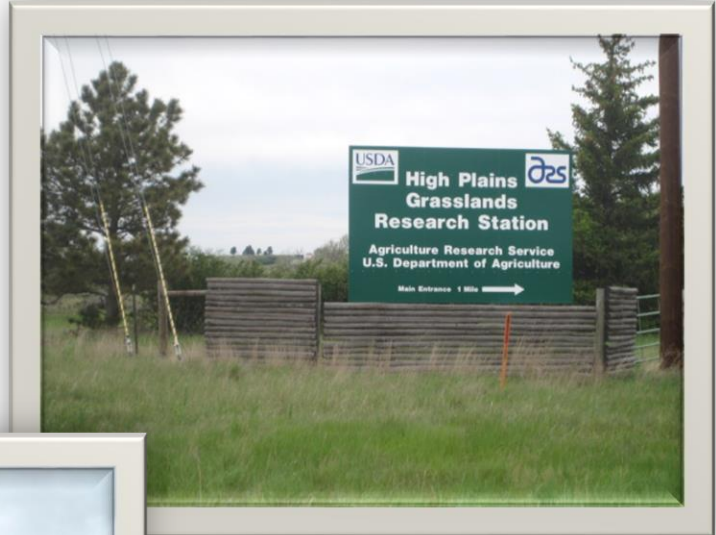


Laramie County Fire Authority Community Assessments





Appendix B – Community Assessments

These Community Assessments are presented by Fire District in alphabetical order except where some communities were combined because of proximity or similarity in characteristics. The assessments are designed to provide a broad overview of the community's wildfire risk and some actions that could be undertaken to reduce that risk; it does not provide a parcel-level assessment. NRG Consulting strongly recommends that each Fire Department, County Mitigation Specialist work closely with each community to help them understand their risk and further define needed actions.

Laramie County Fire Authority

- Arrowhead Estates
- Briarwood/Quatercircle 5
- Cheyenne Pass
- City of Cheyenne Landfill/ Duke Energy Windfarm
- Crow Creek Road Association/Ponderosa
- Curt Gowdy State Park including: Granite Springs/Crystal Lake / Hynds Lodge / N. Crow Creek
- Federosa Ranchettes/Horseman Hills
- Granite Springs Retreat
- Happy Jack Ranchettes/ Happy Valley/ Little Creek/ Larson Addition/ Gilchrist School/ Silver Crown/ O'Connor Estates
- High Plains Grassland Research Station
- Lakeview Estates
- Mountain Meadows
- Mountain Shadows N & S / Federal / Iron Mountain
- North Horse Creek
- North Range Business Park

- Pine Grove
- Rocking Star Estates
- Rolling Hills Estates/ Cox Country/ Fisher King/ Deer Crossing/ Egge Ranchettes
- Shellback/ Foxhaven
- Silver Sage Estates/ Fox Meadows/ Whispering Meadows
- Spring Creek Ranches
- Table Mountain Ranches

Arrowhead Estates

Community Assessment



Community Description: There are five homes within this subdivision; all are wood frame with metal or composition roof material. The subdivision is located at the base of a prominent ridgeline to the west and smaller rolling hills to the east. This places the homes in a small canyon, less than ¼ mile wide with a south to north alignment. The parcels are generally small. Due to road conditions we were not able to observe or collect information on the farthest northern parcel and structure.

General fuel conditions in and adjacent to the subdivision are grass with a moderate brush load on the eastern aspect of the slope, west side of the subdivision. Fuel Models are GR2 – Dry Climate Grass and GS2 – Dry Climate Moderate Load Grass-Shrub. The structures evaluated all had some irrigated lawn around the houses as well as planted trees and shrubs within 30 feet of the residence.

A strength of the subdivision is irrigated lawns and general construction features of the homes.

No obvious wildfire preparedness activities were visible. There were properties with livestock.

Roads and Access: The homes are situated very close to Tomahawk Road so ingress and egress would be relatively easy. The road extending in from Highway 210 (Happy Jack Road) is single lane, native surfaced with fair to good alignment. It is accessible for Type 4 engines.

Wildfire Risk: The primary exposure to this subdivision would be a larger fire moving into the subdivision. The community is located in a small canyon with north-south slope alignment. Although small, the local terrain feature with wind alignment could result in fire moving through the subdivision very quickly. Brush on the west side of the subdivision is continuous and would result in high intensity fire as it passed as well as launch firebrands onto the homes. Other ignitions would be lightning or a fire starting in an improvement or from a vehicle and spreading within the subdivision.



Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a subdivision Firewise program.
- Develop 90-foot diameter turnarounds on the ends of no-outlet roads.
- Thin and reduce brush fuel load back from subdivision property line on west side of subdivision.
- Prune conifers up 8-10 feet in Zones 1 and 2 around structures and replace flammable vegetation within 5 feet of structures with fire-resistant vegetation and/or non-flammable mulches.
- Mow 100 feet wide or to lot boundary around homes in grassland areas.
- Develop firefighting water storage/use capabilities in several locations in subdivision.
- Educate homeowners on ember shower potential and minimize receptive ignition sources in Zone 1.
- Reduce ignition opportunities in Zone 2 such as firewood, pallets and other fuels that may be receptive to ignition.
- Encourage residents to install reflective address signs to allow emergency responders and firefighters to locate homes.
- Develop a plan to remove and/or secure livestock in the event of a fire.

Briarwood / Quarter Circle 5 Community Assessment

Community Description: The Briarwood and Quarter Circle 5 subdivisions are located in LCFA south of Highway 211 and west of Roundtop Road (County Road 222) within a grassland ecosystem. Primary Fuel Model is GR2- Dry Climate Grass. The subdivisions adjoin one another.

Quarter Circle 5 subdivision has 18 residences with 30 platted lots. Briarwood has 89 platted lots with 62 residences. Home construction is varied, ranging from vinyl siding to composite wood siding to brick facades and metal or shingle roofs. Most homes have irrigated and mowed lawns, although they tend to extend less than 50 feet from the residence. Many parcels have livestock, primarily horses, so there are outbuildings on most properties.

Roads and Access: Briarwood has two access points from Highway 211, while Quarter Circle 5 has a single access point from Roundtop Road. One parcel of Quarter Circle 5 is accessed directly from Roundtop Road. The roads within the subdivisions are all 1.5 to 2 lane gravel-surfaced with good alignment and grades generally less than 2%. All roads are accessible by a Type 1 engine.

Wildfire Risk: A house fire or chimney fire are the most likely ignition sources. There is also the possibility of a lightning-caused grassland fire moving into the subdivision.

Roofs and siding construction materials are fairly fire resistant. There was minimal vegetation within Zone 1, though some structures did have shrubs or flammable materials stored within Zone 1. Trees and shrubs are found within 30 feet of many homes.



Briarwood Subdivision



Quarter Circle 5 Subdivision

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With FireWise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along the County road or State highway and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local firefighting water supply

Plan of Action

- Encourage residents to install reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting within Defensible Zone 1 around structures, and prune conifer trees within 30 feet of structures up 8 to 10 feet.
- Consider addition of a cistern for firefighting water supply.

Cheyenne Pass

Community Assessment

Community Description: Cheyenne Pass is a mixed risk 170-acre subdivision with 11 homes. The northern third of the subdivision sits on the edge of a significant drainage and several drainages extend south through the subdivision. Two-thirds of the subdivision is relatively flat with a grass fuel model and abuts Highway 210 (Happy Jack Road). The fuel component in the drainages consists of ponderosa pine, mixed shrub types, and grass. Several of the drainages observed have numerous beetle-killed trees; in some cases, those trees are grouped and/or continuous, which could promote the rapid spread of wildfire. Fuel Models are GR2-Low Load Dry Climate Grass, GS2-Moderate Load Dry Climate Grass-Shrub, TU1-Low Load Dry Climate Timber-Grass-Shrub, and TL3-Moderate Load Conifer Litter. One home under construction was accessed off a two-track road. Homes are generally less than 25 years old, wood frame, with composite and metal roof systems.



Roads and Access: Access to the subdivision is generally good with direct flat routes to Happy Jack Road. All roads within the subdivision are dirt, generally of adequate width, and predominantly flat, with the exception of the easternmost access road. Roads in undeveloped areas are narrow, often two-track in nature. Roads are named; however, not all homes have clearly visible street numbers.



Wildfire Risk: Ignitions would likely be human-caused or the result of a structure fire within the subdivision.

The area outside the subdivision to the north, west and east could carry fire into the subdivision, with the biggest risk being ember showers that could create numerous spot fires. The ember showers would likely be followed by open flame as fire carried into the subdivision. The grass fuel component within the subdivision would be a very receptive fuel bed, supporting spot fires caused by uphill/up-drainage runs.

Fire Suppression Challenges: The biggest challenge in this area is the speed at which fire moves through the grass fuel component, coupled with the numerous drainages throughout the subdivision. That challenge, along with the time needed for volunteer firefighters to arrive on scene, could mean the loss of homes if home ignition zones have not been adequately prepared.

