Firewise USA™ Recognition Program
Community Wildfire Risk Assessment – Hole in the Wall Ranch (HITWR)

1) INTRODUCTION

The Firewise USA™ program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action now to prevent damage and losses. Participation in the program can be attained by any community and/or neighborhood committed to reducing risks from wildland fire. The following risk assessment will help identify threats and hazards and guide the priorities and actions for the HITWR community. The risk assessment will be the board/committee's primary tool in determining the risk reduction priorities within your site's boundaries. Assessments need to be **updated every five years.**

Data were gathered through various agencies and professionals including the Colorado State Forest Service (CSFS), Huerfano County, La Veta Fire Protection District, and members of the HITWR Community.

2) DEFINITION OF THE HOME IGNITION ZONE

The HITWR Community is located in a wildfire environment. The variables in a fire scenario are *when* the fire will occur, and *where*. This assessment addresses the wildfire-related characteristics of the HITWR Community. It examines the area's exposure to wildfire as it relates to ignition potential. The assessment does not focus on specific homes, but examines the community as a whole.

A house burns because of its interrelationship with everything in its Home Ignition Zone (HIZ) -- the house and its immediate surroundings. To avoid a home ignition, a homeowner must prepare their home to withstand ember attacks and minimize the likelihood of flames or surface fire touching the home or any attachments. This can be accomplished using hardscaping and landscaping techniques that create breaks in the vegetation in the HIZ, helping to influence and decrease fire behavior. Maintenance activities such as removing dead vegetation from the area immediately around the structure, reducing the amount of vegetation on the ground, and pruning trees are simple and easy steps that will affect the intensity of the wildfire within the HIZ.

Included in this assessment are observations made while visiting the HITWR Community. The assessment addresses the ease with which home ignitions can occur under severe wildfire conditions and how these ignitions might be avoided within the HIZ's of affected residents. The HITWR residents can reduce their risk of destruction during a wildfire by taking actions within their HIZ's, which includes the home and everything around it, up to 200 feet from the foundation.

The result of the assessment is that wildfire behavior will be dominated by the residential characteristics of this 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.

3) 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, the more frequently it occurs and the more continuous it is, 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 will be the fuel moisture content. Lower fuel moistures produce higher spread rates and fire intensities.
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity.
- Topography influences fire behavior principally by the steepness of the slope. However, the configuration of the terrain such as narrow draws, saddles and so forth can influence fire spread and intensity. In general, the steeper the slope, the higher the uphill fire spread and intensity.

The wildfire activity within HITWR and its surrounding areas has been infrequent and small in scale over the past several decades due to early detection and suppression efforts. One consequence of this lack of fire activity is the ever-increasing amounts of fuel present within the area's overstocked forests. In turn, the overstocked forests are more susceptible to disease, and indeed, spruce budworm, *Ips*, root fungi, and other bark beetles have caused a significant amount of dead fuel to be added to the forests, especially within the dense mixed conifer forests common in the area. These added fuels have increased the chances of large and severe fires similar to the 2018 Spring Creek Fire in Huerfano and Costilla counties.

4) SITE DESCRIPTION

The HITWR Community contains School Creek, a tributary of the Cucharas River, which itself is a tributary of the Arkansas River, and provides drinking water to the communities of multiple counties. The elevation within the community ranges from approximately

7500 feet in elevation in the lowest point, with multiple rises in topography throughout the property that reach up to 7800 feet.

