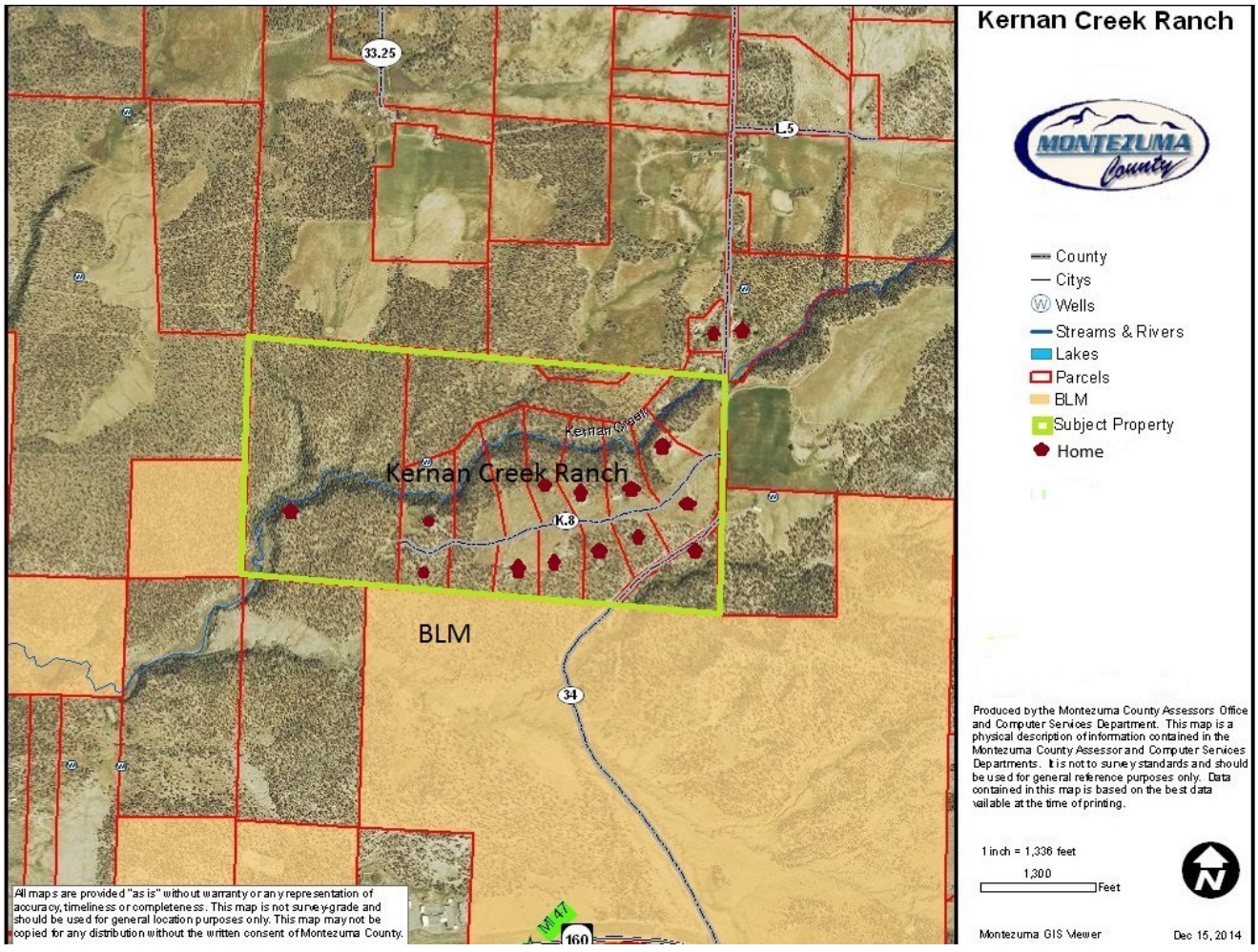
KERNAN CREEK RANCH COMMUNITY WILDFIRE RISK ASSESSMENT (January 2015)

COMMUNITY AND LOCATION

Kernan Creek Ranch is located in Montezuma County. The subdivision is on the west side of Montezuma County (MC) Road 34, approximately 1.25 miles north of US Highway 160. Kernan Canyon dissects the community from the southwest corner of the subdivision to the northeast corner of the subdivision, with all of the homes in the subdivision on the south side of the canyon. Bureau of Land Management (BLM) managed land abuts the community to the south. Several 40-acre BLM parcels are located to the west. The subdivision is at the eastern extent of the Mancos Volunteer Fire Protection District.