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a subdivision Firewise program.
- Encourage residents to install reflective lot number signs to help firefighters and emergency responders locate them.
- **Sign the loop road route and the no-outlet roads to assist first responders and residents moving into or out of the subdivision in an emergency situation.**
- On roads with less than 20 foot-wide running surfaces, develop turnouts at 1000 foot intervals to allow emergency or evacuating vehicles to pass safely.
- Develop 90-foot diameter turnarounds on the ends of no-outlet roads.
- Develop shaded fuelbreaks around the northern forested portions of the subdivision boundaries.
- Thin overstocked stands to a crown spacing of 10 to 12 feet and remove large (3 inch + diameter) downed dead wood within forested areas.
- Prune conifers up 8-10 feet in Zones 1 and 2 around structures and replace flammable vegetation within 5 feet of structures with fire-resistant vegetation and/or non-flammable mulches.
- Mow 100 feet wide or to lot boundary around homes in grassland areas.
- Develop firefighting water storage/use capabilities in several locations in subdivision.

City of Cheyenne Landfill / Duke Energy Windfarm Assessment

Community Description: The City of Cheyenne landfill is located within a grassland ecosystem south of Highway 210 approximately six miles west of the intersection of Highway 210 and Roundtop Road. It is surrounded by the Duke Energy Wind Generating facility (windfarm). A shooting range used by Laramie County and City of Cheyenne law enforcement agencies is located in the southeast corner of the windfarm. The range is not open to the public. The Fuel Model is GR2-Dry Climate Grass. No residences are in the landfill/windfarm tract, but several structures are present, including a switchyard for the generating facility.



Roads and Access: The landfill has one access point from Highway 210. The road to the landfill scales is 2+-lane paved. Other roads within the landfill are 2-lane gravel with good alignment and are accessible by a Type 1 engine. The windfarm has three access points from Highway 210. The roads within the windfarm are one-lane graveled, accessible by a Type 4 engine.

Wildfire Risk: Due to the lack of sizeable vegetation in the area, a fire originating from the landfill itself, sparks or ricochets from the range, sparks from electrical transmission lines, a lightning strike or structure fire are the most likely ignition sources. There is also the possibility of a grassland fire moving into the area.

The structures in the landfill and windfarm are primarily steel construction. There is only minimal vegetation within Zone 1.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the structures. The business structures will provide safe structures to shelter in place should there be a fast-moving grass fire in the area if there is a mowed fuelbreak.



Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Grass fires generally move very rapidly
- Electrical transmission lines and switchyard
- Landfill debris that may be hazardous if burned
- Potential for unexploded ammunition in the shooting range

Plan of Action:

- Mow 100 feet space around structures adjoining grasslands and 50 feet either side of roads during fire seasons to provide wider fuelbreaks,
- Provide hazardous fume and electrical facility training to firefighters that may be responding to wildfire in this area.

Crow Creek Road Association / Ponderosa Community Assessment

Community Description: The Crow Creek Road Association and Ponderosa community is located in a forest and grassland ecosystem north of Interstate 80 and south of Granite Springs Reservoir. There are 32 lots in the Crow Creek community and lot sizes range from 1.0 – 43.3 acres, with the mean size being 5.3 acres. There are 18 residences currently. Ponderosa is a 40-acre tract with a single home accessed through Crow Creek. Vegetation in the area consists of ponderosa pine, mountain shrubs and grass with aspen and willows in the moist bottoms. Fuel Models are GR2 – Dry Climate Grass, GS2 – Dry Climate Moderate Load Grass-Shrub, TL4 – Small Downed Logs, and TL8 – Long-Needle Litter. The homes reflect a variety of construction types. Siding consists of wood, log, or wood product. Roofing materials are asphalt shingles or metal.



Narrow two-track road

Roads and Access: Roads in the community are native surface. Grades as steep as 10% were found, with poor alignment for large trucks or semi-trailers. Road width varies, with 1 to 1 ½ lane roads with drained prisms close to the entrance, deteriorating to two-tracks with no drainage farther into the subdivision. Cul d' sacs have limited to no turnaround area. There is one access point to County Road 210 from the community.

Wildfire Risk: The most likely fire starts would come from a house fire, lightning, or wildfire moving into the subdivision. Spread of the fire would be governed primarily by

topography, followed by wind speed and direction. Grass would be the primary carrier of wildfire in most of the subdivision, therefore wildfires would likely be fast-moving, moderate to high intensity with relatively short duration. Fire behavior is further complicated by complex topography.

Some homes have continuous fuels, primarily trees and shrubs, within 30 feet of the structure (Defensible Space Zones 1 and 2), where fire could be problematic due to ember showers and radiant heat.

Several large meadow areas are scattered throughout the subdivision, some of which could serve as safety areas if needed.

Fire Suppression Challenges: Good access is key to any sort of safe and effective emergency response. In the case of Crow Creek, the location, width, alignment and grade of the roads all provide challenges for firefighters and also threaten the safety of homeowners. In addition, there were several other factors noted including:



Crow Creek Landscape

- No reflective address signs (lot #'s)
- A large component of standing dead and down woody fuels in forested areas
- The live conifers have a low crown base height
- There are home located at the tops of chutes
- No hydrants or additional water storage, and
- Long response times and minimal resources for initial attack

Nearby Granite Springs and Crystal Reservoirs and a couple of private ponds in the subdivision could serve as water sources for firefighters. Only the reservoirs would be of use with helicopter operations.

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a subdivision Firewise program.
- Encourage residents to install reflective lot number signs to help firefighters and emergency responders locate them.
- Work with the County to sign the roads within the subdivision. **Sign the exit road route and the no-outlet roads to assist first responders and residents moving into or out of the subdivision in an emergency situation.**
- On roads with less than 20 foot-wide running surfaces, develop turnouts at 1000 foot intervals to allow emergency or evacuating vehicles to pass safely.
- Develop 90-foot diameter turnarounds on the ends of no-outlet roads.
- Develop shaded fuelbreaks around the forested portions of the subdivision boundaries.
- Thin overstocked stands to a crown spacing of 10 to 12 feet and remove large (3 inch + diameter) downed dead wood within forested areas.

- Prune conifers up 8-10 feet in Zones 1 and 2 around structures and replace flammable vegetation within 5 feet of structures with fire-resistant vegetation and/or non-flammable mulches.
- Mow 100 feet wide or to lot boundary around homes in grassland areas.
- Develop firefighting water storage/use capabilities in several locations in subdivision.

Curt Gowdy State Park

Assessment

Park Description: Curt Gowdy State Park is located in a forest / montane shrub / grassland ecosystem. The Park covers 3600 acres consisting of three units and contains Crystal, Granite Springs and Upper North Crow Reservoirs. The reservoirs are part of the municipal water supply for the City of Cheyenne, Wyoming, so water quality is a high concern. The southern unit consists of Crystal and Granite Springs Reservoirs and their respective dams, a connecting road, fishing access points, boat ramps, campgrounds, and hiking and bicycling trail systems. A visitor center is located to the



north of Granite Springs Reservoir, accessed from Highway 210 (Happy Jack Road). The central unit is the Hynds Lodge area, which contains the park maintenance compound, the historic Hynds Lodge, the Camp Jack Boy Scout Camp, and a popular rock climbing area. It is just north of Highway 210. The northernmost unit is the Upper North Crow Reservoir, approximately 3.5 miles north of Highway 210 via County Road 101.



Granite Springs Reservoir from west of the dam looking towards the northwest

Vegetation in the park area consists of ponderosa pine, mountain shrubs and grasslands. Fuel Models are GR2 – Dry Climate Grass, GS2 – Dry Climate Moderate Load Grass-Shrub, TU1 – Low Load Dry Climate Timber-Grass-Shrub, TL4 – Small Downed Logs, and TL8 – Long-Needle Litter. Bark beetle activity in the ponderosa pine over the past decade has resulted in significant amounts of standing dead and downed pine trees, particularly in the northwestern portion of the Crystal/Granite Springs unit along the Middle Fork of Crow Creek.

Crystal/Granite Springs Unit: This unit is the largest, containing both Crystal and Granite Springs Reservoirs and dams, the Visitor Center, two campground loops, the boat ramps for each reservoir, shoreline picnic and dispersed camping areas and the hiking and bicycling trail systems. The Visitor Center was opened in 2015 and has Firewise landscaping.

Roads and Access: The roads from Highway 210 to the visitor center, down to the north boat ramp on Granite Springs and over the causeway on the Middle Fork of Crow Creek are two-lane paved with good alignment and accessible for Type 1 engines. The main roads in the remainder of this unit, including Granite Springs Road between Crystal and Granite Springs Reservoir, are two-lane native surface, with spot gravel in some areas. Grades as steep as 5% were found, with fair alignment for large trucks. Access roads from Granite Springs Road to shoreline dispersed camping and picnic areas are single-lane native surface, accessible to Type 4 engines.



Picnic Area at Crystal Reservoir

Wildfire Risk: The most likely fire starts would come from a structure fire, lightning, escaped campfire or wildfire moving into the park. Spread of the fire would be governed primarily by topography, followed by wind speed and direction. Grass is the primary carrier of wildfire in much of the park, therefore wildfires would likely be fast-moving, moderate to high intensity with relatively short duration in that fuel type. The shrub and forestland parts of the park also have significant grass components so fire movement might be slower but intensity would be moderate to high. Areas with standing dead and downed trees would have moderate to high intensity and duration with increased spotting potential. Fire behavior is further complicated by steep and complex topography in the Crow Creek canyon.

