pulaski's, chainsaws, saws, etc. should be used to remove individual shrubs and reduce the fuel load by creating space between the remaining shrubs equal to approximately twice the remaining shrub height. Creating a mosaic of "shrub islands" and meandering interspaces will result in a natural appearance. Individual desirable shrubs to remain on site should be clearly marked by the Project Manager prior to initiation of work. Care should be taken to avoid cutting or any disturbance within flagged areas that are designated as desirable shrub islands to be retained.

Biomass generated from hand thinning shrubs should be moved to temporary pile locations approved by the Project Manager in preparation for chipping or grinding or removal from the community. Chipped or ground biomass should be immediately blown into chip vans and hauled to designated areas for disposal. Upon completion of chipping and hauling, all paved or concrete surfaces should be thoroughly cleaned to remove all remaining dirt and vegetative litter.

Mechanical Treatments

Mastication

There are two basic types of masticators commonly used that are distinguished by their masticating heads (rotary head and horizontal drum) which are further differentiated by their base machines (integrated or boom-mounted). An integrated masticator is best for small areas with limited access while a boom-mounted masticator works well for larger acreages. Either type of masticator could be used to selectively remove individual shrubs and retain adequately spaced shrub islands. Areas considered for mastication treatment should be evaluated prior to treatment for safe operation of the masticator equipment. Individual desirable shrubs and shrub islands to remain on site should be clearly marked by the Project Manager prior to initiation of work. Care should be taken to avoid cutting or any disturbance within flagged areas that are to remain on site.

Mowing

In larger, gentle terrain sites, with little or no surface rock, and where either the native shrub component is not present, or the existing shrubs are also identified for removal, tractor-mounted blade or frail mowers can be utilized to remove standing understory fuels. While permanent fuel breaks are being constructed, this equipment can also be used to establish a temporary fire break during periods of high weed production and fire risk. Temporary fire breaks should be a minimum of 100 feet in width and can be established either along access points to aid in fire suppression or at developed property lines to provide a defensible space for the purposes of assisting fire suppression measures.

Careful timing of mechanical treatments should include the following considerations.

- Mechanical vegetation treatments should not occur during fire season and should only be done when fuel moisture is high. Sparking can occur if rocks are hit by steel blades or with the masticator.
- Heavy equipment should not be operated under saturated soil conditions.
- Vegetative chips and debris following mechanical treatment typically remain on the ground. However, to the extent this debris can be raked and removed off-site, this added action represents a BPM for temporary fire breaks.

Mulching

Following seeding, disturbed areas exceeding either a 1/2 acre in size or having a width greater than 200 feet, should be mulched to reduce site erosion, dust, and wind-shear damage during the seedling

establishment phase. Mulching seeded sites can also aid in soil moisture retention during the seedling establishment period.

The selected mulching treatment will depend on conditions of the individual project site, including soil texture and slope or gradient. Some sites may require an integration of alternative soil mulching methods to obtain site stability. All small-grain straw used onsite as mulch must be certified as weed-free by the originating state.

Small-Grain, Weed-Free Straw Crimping

On flat or gentle terrain with soil textures that allow successful crimping to a depth of 2 – 4 inches, the broadcast of small-grain, certified weed free straw represents a preferred mulching treatment where the method is suited. The straw is loosely blown on the seeded site at a uniform application rate of two dry tons per acre. After straw application, either a slotted disk or regular disk plow (adjusted to a near-vertical disk position) is utilized to crimp or punch the straw into the ground to an effective anchoring depth of 2 to 4 inches. The goal of this mulching treatment is to have 4 to 6 inches of straw stubble vertically protruding from the soil surface. The distance between plow disks, or the crimped straw mulch rows, should be no greater than 6 to 8 inches. The direction of straw crimping shall be as close to the slope contour as possible.

Hydro-mulching

Hydro-mulching represents a commonly used mulching method on flat or gentle terrain with slopes less than 20 percent. This method involves spraying a mixture of reclaimed water, fiber mulch, and tackifier over previously seeded sites. Often a green dye is added to the fiber mix to assist in assuring uniform coverage of the mulch fiber. Application rates in the range of 2,000 to 3,000 pounds of wood fiber and 75 pounds to 100 pounds of tackifier per acre are typical. However, the Manufacturer's installation instructions for the fiber mulch and tackifier must be followed closely to assure proper installation. When this mulching method is used, care should be exercised to not unnecessarily spray and cover existing shrubs and grasses identified for retention with the fiber and tackifier solution.