Kernan Creek Ranch includes 12 homes at the end of 2014 on 17 lots and tracts spanning 213 acres. The 15 lots range from 5.2 to 12.2 acres and the Tracts are 13 acres and 55 acres. The homes are mostly less than 20 years-old with a mix of Santa Fe style homes, stucco homes with flat membrane or graveled roofs and other southwest stucco homes with pitched roofs. There is one home within the main part of the subdivision with wood siding. A new cabin on the 13-acre tract on the east side of County Road 34 also has wood siding. A 105.3-acre tract, spanning the west boundary of the subdivision but not included in the HOA, is accessed from the end of subdivision Road K.8 and also has a wood-sided seasonal cabin. There are two homes on the wooded north rim of Kernan Canyon along Road 34 that are outside of the subdivision, but would also be affected by a fire burning through Kernan Creek Ranch. There are less than 70 wooded acres on Lots 1-15.

At about 6700’ ASL, Kernan Creek Ranch is characterized by persistent piñon-juniper woodlands and sagebrush. Road K.8 into the subdivision bisects the sagebrush meadow, and most homes are positioned at the transition from sagebrush to woodlands. The main branch of the approximately 50-foot deep Kernan Canyon runs from the southwest corner of the subdivision to the northeast corner of the subdivision, with all of the homes in the subdivision on the south side of the canyon. The piñon-juniper woodlands are predominately juniper, after an Ips beetle epidemic (2002-2003) resulted in high piñon mortality in the area. A significant component of dead and down piñon trees influences the forest structure and potential fire behavior where residents have not removed the dead trees.

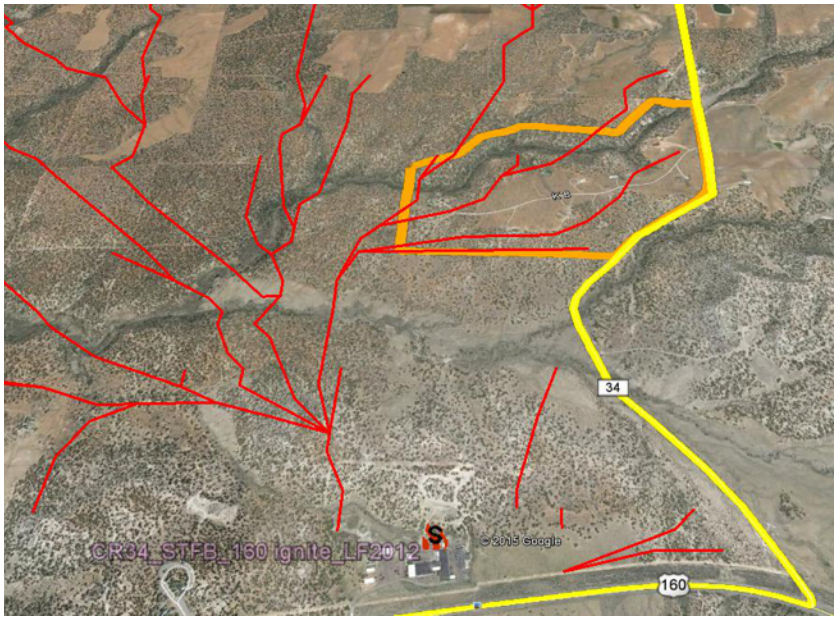


HISTORY AND FIRE SPREAD POTENTIAL

The local landscape has been dominated by fire for millennia. With habitation, both lightning and human-caused fires are a very real possibility. Records and community residents describe the frequent occurrence of lightning fires in the area – most often limited to a single tree because of environmental conditions and quick response by both firefighters and residents. The community benefits from concerned residents who scout for fires from their rooftops, as well as being in direct line of sight from the Park Point Fire Lookout Tower in Mesa Verde National Park immediately to the south.