Park structures in this unit have good defensible space. The boat ramps, picnic shelters and campground areas are mowed.

Granite Springs Reservoir has private homes and two subdivisions located to the north and south of the lake. Both subdivisions have shrub and



Pine Forestland in Crow Creek Canyon at west end of Granite Springs Reservoir

forestland between them and the lake with steep topography and drainages making fire behavior more hazardous to structures.

Fire Suppression Challenges:

- A large component of standing dead and down woody fuels
- The live conifers have a low crown base height
- There are homes located above the reservoir in potentially hazardous locations
- Long response times and minimal resources for initial attack
- Reduction in water quality in the event of a wildfire on lands upstream of the reservoirs



Homes above Granite Springs Reservoir

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Thin pine stands to a target density of 60 square feet of basal area per acre when over eight inches average stand diameter. Below eight inches average diameter, thin to 175 trees per acre. Slash should be hand-piled and burned when there is at least 4 inches of snow or ground conditions are moist, or chipped and scattered. Chip depth should not exceed 3 inches.
- Remove downed dead trees beneath the crowns of live trees.
- Mow 100 feet wide around structures, parking areas, picnic areas and campgrounds in grassland areas,
- Consider using the portion of Granite Springs Reservoir upstream of the causeway as a sediment trap by installing a control structure in place of the existing culverts. The control structure could stop flow into the main part of the reservoir in the event of a wildfire to the west of the causeway. Pumps installed as a component of the control structure could move water from the sediment control area into the main reservoir prior to stormflows, increasing potential storage in the sediment control area.

Hynds Lodge Unit: This unit contains the historic Hynds Lodge, the maintenance shops, a rock climbing area, hiking trails, and the Camp Jack Boy Scout camp. The Granite Springs Retreat subdivision is immediately to the east.



Historic Hynds Lodge

Hynds Lodge, which is operated by Wyoming State Parks, is listed on the National Register of Historic Places. Various groups use the lodge, which can accommodate meetings and has the ability to sleep approximately 20 people. The lodge is built partially into a hillside and is constructed of granite stone and masonry with a tile roof. There is also an amphitheater and other day-use areas in close proximity to the lodge.

Roads and Access: The road to Hynds Lodge is two-lane paved with good alignment and accessible for Type 1 engines. The main roads in the remainder of this unit, including the road to Camp Jack, are one-lane native surface with fair alignment for large trucks.

Wildfire Risk: The most likely fire starts would come from a structure fire, lightning, escaped campfire or wildfire moving into the park. Spread of the fire would be governed primarily by topography, followed by wind speed and direction. Grass would be the primary carrier of wildfire in much of the park, therefore wildfires would likely be fast-moving, moderate to high intensity with relatively short duration in that fuel type. The shrub and forestland parts of the park also have significant grass components so fire movement might be slower but intensity would be moderate to high. Areas with standing dead and downed trees would have moderate to high intensity and duration with increased spotting potential. Fire behavior is further complicated by steep and complex topography in the rock climbing area

Park structures in this unit have good defensible space.

The Granite Springs Retreat subdivision has shrub and forestland between it and the park with steep topography and drainages making fire behavior more hazardous to structures.

Fire Suppression Challenges:

- A component of standing dead and down woody fuels
- Live conifers have a low crown base height
- There are homes adjoining the park in potentially hazardous locations
- Long response times and minimal resources for initial attack

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Thin pine stands to a target density of 60 square feet of basal area per acre when over eight inches average stand diameter. Below eight inches average diameter, thin to 175 trees per acre. Slash should be moved to an approved location, and either piled and burned or chipped,
- Prune trees within 30 feet of Hynds Lodge up 8 to 10 feet,
- Mow 100 feet wide around structures, parking areas and picnic areas in grassland areas.

Upper North Crow Unit: This unit contains the Upper North Crow Creek Reservoir. The only structures are vault toilets and the dam outlet works. The unit is in both Laramie and Albany Counties.

Roads and Access: Access to Upper North Crow Creek is via County Road 101, a native-surfaced two-lane road with good alignment and accessible for Type 1 engines. The roads in the remainder of this unit are one-lane native surface with fair alignment for large trucks.

Wildfire Risk: The most likely fire starts would come from lightning, an escaped campfire or wildfire moving into the park. Spread of the fire would be governed primarily by topography, followed by wind speed and direction. Grass would be the primary carrier of wildfire in much of the unit, therefore wildfires would likely be fast-moving, moderate to high intensity with relatively short duration in that fuel type. The shrub and forestland parts of the park also have significant grass components so fire movement might be slower but intensity would be moderate to high. Areas with standing dead and downed trees would have moderate to high intensity and duration with increased spotting potential. Fire behavior is further complicated by complex topography.

Park structures in this unit have good defensible space.

Fire Suppression Challenges:

- A component of standing dead and down woody fuels
- Live conifers have a low crown base height
- Long response times and minimal resources for initial attack

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Thin pine stands to the south and east of the dam to a target density of 60 square feet of basal area per acre when over eight inches average stand diameter. Below eight inches average diameter, thin to 175 trees per acre. Slash should be hand-piled and burned when there is at least 4 inches of snow or ground conditions are moist. Slash can also be lopped and scattered and then broadcast burned when conditions are appropriate.
- Mow 50 feet either side of the main roads accessing the dispersed fishing sites during fire seasons.



North Upper Crow Pine Thinning Area



Community Assessment and Wildfire Mitigation Action Plan for the Granite Springs Retreat Community

Happy Jack Road, Cheyenne, Laramie County, Wyoming

**Prepared by Betsey Nickerson, Fuels Mitigation Coordinator for Laramie County
Assisted by Josh Van Vlack and Nick Williams, Wyoming State Forestry Division**

December 2013

This assessment describes the wildfire-related characteristics of the Granite Spring Retreat Community in general as well as the specific wildfire-related characteristics of the surrounding area. It addresses the issues and possibilities in which home ignitions can occur under severe wildfire conditions and how ignitions might be avoided within the home ignition zones of affected residents. It identifies specific issues within communities that can be addressed, and it explains how communities can become recognized NFPA Firewise Communities. While mitigation can greatly reduce the probability of property losses under anticipated wildfire conditions, no amount of mitigation can completely eliminate all risks, particularly those experienced under the most extreme fire conditions.

Wildfire behavior will be dominated by the residential characteristics of each area. The good news is that by addressing community vulnerabilities, residents will be able to substantially reduce their exposure to loss. Relatively small investments of time and effort will reap great rewards in wildfire safety.

DESCRIPTION OF (SIZE AND NATURE OF) THE SEVERE CASE WILDLAND FIRE CHARACTERISTICS THAT COULD THREATEN THE AREA

Fire intensity and spread rate depend on the fuel type and condition (live/dead), the weather conditions prior and during ignition, and the topography. Generally the following relationships hold between the fire behavior and the fuel, weather and topography.

- Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel type, the greater the continuity and quantity, the faster the fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels.
- The weather conditions affect the moisture content of the 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.
- Various bark beetle species have greatly increase the dead fuels in the community area. Ponderosa, lodgepole, and limber pines have been heavily impacted by the beetles. There is currently some amount of standing dead trees in the community area, but an enormous amount of dead on the surrounding public lands. These dead standing trees can add to fire behavior and intensity and thus pose a concern in a severe wildland fire.



Anticipated fire behavior of a moderate to severe wildfire in vegetation similar to GSR

- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity. The National Renewable Energy Laboratory shows that this community area has some of the highest average winds speed of anywhere in the country. With average wind speeds of 25 mph and gust possible to 100 mph.
- Topography influences fire behavior principally by the steepness of the slope. However, the configuration of the terrain (such as narrow draws and saddles) can influence fire spread and intensity. In general, the steeper the slope, the higher the rate of uphill fire spread and intensity.
- The largest concern by fire management officers for wildfire in this area is a large wind driven fire that originates to the west of GSR in either the Curt Gowdy State Park area or Pole Mountain section of the Medicine Bow National Forest. This fire would be very large and fast moving, quickly exceeding local firefighting resource capacity and ability to suppress.
- Wildfires in this area have a higher probability of starting from human causes given the large recreational uses of Curt Gowdy State Park, Pole Mountain sections of the Medicine Bow National Forest and being surrounded by public lands of the BLM and Wyoming State Trust on all sides. There is a high potential for a lightning caused fire as well; as has been the cause of most of Wyoming's large fires.

IMPORTANT CONSIDERATIONS

The Firewise Communities/USA program seeks to create a sustainable balance that will allow communities to live safely while maintaining environmental harmony in a WUI setting. Homeowners already balance their decisions about fire protection measures against their desire for certain flammable components on their properties. It is important for them to understand the implications of the choices they are making. These choices directly relate to the ignitability of their home ignition zones during a wildfire.