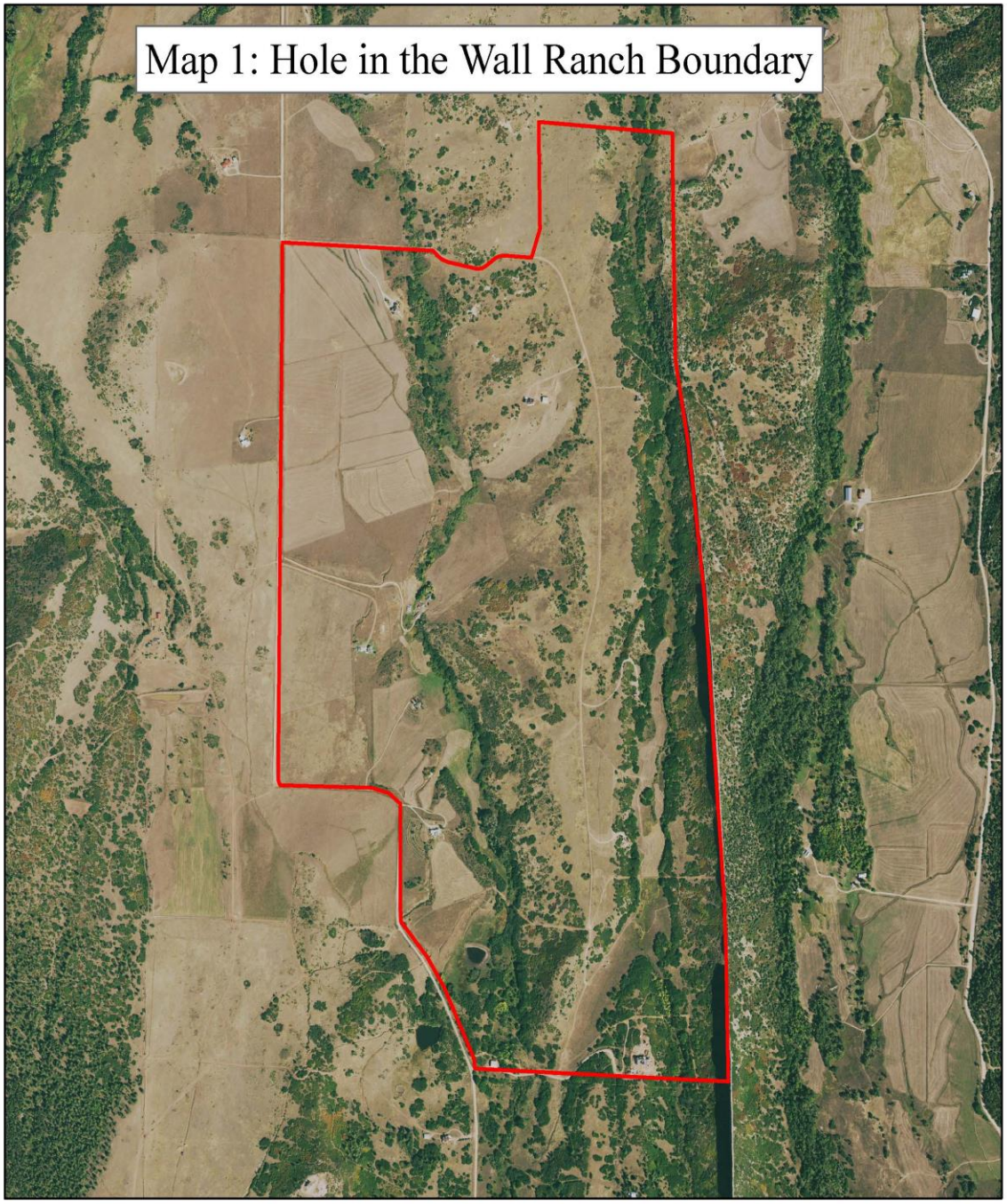
HITWR contains 20 parcels and approximately 13 structures, which are composed of permanent and seasonal residential structures and outbuildings. HITWR covers approximately 740 acres of land. Private land occupies the perimeter of the community.

Much of the HITWR Community is situated at an elevation that allows pinyon-juniper vegetation type to occur, dominating the surrounding landscape and occasionally within HITWR itself *(Picture 1, right)*. Deciduous trees, particularly aspen, have minimal occurrence. The dense arrangement of shrubs and low branches of conifers in the understory is minimal but does has the potential for severe fire behavior under certain conditions, especially high temperatures, low fuel moisture and strong wind *(Map 2, page 5)*. For further information on potential fire behavior on a landscape level, please see Appendix A.

Picture 1: Typical fuel composition and structure on HITWR.

Grasses are the most pervasive fuel in this community. When green, mowed, and receiving adequate moisture, grasses are resistant to burning. Under hot and dry conditions however, grasses cure (dry out and turn yellow or brown), and the amount of moisture contained within the plant drops drastically.