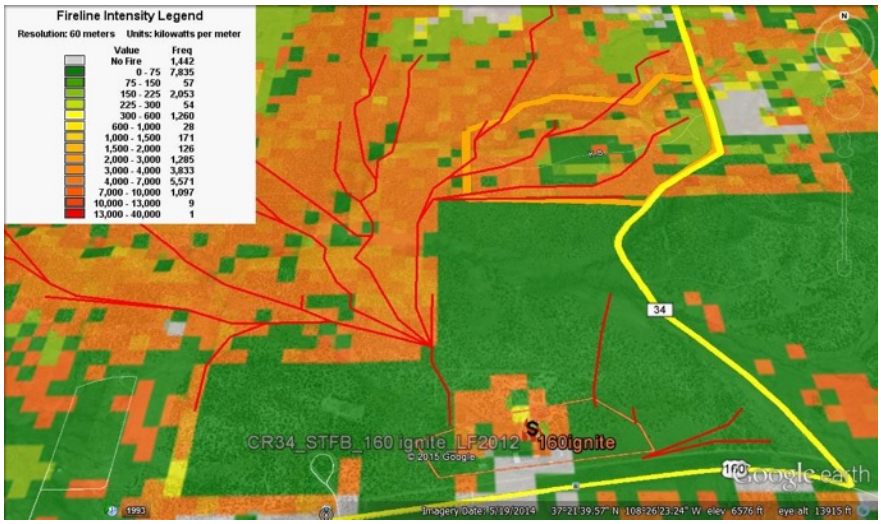
A lightning fire started further to the southwest on BLM land along Kernan Canyon in 2013. It was quickly extinguished by a single engine air tanker. A spark from a nearby resident who was welding in June of 2006 started the Cash Fire two canyons to the west. Many residents in this area use open burning as a tool. In addition to other local residents further to the west and southwest, Road 34, US Highway 160, Southwest Colorado Community College, and the Ute Mountain Rest Area are all potential point sources for human ignitions that could spread to this neighborhood.

A fire becoming established in Kernan Canyon, west of the subdivision, would present the greatest threat to the homes in Kernan Creek Ranch. As Kernan Canyon is aligned with the prevailing winds out of the southwest, a fire fanned by these winds could threaten the wooded, western edge of the community, especially homes on the southern rim of the canyon. However, all homes in the subdivision are at risk from fire, as wind-driven fires in piñon-juniper woodlands can be unpredictable.



This aerial view of Kernan Creek (outlined in orange) shows the projected main path (red lines) of a fire started around the Community College on a red flag day. A fire behavior model of an ignition at the Community College south of Kernan Creek Ranch predicts that the previous mitigation done on BLM managed lands to the south shifts the main path of the fire into Kernan Creek Ranches.

The map below shows fire intensity of the same fire behavior model. The forested areas of Kernan Creek Ranch are predicted to burn intensely; however, this fuel modeling does not factor in recent mitigation work done by residents.



PAST AND CURRENT WILDFIRE PREPAREDNESS ACTIVITIES

Kernan Creek Ranch has been peripherally involved with FireWise of Southwest Colorado since 2003. Many homes have been built with wildfire in mind, and six of the 12 homes accessed from Road K.8 have had home wildfire risk assessments conducted over the summers from 2012-2014. Homeowners living within the subdivision have made efforts to reduce the fuel load around their homes and on their properties to varying degrees. Many have taken significant action that may save their homes, whether or not a fire engine is actively defending the structures.

Residents have made efforts to reduce density of the juniper forest including removal of ladder fuels as seen in the background.

Previous visits in the neighborhood indicated concerns about the dense rabbitbrush lining Road K.8. The subdivision mowed the rabbitbrush in 2014 within the road right-of-way, which will significantly reduce the fire intensity along the road in the event of a wildfire, aid evacuations and emergency response and strengthen Road K.8 as a potential fire break.

BLM managed land abutting a Kernan Creek Lot.

Contemporaneously with the Ips Beetle epidemic, the BLM did mechanical thinning on much of their large parcel south of the community. The work was primarily done south of the arroyo, which is a southern feeder of Kernan Canyon, and piñon trees that were not masticated died and remain on the adjacent BLM land as dead and down thousand-hour fuels. A cultural site adjacent to the community to the south excluded the mechanical treatment along a portion of the BLM boundary with the community which remains with continuous fuels that could spread a lightning fire.

Area recently treated with Brush Hog mastication within Kernan Creek Ranch.