The four largest considerations observed by the assessment team was the need for:

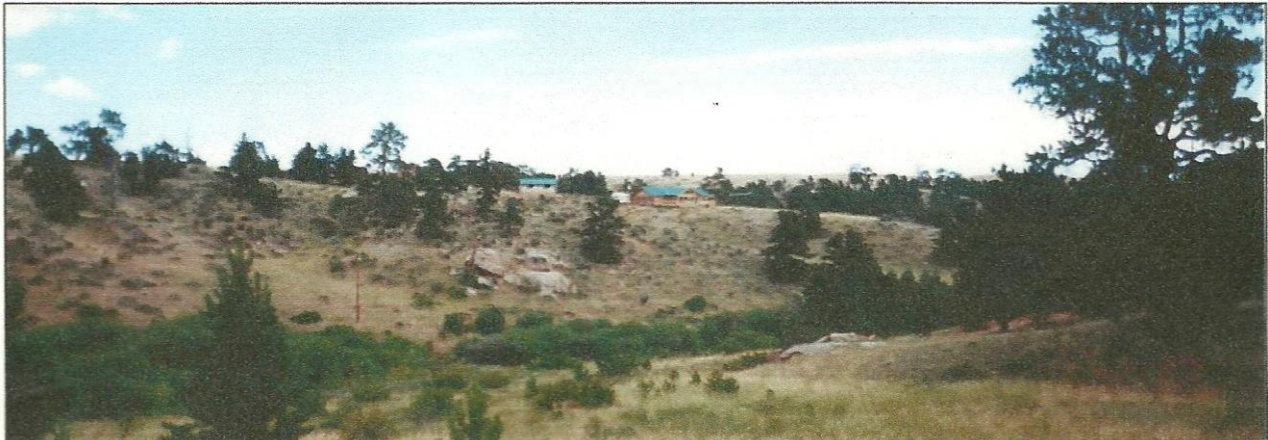
1. A closer look at all home-ignition zone areas. Each landowner should evaluate the common issues addressed in this document.
2. General hazardous fuels reduction. Each landowner has an opportunity to look at the trees and shrubs on their property and learn what could be done to protect them and their home.
3. Improve ingress and egress for firefighting equipment as well as escape routes for residents and responders. Several major community roads have been impacted and restricted by the re-growth of younger trees and shrubs. Thinning and pruning of this vegetation will improve overall roadway safety, access to homes in the community, as well as improve the communities' ability to remove snow and maintain the roadways.

There is a need to recognize the threat of fire to living snow fences (planted windbreaks). These snow fences (windbreaks) represent a huge investment of time and money and greatly increase property value. Depending the age and number of trees and shrubs in the break, these plantings could be valued as high as \$50,000 to well over \$100,000. There is a potential for these investments to burn in a wildfire if not properly mitigated and maintained.

Residents are reminded to be conscious of keeping high-intensity fire more than 100 feet from their homes. It is important for them to avoid direct fire contact with their structures, including firebrands. The assessment team recommends the establishment of a 'fire free zone,' allowing no fire to burn within ten feet of a house by removing fuels located there. Remember that, while wildfire cannot be eliminated from a property, it can be reduced in intensity.

Homeowners are reminded that street signs, addresses, road widths and fire hydrants do not keep a house from igniting. Proper attention to their home ignition zones does. Residents should identify the things that will ignite their homes and address those.

Weather is, of course, of great concern during wildfire season. At such time as fire weather is severe, homeowners should remember not to leave flammable items outside. This includes fiber doormats, flammable patio furniture, firewood stacked next to the house, or other flammables.

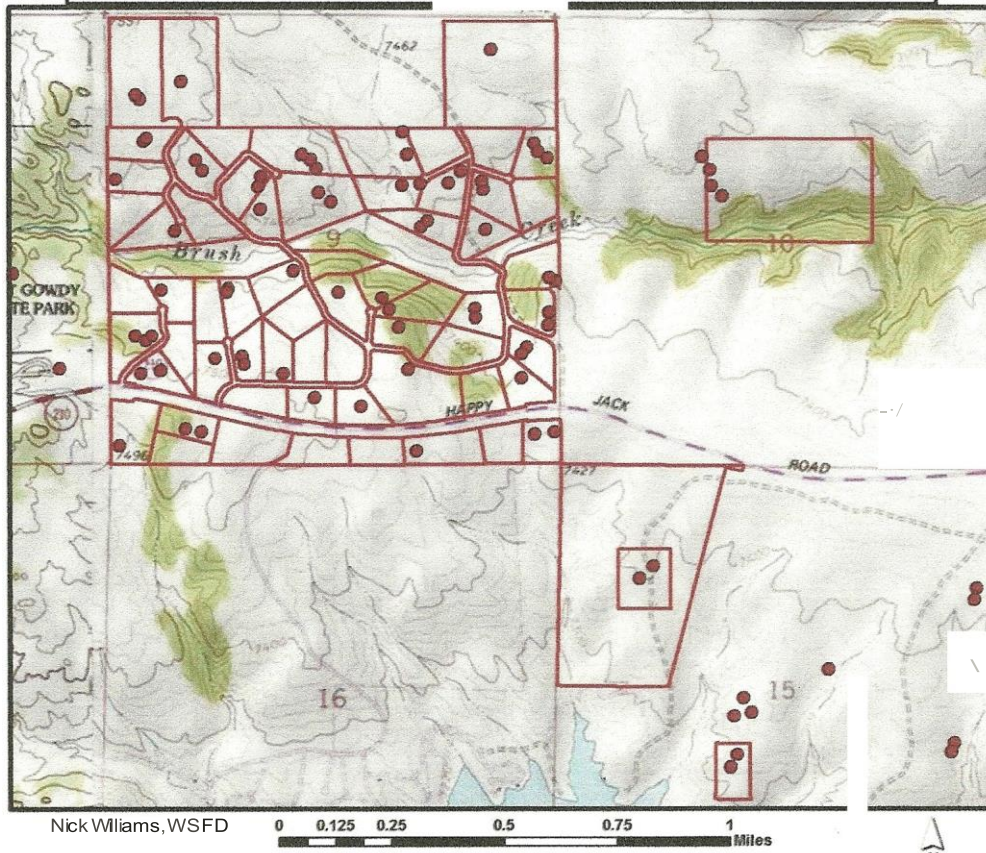


Typical vegetation, fuels, and topography found in the community area

SITE DESCRIPTION

The majority of the residences within the community are located on rolling terrain with steeper slopes leading into the canyon bottom that travels east to west through the community. Elevation ranges from 7,250 to 7,560 feet above sea level. Geologically most of the site is composed of decomposed granite soils with very little organic matter except in the creek bottom/riparian areas. There are a few scattered rock outcrops dotted across the landscape. These outcrops could be useful sites to work into landscape level fuels reduction treatments.

Granite Springs Retreat Community, Cheyenne, Wyoming



Vegetation in the community is scientifically defined as dominated by Rocky Mountain ponderosa pine grass savannah with a mixed shrub grassland association. Forested areas are typically composed of 150- 200-year-old ponderosa pine overstory with a perennial and annual grass understory. Tree densities vary, but generally exceed what is considered healthy for ponderosa pine. Pines have been impacted by Mountain Pine and Ips Engraver Beetles for a number of years recently, resulting in high levels of mortality. The community has conducted some general removal of dead trees, and some community members actively spray trees with insecticides on an annual basis as a preventive measure against infestation. The riparian areas along the Crow Creek drainage are composed of willows and scattered clumps of quaking aspen, many of which show signs of poor health and decline due to age and lack of disturbance.

The landscape is also inter-mixed with a variety of shrubs and grasslands. These shrub communities are dominated with mountain mahogany, Wyoming big sagebrush and other sagebrush species. The grass species varies immensely by aspect and water availability, but common are various wheatgrass, bunch grasses, and broom species. Very few detrimental invasive species were observed at the time of inspection; however, further investigation is suggested.

Federosa Ranchettes / Horseman Hills

Community Assessment

Community Description: The Federosa Ranchettes and Horseman Hills subdivisions are located in LCFA north of Highway 211 and west of Telephone Road (County Road 120) within a grassland ecosystem. Primary Fuel Model is GR2 - Dry Climate Grass. The subdivisions are situated along Telephone Road in close proximity to one another.



Federosa Ranchettes subdivision has 25 residences with 31 platted lots. Mean lot size is 10.1 acres with the largest lot at 32.4 acres and the smallest at 4.8 acres. Horseman Hills has 21 platted lots with 16 residences and average lot size of 11.7 acres. The largest lot is 31.2 acres, smallest 10.2 acres. Home construction is varied, ranging from vinyl siding to composite wood siding to brick facades and metal or shingle roofs. Most homes have irrigated and mowed lawns, although they tend to extend less than 50 feet from the residence. Many parcels have livestock, primarily horses, so there are outbuildings on most properties.

Roads and Access: The subdivisions are all accessed from Telephone Road (County Road 120). Federosa Ranchettes has four access points, while Horseman Hills has two access points. The roads within the subdivisions are all 1 to 1.5-lane gravel-surfaced with good alignment and grades generally less than 2%. All roads are accessible by a Type 1 engine.



Wildfire Risk: The most likely ignition sources would be from a house or chimney fire. There is also the possibility of a lightning-caused grassland fire moving into the subdivision.

Roofs and siding construction materials are fairly fire resistant. There was minimal vegetation within Zone 1, though some structures did have shrubs or flammable materials stored within Zone 1. Since the subdivisions are 20 or more years old,

trees and shrubs are found within 30 feet of some houses.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With Firewise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along County road and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local firefighting water supply

Plan of Action:

- Encourage residents to install reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting within Zone 1 around structures, and prune conifer trees within 30 feet of structures up 8 to 10 feet.
- Consider addition of cistern for firefighting water supply.