Because grass has a high amount of surface area when compared to its volume, dry grass can produce a tremendous amount of energy and fire can spread rapidly when burned. Dry grass is considered a fine fuel (diameter of less than ¼ inch), which - along with pine needles and small tree branches - is the size of fuel most conducive to ignition. Continued maintenance of these grassy areas, through either mowing or grazing, is a necessity in terms of maximizing the effectiveness of these areas as safety zones. Collaborative efforts with nearby communities - as well as various governmental agencies and private contractors - are always recommended when possible.


Map 1: Hole in the Wall Ranch Boundary
Prepared by:
Jared Fleming
Colorado State Forest Service
La Veta Field Office
April, 2021
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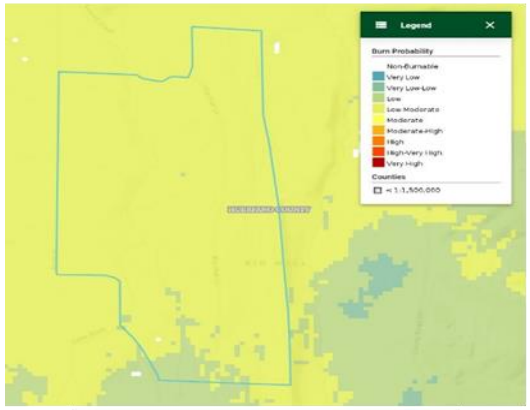
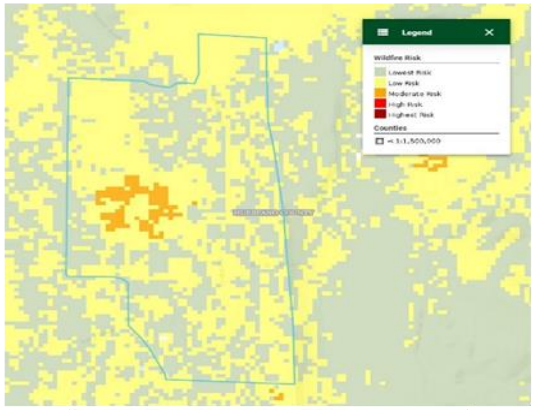
Map 2: Fire Behavior

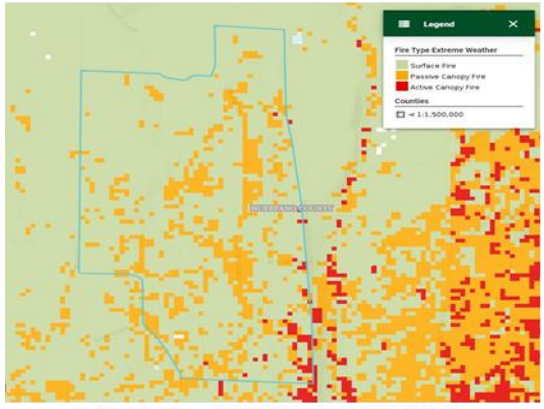


2a: Burn Probability – the likelihood that a given area has conditions adequate for fire to ignite.

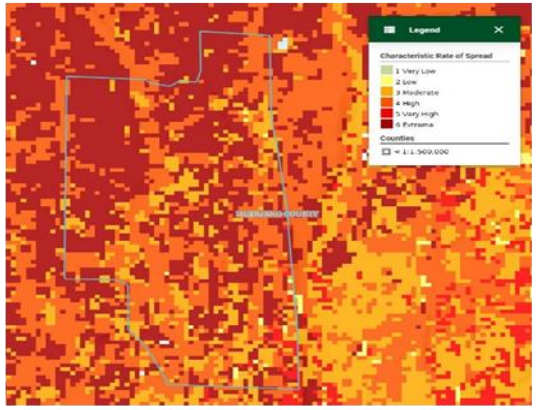


2b: Wildfire Risk -the overall risk occurring from a wildfire derived by combining Burn Probability and Values at Risk Rating .

2c: Fire Intensity Scale - specifically identifies areas where significant fuel hazards and associated dangerous fire behavior potential exist



2d: Fire Type - represents the potential fire type under the extreme percentile weather category.