Additional mechanical treatment was also done in 2014 by the owner of the two western lots on the north side of K.8 along the south rim of Kernan Canyon. The skid steer-mounted brush hog mastication significantly modified the structure of the fuels to reduce the potential for wildfire to spread into the crowns of the forest out of Kernan Creek. The owner of the 105 aces stretching along the west side of the subdivision followed the lead of the Lot 7 and 8 owner and hired the same contractor to create a 75’ shaded fuel break along the western boundary of the subdivision lots to the rim of Kernan Canyon tying in with the Lot 8 work. Underbrush in the woodland area of the subdivision is minimal, so re-growth and re-treatment is not a frequent challenge in this fuel type. There is also not much of a localized weed source and the adjacent areas of the BLM land that were treated demonstrate an influx of native grasses.

ACCESS

The subdivision has only one access to the area with homes. There is also ATV access to the north rim of Kernan Canyon from the non-subdivision driveway immediately north of Kernan Canyon.

The fence at the entrance gate to the subdivision is narrow, with the potential to create a bottleneck of evacuating residents and emergency responders during a fire.

The road is of adequate width and surface for emergency response and evacuation, with the 2014 brush thinning significantly enhancing the road condition for wildfire response.

K.8 is a wide road and rabbitbrush in the right-of-way has been mowed. Addresses have been uniformly marked.

The final 800 feet of the ¾ mile road enters from shrubland into woodland. Removal of dead trees has been completed on the north side of Road K.8 through the forest, but a 100+ shaded fuel break on both sides of the road tying into the defensible space of the two homes at the end of the road or mitigation of the wooded areas of all four lots would be advantageous.

There is a loop turnaround at the end of K.8 sufficient in size for a fire engine to turn around. From the west side of the turnaround is a gated access leading ¼ mile to a home occupied in the fall on the south rim of the Kernan Canyon on the neighboring 105-acre tract. This could serve as an access point to fire starts on the canyon and may become dangerous due to fuel conditions once a fire begins to spread.

Driveways are marked along K.8 with standard reflective address signs, with the exception of the most recently built home on Lot 2.

All homes have sufficient turnarounds for a tanker truck or brush truck, but they may not all be sufficient for a structure-protection engine due to apron widths, overhead clearance, and/or turnaround radii. Some driveways have dense fuels, though all driveways are relatively straight with the longest being 450 feet (excepting the 105-acre neighboring tract accessed to the west off the turnaround, which has a ¼ mile driveway).

HOME CONSTRUCTION AND LANDSCAPING

Most homes are stucco, though wooden design features create potential ignition hazards.

Native trees and shrubs are considered part of the landscaping.

A number of residences have trellises, which could lead fire to vulnerable portions of the structures or increase the radiant heat to an extent that ignites the homes.

Many outbuildings are vulnerable.

Most homes have stone or gravel patio and wall features.

Vehicles parked in open attached carports are home ignition hazards.

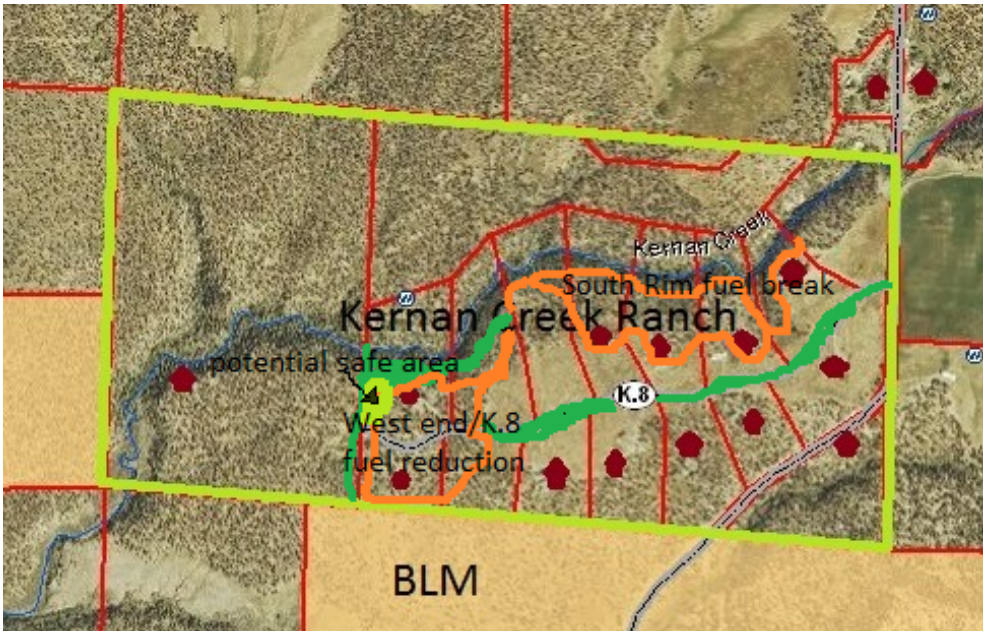
Cordwood from forest thinning stored beneath remaining trees may become ladder fuel for fires.