Happy Jack Ranchettes / Happy Valley / Little Creek Estates / Larson Addition / Gilchrist School / Silver Crown Estates / O'Connor Estates Community Assessment

Community Description: These six subdivisions and the school are located in LCFA and Fire District 10, north and south of Highway 210 by Gilchrist Junction approximately ten miles west of the Cheyenne city limits. The community is within a short-grass prairie grassland ecosystem. Primary Fuel Model is GR2 - Dry Climate Grass, with TL2 - Low Load Broadleaf Litter in the cottonwood and willow stands in riparian areas. Tree planting in the community for landscaping and shelterbelts has added TU1 - Low Load Dry Climate Timber-Grass-Shrub in close proximity to many homes and other structures.



The subdivisions are situated in close proximity to one another and share access roads. The community is essentially one neighborhood and will be discussed as such in this assessment.

The Happy Jack / Happy Valley community has 219 residences with 359 platted lots. Lot sizes range from 2 to 62 acres. Homes have been built over the past 40 years, so construction is varied, ranging from vinyl siding to composite wood siding to brick facades, metal buildings, modular homes, mobile homes and log homes. Most roofs are metal or asphalt shingles. Most homes have irrigated and mowed lawns, but many extend less than 50 feet from homes. Many parcels have livestock, primarily horses, so there are outbuildings on most properties.



In addition to the residences, the community contains LCFA Station 78, Gilchrist School, the Bunkhouse Bar and Grill, and the Happy Jack Community Church.

Roads and Access: The Happy Valley and Happy Jack Ranchettes subdivisions are all accessed from Highway 210 (Happy Jack Road), with nine separate access points that are connected with other cross streets. Little Creek Estates and Larson Addition are located along County Road 110 (Ferguson Road) approximately ½ mile southwest of Highway 210. Silver Crown and the west section of the O’Conner subdivisions have un-named access roads connecting from Highway 210. The east part of O’Conner subdivision connects to Highway 210 with Bade Road. The roads within the community are all 1.5 to 2-lane gravel-surfaced with good alignment and grades generally less than 4%. All roads are accessible by a Type 1 engine.

The major road issues are a large number of roads with no outlets that are not signed as such, poor or non-existent road signage within the subdivisions, and lack of designated emergency ingress/egress routes. Individual homes do not have easily identifiable addresses.

Wildfire Risk: A structure or chimney fire is the most likely ignition sources. There is also the possibility of a lightning-caused grassland fire moving into the subdivisions. Two recent fire scars of two acres or less were noted during on-site visits in the summer of 2015. No structures were significantly damaged.



Roofs and siding construction materials are generally fire resistant, most often dependent on surrounding vegetation near the structures. There is usually good defensible space within Zone 1, though some structures do have shrubs or flammable materials stored within Zone 1. Trees and shrubs are found within 30 feet of some houses, providing sources for spotting and more intense fires close to structures.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With FireWise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along the County road and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers or addresses)
- Lack of consistent reflective street signage
- Lack of local firefighting water supply
- Large trees and shrubs next to homes

Plan of Action:

- Work with County Emergency Management and the local Fire District to develop a community Firewise program.
- Encourage residents to post reflective address signs to help firefighters or emergency responders locate them.
- Install reflective street signs on all intersections within the subdivisions.
- Install “No Outlet” signs at intersections of no outlet roads.
- Consider designating and signing emergency ingress/egress routes.
- Consider designating Gilchrist School as an official evacuation gathering point for the community.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage planting of trees or shrubs within Defensible Zone 1 around structures, and prune conifer trees within 30 feet of structures up 8 to 10 feet.
- Consider construction of cisterns or developing ponds suitable for drafting along Crow Creek for firefighting water supplies.

High Plains Grassland Research Station

Station Assessment

Community Description: The 2,870 acre High Plains Grassland Research Station is located in a mixed grass prairie ecosystem immediately west of Warren AFB adjoining County Road 222, and north of Experimental Farm Road. It is accessed from County Road 222. The Station includes an administrative compound with maintenance buildings, an administrative office, and several residences constructed from 1929-32. There is an historic fruit tree arboretum established in the 1930's immediately southeast of the compound managed by the City of Cheyenne along with Roundtop Park, north of the administrative loop. A municipal water treatment plant is on the east side of the compound. There are 22 structures on the compound, including two greenhouses and the water plant building. Many of the structures have wood shingles for both siding and roofing. The water plant is concrete.



Station Main Entrance



Station Administrative Compound

Two cemeteries are planned on portions of the Station reverting to the City of Cheyenne, one to the northeast of the administrative compound and another to the south. Both are in the planning stages at present.

The administrative compound was planted with many different species of trees and shrubs in the early 1930's, many of which are now fully mature and in close proximity to the structures. Vegetation in the administrative compound area consists of various conifer and hardwood species.

Fuel Models are GR2 – Dry Climate Grass in the grassland portion of the Station with TL3 - Moderate Load Conifer Litter and TL6 – Moderate Load Broadleaf Litter in the administrative compound.

Roads and Access: Roads in the administrative compound are generally paved, with graveled roads accessing the water plant and the greenhouse area. Grades are two percent or less, with good alignment for large trucks. Road width is generally double-lane with drained prisms. There is one signed access point to County Road 222 for the Station compound, a graveled access from Road 222 to the water plant, and several wire-gated access points to the grassland pastures off both Road 222 and Experimental Farm Road.



Historic Fruit Tree Arboretum

Wildfire Risk: The most likely fire starts would come from a structure fire, lightning, or wildfire moving into the Station. Spread of the fire would be governed primarily by wind speed and direction. Grass would be the primary carrier of wildfire in most of the Station, therefore wildfires would likely be fast-moving, moderate to high intensity with relatively short duration. The administrative compound is subject to crown fire due to low crown base heights, extensive ladder fuels, and dense tree spacing. A wildland fire could easily involve the Station structures due

to the siding and roof composition on the buildings and the flammable vegetation in close proximity.

The Station has several fire hydrants on the paved administrative loop road. There is a pond north of the administrative compound which could serve as a water source for aerial operations. The large meadows surrounding the administrative compound could serve as safety areas if needed. Mowing the meadows during fire seasons would increase their utility as safety zones.

Fire Suppression Challenges: In addition, there were several other factors noted including:

- a component of standing dead and down woody fuels
- the live conifers have a low crown base height
- Wood shingle roofing and siding
- Lack of defensible space around buildings

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Develop defensible space in Zones 1 and 2 around structures per *Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones* (CSFS Publication FIRE 2012-1,

Appendix E) or *Living with Wildfire in Wyoming*, pages 4 – 10 (Thompson and Miller 2013). Mow 100 feet around structures in grasslands during fire season.

- Develop access and drafting pad at pond.
- Consider replacing wood shingle roofs with metal, concrete- composite shingles or other less flammable materials.

Lakeview Estates

Community Assessment

Community Description: Lakeview Estates is comprised of four lots, ranging from 36.3 to 40.5 acres. There is one home currently in the subdivision, with a paved driveway access point onto Highway 210 (Happy Jack Road). The community sits above Granite Springs Reservoir with a predominantly southern aspect. Several drainages dissect the area where the homes are located and would support rapid topographic uphill fire spread. Fuel type is grass with timber in the drainages. Fuel Models are primarily GR2 – Dry Climate Grass, with small areas of GS1 – Low Load Dry Climate Grass-Shrub and TU1 – Low Load Dry Climate Tree-Grass-Shrub.



Vegetation around the home is generally well maintained; however, some of the landscape shrubbery would be very receptive to ember ignition and could impact the home. The home is large, around 3000-square feet, with associated outbuildings. The home is located one-half mile or more from the Highway 210; however, the driveway is wide, well maintained and the address is clearly visible. As with many of the subdivisions in the area, the grass component would sustain rapid rates of spread with topography, timber and aspect further contributing to potential high spread rates and spotting potential.

Homes within and surrounding this subdivision are located at the top or upper third of the slope up from the lake. Generally, mitigation and fuel reduction is acceptable; however, planted shrubbery around the homes could be receptive fuel beds for embers. Attention to Zone 1 is critical due to the potential of rapid uphill runs and spotting potential.



Roads and Access: Access to the tracts within this subdivision is good with a paved, well-maintained driveway to the lone residence on tract 3. The driveway provides access to a steel shop building on tract 4 as well as access to another residence to the south on a non-subdivision lot bordering Granite Springs Lake. If evacuation were necessary, it is a straight line to Happy Jack Road with very little in the way of topographic barriers. The primary vulnerability would be fire moving into the subdivision from the Granite Lake area, which could result in rapid uphill runs and short- to medium-range spotting.



Wildfire Risk: Ignitions within the subdivision would likely be natural caused such as lightning. Ignitions occurring near the lake – potentially from recreationalists -- would likely make a rapid uphill run and impact the structures prior to the arrival of local responders or aviation assets. With the timber and the associated topography, short-range spotting is highly likely, with longer-range spotting potential very likely on a high fire danger day or during a wind event. Slope, drainage and prevailing wind alignment are very favorable for fire spread in this subdivision.