Weed-Free Straw Plus Netting

An application of small grain, weed-free certified straw, applied at a rate of two dry tons per acre, can be loosely blown on moderate slopes of less than 45 percent and temporary secured in place by commercially available biodegradable netting. Installation and securing of this temporary mulch treatment should closely follow the Manufacturer's recommendations for the selected netting product.

Erosion Control Blank and/or Wattling Products

Temporary soil stabilization of seeded slopes greater than 45 percent require engineered and designed products of which there are many commercial sources. The Manufacturer's specifications should be used to select the engineered mulch product and the Manufacturer's instructions should be relied on to install the selected product.

Appendix B

Glossary of Selected Wildfire Management Terms

Defensible Space: Defensible space is defined as a minimum of a 30-foot area around houses and other structures where vegetation has been significantly modified or removed. The purpose of creating defensible space is to reduce the risk of losing homes and other property improvements to wildfire.

Extreme Fire Behavior: 'Extreme' implies a level of fire behavior that ordinarily precludes methods of direct control action. One or more of the following factors are usually involved: high fuel loading, high rate of spread, prolific crowning and/or spotting, presence of fire whirls, and/or strong convection column. Predictability is difficult because such fires often exercise influence on their environment and behave erratically and dangerously.

Fine-Fuels: Fast-drying fuels, generally with a comparatively high surface area to volume ratio, which are less than ¼ inch in diameter and have a time lag of one hour or less. These fuels ignite readily and are rapidly consumed by fire when dry.

Fire Behavior: The manner in which a fire reacts to the influences of fuels, weather, and topography.

Firebrands: Pieces of burning material carried on the wind ahead of an advancing wildfire that, in extreme cases, can ignite spot fires up to a mile removed from the flame front.

Fire Break: A strip of land cleared of brush, trees, and fine fuels down to the mineral soil.

Fire Frequency: The number of times that fires occur within a defined area and time.

Fire Hazard: Vegetative factors that can affect the intensity and rate of fire spread, as well as urban factors that can facilitate or inhibit public safety and the containment of a fire in an interface area.

Fire Regime: A term used by fire ecologists to describe the recurrence and intensity of fire relative to a specific plant community.

Fire Return Interval (or fire interval): The time period between fires in a defined area, usually at the scale of a plant stand or a small landscape area.

Fire Risk: Potential ignition sources and factors that facilitate ignition of wildfires.

Flashy Fuels: Fuels such as grass, weeds, leaves, pine needles, duff, and litter. Flashy or flash fuels ignite readily and are consumed rapidly when dry. Also called fine fuels.

Fuel Bed: The array and composition of fuels in terms of fuel loading, depth, and particle size in a natural setting.

Fuel Break: Fuel breaks are constructed in strategic locations where a cover of dense, heavy, or flammable vegetation has been permanently modified to a lower fuel volume or reduced flammability. Fuel break construction may include removing, controlling, and replacing highly flammable vegetation with more fire-resistant species. Locating fuel breaks require strategic planning and regular maintenance is required to maintain their effectiveness over the long-term.

Fuel Loading: The amount of fuels present expressed quantitatively in terms of weight per unit area.

Fuel Reduction Treatment: This treatment involves strategically locating blocks of land near or within communities where flammable vegetation has been permanently modified to a lower fuel volume or reduced flammability.

Fuel Type: An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

Home Ignition Zone: Coined by Jack Cohen, US Forest Service Fire Scientist, the home ignition zone concept represents the area surrounding a home that rarely exceeds 200 feet in radius distance. The construction and flammability of structures and vegetative fuels within this radial distance largely determines whether a constructed home will survive a wildfire event or not.

Shaded Fuel Break: A shaded fuel break is created by altering surface fuels and increasing the height of the base of the live crown and opening the canopy by removing a portion of the woody plants in the

treatment area. This type of fuel break spans a wide range of understory and overstory prescriptions. Construction methods include thinning, mechanical biomass removal, and the potential use of prescribed fires.

Wildland-Urban Interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.