DEFENSIBLE SPACE ZONES/ FOREST FUELS

Most residents have made significant progress on defensible space, with many of them continuing fuels modification further into the forest for forest health and protection.

Not as much headway in the removal of dead and down fuels has been made on unoccupied and seasonally occupied properties, which increases the potential intensity of a wildfire and the potential for fire to spread. When a property is not a year-round residence, it is difficult to find the time to make fuels reduction a priority, but the reduction of wildfire fuels promotes forest health, increases property values, and reduces the potential harmful impact of fires.

COMMUNITY FUEL BREAKS AND SAFE AREAS



A 75-foot shaded fuel break runs along the western boundary of the subdivision lots and continues along the rim of Kernan Canyon for two lots. The break is wider along Lot 8, though expanding it further onto the Snowden property at the northern extent would enhance the Lot 8 meadow as a potential safe area for emergency responders.

Mechanically treated area on south rim of Kernan Canyon.

A grassy meadow connected to the western shaded fuel break and thinning along the Kernan Canyon rim west of the Hanson-Callender residence could establish a safe area within the forested portion of the subdivision for emergency responders.

Road K.8 now serves as a potential fuel break, as does MC Road 34 to the east.

A shaded fuel break could continue along the south rim of Kernan Canyon.

The shaded fuel break along the western edge of the subdivision lots could be enhanced by widening it and continuing thinning around the homes and along Road K.8.

Treatment of Kernan Creek Ranch properties and the adjoining BLM lands that were not part of the 2002-2003 public lands mastication would reduce the potential for fire to enter the community from the south.

FIRE SUPPRESSION RESOURCES AND CHALLENGES

In regard to responsibility, the location of fire starts and access to them, confusion about private/public land ownership and the Mancos/Cortez fire district boundary could lead to a delayed emergency response in the event of a wildfire. While mutual aid agreements usually lead to more emergency responders, the initial calls and communication can be delayed.

A deep cattle pond, which could be used for dipping or drafting water, lies immediately east of MC Road 34 across from Road K.8.

Flow rates of the three fire hydrants within the subdivision are unknown. Montezuma Water Company does not guarantee any of their lines or hydrants for fire suppression.

EVACUATION READINESS

While a few individual households have evacuation plans, there is an opportunity for improvement of household evacuation readiness and community evacuation planning.

During the field portion of the Community Wildfire Risk Assessment, neighbors discussed the potential of putting a fire info tube at the Ranch entrance and including a map where residents could sign out as they evacuate the neighborhood.

SUMMARY

On December 5, 2014, seven residents of Kernan Creek Ranch, including one FireWise Neighborhood Ambassador, joined the Bureau of Land Management Southwest District Fire Mitigation Specialist, Chris Barth, and the Montezuma County Chapter Coordinator of FireWise of Southwest Colorado, Rebecca Samulski, for a walk-through assessment.

There is evidence of many single-tree lightning strikes and some history of human ignitions in similar neighboring canyons. Road 34 creates a decent fuel break to the southeast and east. Prevailing winds during the height of the wind-driven fire season are out of the west and southwest and align with the orientation of Kernan Canyon.

The subdivision has many advantages, including numerous homes with fire-resistant construction, significant effort to create defensible space around many of the homes, high visibility from neighborhood fire watchers and the Park Point fire lookout tower, visible address signs, a wide road with significant progress reducing the fuels along K.8, and a major start on fuel breaks to the west and on the rim of Kernan Canyon on Lot 7 and Lot 8.