2f: Rate of Spread - the typical or representative rate of spread of a potential fire based on a weighted average of weather categories

5) ASSESSMENT PROCESS

Previous data were gathered by members of the HITWR community, along with Paul Branson of Huerfano County All-Hazard Mitigation Coordinator. General data has also been compiled by Huerfano County.

For this assessment, data collection efforts were conducted by Jared Fleming, CSFS La Veta Field Office Forester, along with Mary White. Jared Fleming composed this assessment in April of 2021. This assessment was finalized after discussions with the HITWR Firewise personnel and Paul Branson.

6) IMPORTANT CONSIDERATIONS

The Firewise USA™ program acknowledges that there are many reasons and values that lead a person to live in the Wildland Urban Interface (WUI) and that there may be a desire for certain flammable components to exist on their property. It is important for residents 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.

Some common issues that reflect these choices are outdated building materials, isolated instances of limited maintenance such as untreated and undertreated siding, as well as proximity to complex forest structures and compositions. This collective assessment, along with the Community Wildfire Protection Plan (CWPP) already in place, adequately addresses many of the issues observed by CSFS. See Appendix C, particularly pages 73-74, for more information on the CWPP and recommendations.

7) OBSERVATIONS AND RECOMMENDATIONS –

- Defensible space improvements, along with hardening of the Home Ignition Zone, are some of the most direct actions a homeowner can do to protect their home from wildfire. Most homes in the community have updated building materials *(Picture 2, right)* and active maintenance. As in most communities, there are structures of absentee landowners where reduced maintenance may be more obvious.

Picture 2: Hardened structure with updated building materials and improved defensible space.

An important consideration for landowners to keep in mind is that improved defensible space does not necessarily translate to poor aesthetics or reduced privacy. When implemented properly and

with strategy, defensible space improvements can maintain aesthetics and privacy concerns.

Completing defensible space and **maintaining** this defensible space around **all** of the structures in the community is a top priority. This includes treatment of fine fuels as well as the thinning of dense tree stands to introduce more canopy spacing between individual – or clumps of - trees and surrounding homes *(Picture 3, right)*.

Picture 3: Dense canopy in need of separation.

Fine fuels are combustible materials less than ¼ inch in diameter and have a relatively high surface area to volume ratio. These characteristics allow the fuels to dry quickly and ignite readily, resulting in rapid rates of fire spread when fine fuels are abundant and continuous over an area. Common examples of fine fuels are grass, needles, leaves and small twigs.

- Cooperation among neighboring parcels, common spaces, rights of way, and public land should be encouraged and promoted when necessary to develop adequate fire mitigation along the property boundary. Homeowners should also be educated on proper implementation and potential risks from neglecting active management.

- In areas where only grass surrounds a structure, it is important that landowners mow regularly to reduce the height and amount of grass. As much as possible, grass should receive irrigation as green grass does not ignite and spread fire as readily as dry grass. Residents must exercise care when mowing rocky areas, as blades hitting rocks can create sparks which may ignite fires, especially in dry grass. To avoid starting fires, it is recommended that mowing occur during cooler times of the day and when humidity is high, or following recent moisture *(Picture 4, right)*.

Picture 4: Continued maintenance of grassy areas is necessary to reduce potential fire behavior.

- Gambel oak is prevalent throughout the community and surrounding areas. It is generally best mitigated through mastication, creating breaks among the canopy of residual groups. Generally, separation between groups of Gambel oak should be 2.5 times or greater than the height of the oak (e.g. a clump of Gambel oak 10 feet tall should be separated from other clumps by 25 feet or more). Gambel oak can never be eradicated, but with 3-5 year maintenance cycles it can be mitigated and managed.

- Structures within the HITWR Community vary widely in age and construction materials. The newest structures have been constructed using modern construction materials including composite decking, metal or composite roofing material, double-paned windows and screened air vents. In older structures where these modern construction techniques and materials are not present, homeowners should be made aware of the risks inherent in their structures, and plans be made to replace materials and / or to correct deficiencies.

Picture 5: Older building materials are present on some structures.