Fire Suppression Challenges:

- A component of standing dead and down woody fuels
- Shrubbery and planted trees in close proximity to the home which could be receptive to ember showers
- Long response times for volunteer firefighters and minimal resources for initial attack

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Cut and remove dead down and dead standing trees in the drainages and slope on the west side of the subdivision. Employ standard mitigation techniques for the remaining brush and trees.
- Mow, graze or maintain grass within 100 feet of structures and on the perimeter of the subdivision to reduce fire intensity and spread in the grass fuel component

- Encourage residents to install reflective address signs as homes are built so that emergency responders and firefighters can locate them.

MOUNTAIN MEADOWS

Community Assessment



Community Description: The 44-home Mountain Meadows community is located in a forest and grassland ecosystem. There are 92 lots in the community, with the mean size being 5.3 acres. Vegetation in the area consists of ponderosa pine, mountain shrub and grass. Fuel Models are GR2 – Dry Climate Grass, GS2 – Dry Climate Moderate Load Grass-Shrub, TL4 – Small Downed Logs, and TL8 – Long-Needle Litter. The homes have been built within the past 25 years. Siding on the homes is wood, log, or wood product with a few brick façades. Roofing material is asphalt or metal; there were no cedar shakes observed.

Roads and Access: Roads in the area are single to 1½ lane native surface, with spot gravel in some areas. Grades as steep as 15% were found, with poor alignment for large trucks or semi-trailers. There is only one access point to Granite Springs Road and it is gated, requiring a key code. There are limited areas to turn around larger vehicles, including fire apparatus and no-outlet roads are usually not designated.



Large open grassland areas were observed in the north-central portion of the subdivision, which could serve as a safety area, if needed. Only a Type 6 engine could access the southern two-thirds of the subdivision.

Wildfire Risk: The most likely fire starts would come from a house fire, chimney spark or lightning. Spread of the fire would be governed primarily by topography, followed by wind speed and direction.

Some homes have timber and shrubs within Zone 2, where fire could be problematic due to steep and complex topography.



Fire Suppression Challenges:

Good access is key to any sort of safe and effective emergency response. In the case of Mountain Meadows, the location, width,

A large component of standing dead and down trees below homes could make firefighting difficult.

alignment and grade of the roads all provide challenges for firefighters and also threaten the safety of homeowners. In addition, there were several other factors noted including:

- No reflective address signs (lot #)
- A large component of standing dead and down woody fuels
- The live conifers have a low crown base height
- There are homes located at the tops of chutes
- No hydrants or additional water storage, and
- Distance from fire station

Nearby Granite Springs Reservoir could serve as a water source for helicopters to dip from.

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a subdivision Firewise program.
- Encourage residents to install reflective lot number signs to help firefighters and emergency responders locate them.
- Work with the County to name and sign the roads within the subdivision. **Sign the loop road route and the no-outlet roads to assist first responders and residents moving into or out of the subdivision in an emergency situation.**
- On roads with less than 20 foot-wide running surfaces, develop turnouts at 1000 foot intervals to allow emergency or evacuating vehicles to pass safely.
- Develop 90-foot diameter turnarounds on the ends of no-outlet roads.
- Develop shaded fuelbreaks around the forested portions of the subdivision boundaries.
- Thin overstocked stands to a crown spacing of 10 to 12 feet and remove large (3 inch + diameter) downed dead wood within forested areas.
- Prune conifers up 8-10 feet in Zones 1 and 2 around structures and replace flammable vegetation within 5 feet of structures with fire-resistant vegetation and/or non-flammable mulches.
- Mow 100 feet wide or to lot boundary around homes in grassland areas.
- Develop firefighting water storage/use capabilities in several locations in subdivision.

Mountain Shadow / Federal Townsite/ Iron Mountain Church Community Assessment



Mountain Shadow subdivision looking southwest



Federal Townsite looking south

Community Description: The Mountain Shadow / Federal Townsite / Iron Mountain Church community is located in LCFA, south of Highway 211 and just east of the BNSF Railroad R-O-W within a grassland ecosystem. Primary Fuel Model is GR2- Dry Climate Grass with inclusions of GS2- Dry Climate Grass/Low Shrub.

The Mountain Shadow community has 45 residences with 74 platted lots. Mean lot size is 7.1 acres with the largest lot at 16.9 acres and the smallest at 3.2 acres. Home construction is varied, ranging from vinyl siding to composite wood siding to logs and metal or shingle roofs. Most homes have irrigated and mowed lawns, although they tend to extend less than 50 feet from the residence. A few homes have no discernable lawns. Most, but not all, parcels have livestock, primarily horses. Two parcels have significant amounts of old vehicles, boats and equipment within 100 feet of the residence. The subdivision surrounds the Federal townsite on the north, east and south. A rock bluff runs north-south through the middle of the subdivision.

The Federal townsite has three residences and several outbuildings. Two residences are modular homes, with composite wood siding

and asphalt shingle roofs. The other is masonry with asphalt shingle roof. There is a significant amount of old vehicles and equipment within 100 feet of the residences. The townsite is platted for 28 lots. The BNSF Railroad lies immediately to the west of the townsite.



Iron Mountain Church

The Iron Mountain Church parcel lies on the southwest side of Highway 211 where the BNSF railroad R-O-W crosses the highway. The church and one outbuilding are the only structures but there is an historic cemetery to the southeast of the church. The church has a graveled parking area to the north. The building is metal-sided with a metal roof.

Roads and Access: Mountain Shadow subdivision has four access points, one from State Highway 211 on the northeast, one from County Road 110 on the southeast, one from County Road 109 on the west through Federal and one from Shadow Valley Road from the south. The roads within the subdivision are all

1 to 1.5-lane gravel-surfaced with good alignment with grades generally less than 5%. All roads are accessible by a Type 1 engine. Federal Townsite is accessible through Mountain Shadow subdivision or from County Road 109 along the railroad. Iron Mountain Church is accessed directly from Highway 211 and County Road 109.

Wildfire Risk: Due to the lack of tree or large shrub vegetation in the area, a house or chimney fire or a railroad fire are the most likely ignition sources. There is also the possibility of a grassland fire moving into the subdivision.

Roofs and siding construction materials are fairly fire resistant. There was minimal vegetation within Zone 1, though some structures did have large shrubs or flammable materials.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With FireWise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along railroad and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local water supply

Plan of Action:

- Encourage residents to post reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting and remove flammable materials within Defensible Zone 1 around structures.
- Consider construction of cistern for firefighting water supply.
- **Sign the loop road route to assist first responders and residents with moving into or out of the subdivision in an emergency situation.**

North Horse Creek Community Assessment

Community Description: This community is located in LCFA at the intersection of Highway 211, County Roads 228 and 228A and Horse Creek within a grassland ecosystem. Primary Fuel Model is GR2-Dry Climate Grass. The community is essentially one neighborhood and will be discussed as such in this assessment.



The North Horse Creek community contains six residences, a small post office and the Horse Creek Fire Station #3, all within a 1-mile radius. Homes have been built over the past 10 to 50 years, so construction is varied, ranging from vinyl siding to composite wood siding to masonry. Roofs are metal or asphalt shingle. Some homes have irrigated and mowed lawns. Many parcels have livestock, primarily horses, so there are outbuildings on most properties. The Union Pacific Railroad has a multi-track siding $\frac{3}{4}$ mile to the northwest of the post office and fire station along Road 228A.

Roads and Access: The residences are all accessed from Road 228 or Highway 211. The roads within the community are all 1.5 to 2-lane gravel-surfaced with good alignment and grades generally less than 2%. All roads are accessible by a Type 1 engine.

Wildfire Risk: A house or chimney fire are the most likely ignition sources. There is also the possibility of a lightning-caused grassland fire moving into the subdivision.



Roofs and siding construction materials are usually fire resistant with some exceptions, though some structures do have shrubs or flammable materials stored within Zone 1. Since the homes are 10 or more years old, trees and shrubs are found within 30 feet of the houses.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With Firewise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time for volunteers reaching the fire station
- Potential from fires starting along the railroad or highway and moving into community
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Large trees and shrubs next to homes
- Access across the railroad tracks due to the frequency of rail traffic and crossing spacing



Plan of Action:

- Encourage residents to install reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting within Defensible Zone 1 around structures, and prune conifer trees within 30 feet of structures up 8 to 10 feet.
- The Fire District should work with the State, County, and Union Pacific to create additional crossings useable for emergency responders.

North Range Business Park Community Assessment

Community

Description: The North Range Business Park is located within a grassland ecosystem at the southwest junction of Roundtop Road and Highway 210 across from Rolling Hills subdivision. Fuel Model is GR2-Dry Climate Grass. No residences are in the business park, but several large industrial structures are present, including a regional distribution warehouse of over 900,000-square feet and a national computing center.



Roads and Access: The business park has four access points, two from Roundtop Road and two from Highway 210. The roads within the subdivision are all two-lane paved with good alignment. Road shoulders have been mowed out 10 feet from road surface. All roads are accessible by a Type 1 structural engine.

Wildfire Risk: Due to the lack of sizeable vegetation in the area, a lightning strike or structure fire is the most likely ignition source. There is also the possibility of a grassland fire moving into the subdivision.