There are many opportunities for homeowners to strengthen their home's defenses and be more prepared to evacuate. Individual preparedness should always be a top priority and in this neighborhood that includes individual defensible spaces.

To reduce the overall threats from wildfire as a community, there are several likely scenarios and mitigating actions to consider.

If a fire runs up Kernan Canyon, it could spread onto the southern mesa affecting homes in Kernan Creek Ranch. A shaded fuel break continuing along the southern rim of the canyon would make it much more difficult for a fire to spread out of the canyon toward homes.

If a fire spreads across the Snowden property, the 75-foot shaded fuel break created in 2014 could help slow a fire, but a wider fuel break would be more effective.

Similarly, a fire could spread from the wooded areas of Kernan Creek Ranch and BLM land to the south. Thinning the fuels on those properties and a southern shaded fuel break would reduce the intensity of a wildfire entering the subdivision from that direction.

Any shaded fuel breaks should be tied together and tied into Zone 1 defensible space around homes.

The action plan includes short-term recommendations to reduce the community's wildfire risks.

PLAN OF ACTION

- Apply for FireWise Communities USA status.
- Remove t-post and short length of fence constricting subdivision entrance.
- Have Mancos Fire Department check flow rates of three hydrants on K.8, as well as driveway aprons and turnarounds.
- Have FireWise include Kernan Creek Ranch in Joint Fire Science Assessments and Surveys.
- Create a fire info tube and evacuation plan including a phone tree or text list.
- Encourage property owners to continue working on evacuation preparedness, reducing home ignition hazards, and expanding defensible space.

COMMUNITY MITIGATION PRIORITIES

Encourage participating lot owners for all shaded fuel breaks to tie their shaded fuel breaks into their own defensible space.

1. Widen the 75-foot shaded fuel break to CSFS Zone 2 defensible space standards along the west on the Snowden tract at the north end to enhance the potential of using the Lot 8 meadow as a safe area and along either side of the boundary on Lot 10 to create a 150-foot shaded fuel break.
2. Create a 100-foot shaded fuel break to CSFS Zone 2 defensible space standards or better along the southern rim of Kernan Canyon from Lot 8 to Road 34. Significant fuel reduction achieving 10’ crown spacing and removing underbrush has been accomplished on several of the lots already.
3. Create a 100-foot shaded fuel break to CSFS Zone 2 defensible space standards in the wooded areas on either side of Road K.8
4. Keep K.8 right-of-way mowed.
5. Create a 150-foot shaded fuel break to CSFS Zone 2 defensible space standards or better along the southern boundary of the subdivision, Lots 10 – 14 at Road 34.

USING AND REVIEWING THIS PLAN

This document is a tool for sharing general information about the wildfire hazards in the Kernan Creek Ranch community. The plan of action was drafted based on input from the professionals conducting the on-site Community Wildfire Risk Assessment and a follow-up meeting of residents discussing the findings of the assessment. The action plan is for short-term goals to be pursued under the lead of the community's FireWise Neighborhood Ambassadors, Charlie and Leslie Hayes. *The Mancos Fire District was unable to participate in the initial assessment and has been invited to give their input to this plan at their convenience.*

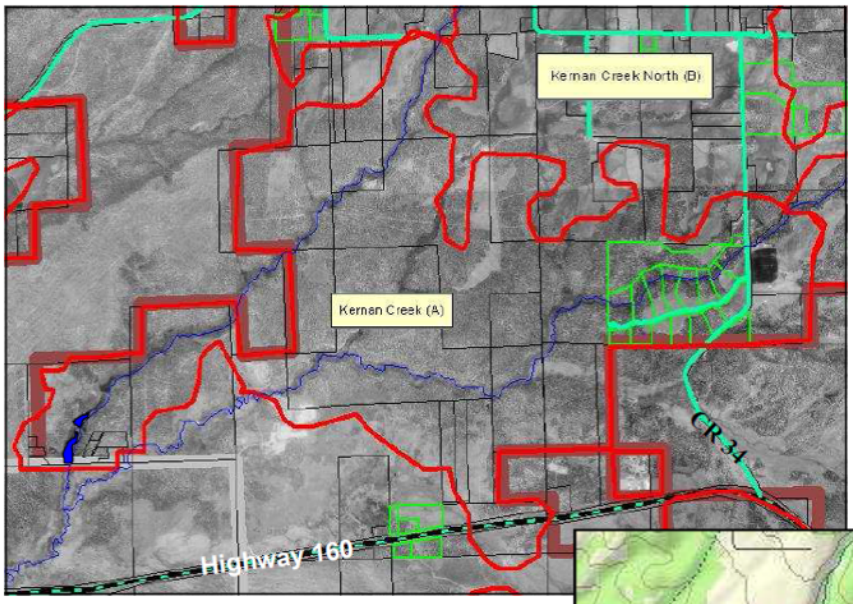
This plan should be reviewed each year to reflect the actions taken by the community and outline a further plan of action. As needed, the fire district and forestry professionals should be invited back to review the work that has been done, and its potential efficacy for addressing the risk it is proposed to reduce.