The businesses in the park are primarily steel construction with some masonry facades. There is only minimal vegetation within Zone 1, though some structures do have flammable materials (pallets, etc.) stored within Zone 1.



North Range Business Park Open Space

There is dedicated open space with walking trails in the northeast corner of the business park. Trees have been planted there but the current fuel model is still GR2. As the trees grow the fuel model will change to one more like TU4 –Dwarf Conifer with Understory, with more vertical fuels and increased risk of spotting.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the structures. The business structures will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Grass fires generally move very rapidly
- Loop roads
- High value structures

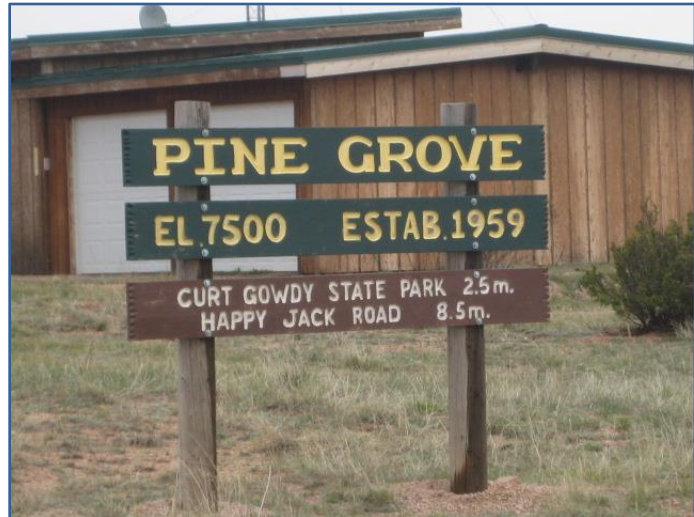
Plan of Action:

- Mow 100 feet space around structures adjoining grasslands and 50 feet either side of roads during fire seasons to provide wider fuelbreaks.
- Sign loop roads to facilitate emergency evacuation routes.

Pine Grove

Community Assessment

Community Description: The 48-home Pine Grove community is located in a forest and grassland ecosystem north of Interstate 80 and south of Granite Springs Reservoir. Access is from County Road 210. There are 112 lots in the community and lot sizes range from 0.3 – 6.0 acres, with the mean size being 1.2 acres. Vegetation in the area consists of ponderosa pine, mountain shrubs and grass. Fuel Models are GR2 – Dry Climate Grass, GS2 – Dry Climate Moderate Load Grass-Shrub, TL4 – Small Downed Logs, and TL8 – Long-Needle Litter. The homes have been built over the past 55 years, so reflect a variety of construction types. Siding on most homes is wood, log, or wood product with a few exceptions such as a home constructed of bottles laid like masonry and a steel-sided home. Roofing material is asphalt, tile shingles or metal; there were no cedar shakes observed.



Siding on most homes is wood, log, or wood product with a few exceptions such as a home constructed of bottles laid like masonry and a steel-sided home. Roofing material is asphalt, tile shingles or metal; there were no cedar shakes observed.

Roads and Access: Roads in the community with the exception of County Road 210 are native surface. Grades as steep as 15% were found, with poor alignment for large trucks or semi-trailers. Cul d' sacs have limited turnaround area. There are six access points to County Road 210 from different portions of the community.

Large open grassland areas were observed in the central portion of the community along the County Road, which could serve as a safety area if needed.

Wildfire Risk: The most likely fire starts would come from a house fire, lightning, or wildfire moving into the subdivision. Spread of the fire would be governed primarily by topography, followed by wind speed and direction. Grass would be the primary carrier of wildfire in most of the subdivision; therefore, wildfires would likely be fast moving, moderate to high intensity with relatively short duration. Fire behavior would be further complicated by steep and complex topography.



Pine Grove Landscape

Some homes have continuous fuels, primarily trees and shrubs, within 30 feet of the structure (Defensible Space Zones 1 and 2), where fire could be problematic due to ember showers and radiant heat.

Fire Suppression Challenges:

Good access is key to any sort of safe and effective emergency response. In the case of Pine Grove, the location, width, alignment and grade or the roads all provide challenges for firefighters but also threaten the safety of homeowners. In addition, there were several other factors noted including:



Home in chute with heavy dead fuels

- No reflective address signs (lot #'s)
- A large component of standing dead and down woody fuels
- The live conifers have a low crown base height
- There are home located at the tops of chutes
- No hydrants or additional water storage, and
- Long response times and minimal resources for initial attack

Nearby Granite Springs and Crystal Reservoirs and a private pond at the north end of the subdivision could serve as a water source for firefighters.

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a community Firewise program.
- Encourage residents to install reflective lot number signs to help firefighters and emergency responders locate them.
- **Sign the loop road routes and the no-outlet roads to assist first responders and residents moving into or out of the subdivision in an emergency situation.**
- On roads with less than 20 foot-wide running surfaces, develop turnouts at 1000 foot intervals to allow emergency or evacuating vehicles to pass safely.
- Develop 90-foot diameter turnarounds on the ends of no-outlet roads.
- Develop shaded fuelbreaks around the forested portions of the subdivision boundaries.
- Thin overstocked stands to a crown spacing of 10 to 12 feet and remove large (3 inch + diameter) downed dead wood within forested areas.
- Prune conifers up 8-10 feet in Zones 1 and 2 around structures and replace flammable vegetation within 5 feet of structures with fire-resistant vegetation and/or non-flammable mulches.
- Mow 100 feet wide or to lot boundary around homes in grassland areas.
- Develop firefighting water storage/use capabilities in several locations in subdivision.

Rocking Star Ranch

Community Assessment



Community Description: The Rocking Star Ranch community is located within a grassland ecosystem. Fuel Model is GR2 – Dry Climate Grass. There are homes on 48 of its 179 lots, all of which have been built within the past 10 years. Lots range in size from 7.6 – 8.7 acres with a mean size of 8.3 acres. Homes are generally wood composite siding with brick facades and asphalt shingle roofs. Most homes have irrigated and mowed lawns. There were no livestock present.

Roads and Access: The subdivision has four access points from State Highway 211 and the roads within the subdivision are all 1.5 to 2-lane with good alignment and grades less than 5%. Road shoulders have been mowed out 10 feet from road surface. All roads are accessible by a Type 1 engine.

Wildfire Risk: Due to the lack of tree or shrub vegetation in the area, a house or chimney fire is the most likely ignition source. There is also the possibility of a grassland fire moving into the subdivision.

With homes being newer, roofs and siding construction materials are fairly fire resistant. There was only minimal vegetation within Zone 1, though some homes did have flammable materials stored within Zone 1.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. Individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

The subdivision has two hydrants with water storage tanks for fire use located at the North Ridge Drive and Star Bright Drive entrances off State Highway 211.



Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)

Plan of Action:

- Encourage residents to put up reflective address signs (lot numbers) to help firefighters or emergency responders locate them.
- Provide training to all firefighters about working around gas pipelines.
- Mow 100 feet around residences and 50 feet either side of roads during fire seasons when grass exceeds 8" in height.
- Discourage tree or shrub planting within Zone 1 around structures.

Rolling Hills Estates / Cox Country / Fisher King / Deer Crossing / Egge Ranchettes

Community Assessment

Community Description: These five subdivisions are located in Fire LCFA north of Highway 210 and west of Roundtop Road within a grassland ecosystem. Primary Fuel Model is GR2-Dry Climate Grass. The subdivisions are situated along Roundtop Road in close proximity to one another and share access roads. The community is essentially one neighborhood and will be discussed as such in this assessment.

The Rolling Hills community has 181 residences with 194 platted lots. Homes have been built over the past 20 to 30 years, so construction is varied, ranging from vinyl siding to composite wood siding to brick facades and log homes. Most roofs are metal or asphalt shingle, but two wood-shingled roofs were noted. Most homes have irrigated and mowed lawns. Many parcels have livestock, primarily horses, so there are outbuildings on most properties.



Roads and Access: The subdivisions are all accessed from Telephone Road, with seven separate access points that are connected with other cross streets. There is another main access point on McKinney Road from Highway 210. The roads within the community are all 1.5 to 2-lane gravel-surfaced with good alignment and grades generally less than 2%. All roads are accessible by a Type 1 engine.

Wildfire Risk: A house fire or chimney fire are the most likely ignition sources. There is also the possibility of a lightning-

caused grassland fire moving into the subdivision.

Roofs and siding construction materials are usually fire resistant with some exceptions. There is usually good defensible space within Zone 1, though some structures do have shrubs or



flammable materials stored within Zone 1. Since the subdivisions are 20 or more years old, trees and shrubs are found within 30 feet of many houses.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With Firewise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

There is a pond between Rucker and Elling Roads in the center of the community that can serve as a firefighting water source.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along the County road and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local firefighting water supply
- Large trees and shrubs next to homes

Plan of Action:

- Work with County Emergency Management and the local Fire District to develop a community Firewise program.
- Encourage residents to put up reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet around residences and 50 feet either side of roads during fire seasons when grass exceeds 8" in height.
- Discourage tree or shrub planting within Defensible Zone 1 around structures, and prune trees within 30 feet of structures up 8 to 10 feet.
- Consider addition of a cistern for firefighting water supply.
- Construct a water-drafting pad at the pond between Rucker and Elling Roads.

Shellback / Foxhaven

Community Assessment

Community Description: The Shellback and Foxhaven subdivisions are located within a grassland ecosystem with riparian shrubs and hardwoods adjoining the subdivision on the south side along Crow Creek. Primary Fuel Model is GR2-Dry Climate Grass with TL2 – Low Load Broadleaf Litter along the riparian area. There are homes on five of the 13 lots in Shellback, and one home on the 10 lots in Foxhaven, all of which have been built within the past 10 years. Homes are brick and all roofs have asphalt shingles. The homes have irrigated and mowed lawns and landscaping. There were no livestock present.



Roads and Access: The subdivisions are accessed from Shellback Road off Experimental Farm Road west of Roundtop Road. The roads within the subdivisions are all 2-lane gravel surface with good alignment. All roads are accessible by a Type 1 engine.



Wildfire Risk: A house or chimney fire is the most likely ignition source. There is also the possibility of a grassland fire moving into the subdivisions.

With homes being newer, roofs and siding construction materials are fairly fire resistant. There was only minimal vegetation within Zone 1, although most homes have wood decks. All the homes have trees planted within 30 feet of the residence. As the trees grow larger, keeping the lower 1/3 pruned to reduce the opportunity for ground fires crowning is recommended. Implementing Firewise mitigation within Zones 1 and 2 and keeping grasses mowed, especially as they dry out, can help

provide fuel breaks around the homes. Individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area under most conditions.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Lack of hydrants or central water supply
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Access to Shellback Road is across the Union Pacific Railroad tracks

Plan of Action:

- Encourage residents to put up reflective address signing signs to help firefighters or emergency responders locate them.
- Implement Firewise mitigation procedures within 30 feet of the residences. Mow 100 feet around residences and 50 feet either side of roads during fire seasons.
- Develop water supply for firefighting use (cistern, dedicated well, etc.)
- Consider developing a secondary emergency access route to the subdivisions that does not require a railroad crossing.

Silver Sage Estates /Fox Meadows / Whispering Meadows

Community Assessment

Community Description: The Silver Sage Estates, Fox Meadows and Whispering Meadows subdivisions are located in LCFA south of Highway 211 within a grassland ecosystem. Primary Fuel Model is GR2- Dry Climate Grass. The subdivisions are situated along Romsa Road in close proximity to one another.

The Silver Sage subdivision has 40 residences with 46 platted lots. Mean lot size is 10.0 acres with the largest lot at 14.0 acres and the smallest at 6.5 acres. Fox Meadows has 19 platted lots with 13

residences and average lot size of 41.9 acres. Whispering Meadows has 16 platted lots with 10 residences. The largest lot is 40.6 acres; smallest 37.2 acres and average size 39.5 acres. Home construction is varied, ranging from vinyl siding to composite wood siding to brick facades and metal or shingle roofs. Most homes have irrigated and mowed lawns, although they tend to extend less than 50 feet from the residence. Many parcels have livestock, primarily horses, so there are outbuildings on most properties.

Roads and Access: The subdivisions are all accessed from Romsa Road (County Roads 215 and 113). Silver Sage has two access points, while Fox Meadows has two access points and another off Highway 211. Several homes have direct driveway access to Romsa Road. Whispering

Meadows has two access points. The roads within the subdivisions are all 1 to 1.5-lane gravel-surfaced with good alignment and grades generally less than 2%. All roads are accessible by a Type 1 engine.

Wildfire Risk: Due to very few trees or large shrub vegetation in the area, a house or chimney fire are the most likely ignition sources. There is also the possibility of a grassland fire moving into the subdivision.



Roofs and siding construction materials are fairly fire resistant. There was minimal vegetation within Zone 1, though some structures did have shrubs or flammable materials stored within Zone 1.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With FireWise mitigation put into practice in Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along highway and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local firefighting water supply

Plan of Action:

- Encourage residents to install reflective address signing signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting within Defensible Zone 1 around structures.
- Consider construction of cistern for firefighting water supply.

Spring Creek Ranches Community Assessment

Community Description: The Spring Creek Ranches subdivision is located in LCFA south of Highway 211 within a grassland ecosystem. Primary Fuel Model is GR2- Dry Climate Grass.

The Spring Creek Ranches subdivision has 57 residences with 112 platted lots. Mean lot size is 5.3 acres with the largest lot at 10.8 acres and the smallest at 4.1 acres. Home construction is varied, ranging from vinyl siding to composite wood siding to brick facades and metal or shingle roofs. Most homes have irrigated and mowed lawns, although they tend to extend less than 50 feet from the residence. Several parcels have livestock, primarily horses.



Roads and Access: The subdivision is accessed from Highway 211 and County Road 215 and has two access points. The roads within the subdivision are all 1 to 1.5-lane gravel-surfaced with good alignment and grades generally less than 4%. All roads are accessible by a Type 1 engine.

Wildfire Risk: Due to very few trees or large shrub vegetation in the area, a house or chimney fire are the most likely ignition sources. There is also the possibility of a grassland fire moving into the subdivision.



Roofs and siding construction materials are fairly fire resistant. There was minimal vegetation within Zone 1, though some structures did have shrubs or flammable materials stored within Zone 1.

Keeping grasses mowed, especially as they dry out, can help provide fuel breaks around the homes. With Firewise mitigation put into practice in

Zones 1 and 2, individual homes will provide safe structures to shelter in place should there be a fast-moving grass fire in the area.

Fire Suppression Challenges: There are several challenges to fighting a fire in this community including:

- Response time from the closest fire station
- Potential from fires starting along highway and moving into subdivision
- Grass fires generally move very rapidly
- Lack of reflective address signage (lot numbers)
- Lack of local firefighting water supply

Plan of Action:

- Encourage residents to post reflective address signs to help firefighters or emergency responders locate them.
- Mow 100 feet space around residences and 50 feet either side of roads during fire seasons when grass exceeds eight inches in height.
- Discourage tree or shrub planting within Defensible Zone 1 around structures.
- Consider addition of cistern for firefighting water supply.

TABLE MOUNTAIN RANCHES

Community Assessment

Community Description: There are approximately 108 homes located within the subdivision. Most are wood frame with metal or composition roof materials and include stick built as well as manufactured homes. Terrain is generally rolling hills with several distinct ridgelines as well as flat or mesa areas. Grass is the predominant fuel type within the subdivisions. The major Fuel Model is GR2 – Dry Climate Grassland. The Crow Creek drainage that runs west from Road 109 has notable terrain and fuel changes. Terrain is steep and a brush component (Fuel Model GS2 – Dry Climate Grass/Shrub) exists on the slope uphill from the drainage area. Homes are built on the ridgelines on both the north and south rim of the drainage. Land use is generally rural livestock with most properties having horses or other livestock. Approximately five miles west of Road 109 is the John and Annie Woodhouse Recreation and Wildlife area managed by the Wyoming Game and Fish Department.



Looking into the Table Mountain community

The subdivision is located 3-4 miles from Highway 211 (Happy Jack Road). A fire moving from south to north could result in limited visibility during an evacuation and potential fire impact to the road. Within the subdivision, a number of the roads have hills with limited sight distance. Vehicle collisions could result as a result of the limited sight distance and reduced visibility due to smoke. Address signage for homes is random; many have no visible address.



Roads and Access: Roads are generally wide and well maintained allowing for two-way ingress and egress.

Wildfire Risk: Likely ignition sources within the community would be natural from lightning or human-caused by either machinery or motor vehicles. The fuel component of light flashy fuels would be very receptive to ignition with rapid rates of spread in the summer months when the grass is cured as well as in the pre-green up period during the winter to spring transition. Homes will be subject to short duration impact from a fire, however, the homes built mid slope and on ridgelines would be subject to short duration, high intensity uphill runs in the grass. Homes in the Crow Creek drainage would be subject to higher intensity, longer duration impacts in the brush component.

Wildfire Preparedness Activities: A majority of the grassland properties are grazed; some mowing has occurred. These efforts appear to be individual homeowner efforts, not a coordinated effort. Future activities should focus on mowing grass areas within 100 feet of homes and along roads. Individual homes should focus on Zones 1 and 2 to reduce ember-receptive fuels with the Zone 1 and reduce the threat and intensity of radiant heat.



Areas of rolling hills could be susceptible to fast moving grass fires.

Fire Suppression Challenges: The size of the subdivision and number of homes with horses would result in considerable efforts and use of resources during a fire event. There are several areas along Road 109 between Hyde Merritt and Crow Creek that may be considered temporary refuge areas (TRA), including the old gravel pit and several of the irrigated fields.

Plan of Action: There are several actions that address the concerns listed above that could be turned into action items including:

- Work with County Emergency Management and the local Fire District to develop a community Firewise program.
- Focus for fire resilience should be on defensible space creation in Zone 1 for homes in the grasslands and Zones 1 and 2 in the Crow Creek drainage.
- Encourage residents to install reflective address signs to help firefighters or emergency responders locate them.
- Make residents aware of temporary refuge areas.
- Develop evacuation plan(s) for livestock.
- Mow grass 50 feet wide along roads when it reaches 8" in height.
- Develop cisterns and/or water drafting points along Crow Creek for firefighting water sources.