The plan is not a substitute for individual homeowner action. It is critical for residents to become informed of their specific risks and vulnerabilities to life and property. Neighborhood Ambassadors are available to provide technical support and encouragement for individual property actions, but will be focusing on their own properties and activities that can reduce the wildfire risks to the community as a whole. Even if all of the vulnerabilities identified in this plan are addressed, there is no guarantee that there won't be significant losses from a wildfire in the area. However, every step taken as individuals and as a community reduces the risks posed by wildfire in Kernan Creek Ranch.

Montezuma County Community Fire Plan

Kernan Creek

Fire Management Classification (A) **Latitude: N37 22.290'**
Elevation: 6,712' **Longitude: W108 26.868'**

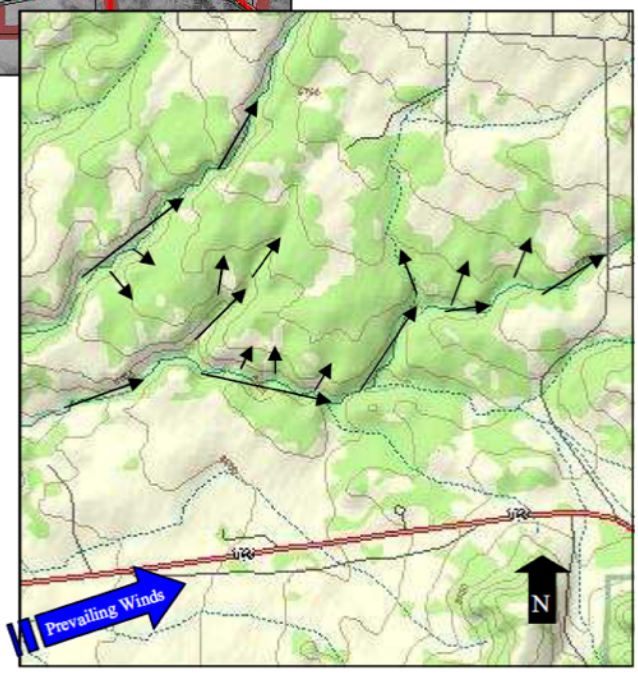


Left; The aerial map shows the Kernan Creek Polygon to be heavily forested. Vegetation is dominated by Pinion/ Juniper stands. There are also several open grassy areas.

Below: The topographic map shows the polygon consisting of rolling terrain punctuated by two main drainage canyons. These heavily forested canyons could act as "chimneys" (Indicated by black arrows)

The Kernan Creek polygon is bounded on the south by Highway 160, and public lands to the east and west. CR 34 lies on the east side of the polygon and provides the main access. The polygon contains one subdivision on the east side, The "Kernan Creek" subdivision. The 18 lot subdivision has been active in thinning efforts and defensible space. Additional fuels treatments have been completed on public land surrounding the subdivision. The subdivision is accessed via one road in which is adequate for emergency vehicles. The central corridor of the subdivision is an open field. There are some small ponds at the southwest end of the polygon which could provide alternative water.

Mitigation Measures may include a strong campaign to educate residents and property owners about defensible space, thinning, and the development of an evacuation plan.



Additional Mitigation Measures could include continued agency thinning on public lands surrounding the polygon.

Prepared 12/17/14 by Rebecca Samulski, Montezuma County Coordinator, FireWise of Southwest Colorado, 14870 Road 28, Dolores, CO 81323
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