There are structures with rough wood siding *(Picture 5, above)*, which over time becomes dry and shrinks, creating small gaps where fine material can accumulate and embers could potentially find an ignition point. **Maintenance – in terms of hardening the home (treating wood on structures, proper sealing, screening, etc) as well as clearing fine fuel debris from around structures – should be a primary focus, regardless of structure age.**

- HITWR residents have the obstacle of one direct evacuation route, County Road 361. The county road network allows further distance to be gained in multiple directions from an approaching fire once appropriate intersections are reached; residents should familiarize themselves with multiple routes in-and-out of the community. The community could stand to benefit from high-visibility evacuation route signage to aid both the community, as well as wildfire resources, in the event of a fire. It is also strongly recommended that vegetation continue to be removed alongside of all roads to the maximum extent possible - especially in forested areas - and turn around areas be widened to accommodate the vehicles of emergency responders.

- Continuing maintenance of the defensible space is critical to keeping each landowner's property Firewise. This program is progressive with the creation,

expansion, and maintenance of defensible space within the community occurring **annually**. While much emphasis is placed upon the action each landowner can take upon their property, it is also important to recognize the importance of communication and cooperation with individuals and organizations outside of the HITWR Community. Such entities include:

A. The Colorado Department of Transportation (CDOT) has responsibility for maintenance along Highway 12 and Huerfano County has responsibility for County Roads. Because these roadways are critical evacuation routes for HITWR residents, it is recommended that residents remain alert to wildfire hazards along the roadways and notify CDOT or Huerfano County so that the appropriate mitigation work can be performed.

B. San Isabel Electric Association is the electric utility in the area. Because of the ignition potential posed by trees contacting overhead electric wires, HITWR residents should be continually vigilant for hazardous trees, and contact San Isabel Electric Association immediately to eliminate hazards.

C. There is national forest in close proximity to the community. With expansion of participation in the HITWR Firewise USA program expected, the San Carlos Ranger District of the San Isabel National Forest will likely become an important partner as well.

8) SUCCESSFUL FIREWISE MODIFICATIONS –

When adequately prepared, a house can likely withstand a wildfire without the intervention of the fire service. Further, a house and its surrounding community can be both ignition resistant and compatible with the area's ecosystem. The Firewise USA™ program is designed to enable communities to achieve a high level of protection against WUI fire loss even as a sustainable ecosystem balance is maintained.

A homeowner/community must focus attention on the Home Ignition Zone and eliminate the fire's potential relationship with the house. This can be accomplished by disconnecting the house from high and/or low-intensity fire that could occur around it. The following photographs/observations were taken in the HITWR Community and are examples of good wildfire risk reduction practices.

- The majority of structures within the community contain newer building materials or building materials that have been maintained to improve resistance against potential wildfires. Structures being currently built are erected with considerations for potential wildfire impacts and resistance *(Picture 6, right)*.

Picture 6: New construction with Firewise building materials.

- Fire safety features are largely absent, but are planned and should focus on improved communications and access to water, generators for fire resources, and identification of natural areas to aid in strategic operations of wildfire resources.

- The community is working closely with La Veta Fire Protection District (LVFPD) and Huerfano County Wildfire Preparedness (HCWP) program; future actions should result in outreach that focuses heavily on HIZ Assessments and continued maintenance of mitigation improvements.

- Some structures currently feature rocks or gravel surrounding their perimeters. Although typically installed for benefits in terms of water control/erosion mitigation, these features also provide a buffer to the structures from approaching surface fires, especially when found adjacent to grasses or other fine fuels. When used in combination with elevated siding along a concrete foundation, this modification to a home reduces the potential fire effects to structures.

- Many homeowners are well underway in creating defensible space and other mitigation work around their residences. This *leadership through example* helps to show that Firewise modifications can be aesthetically pleasing, effective, and also provide residents planning similar projects with valuable how-to information.

- The primary strength of HITWR is the eagerness to expand. Inclusion of surrounding communities or landowners will further protect HITWR by focusing on the primary threat: encroaching wildfire from nearby heavily forested lands. *Map 3, page 12* demonstrates that although HITWR itself may be potentially exposed to high fire intensity, the fuels present on surrounding land contribute to a concerning potential flame length. Expansion by HITWR will allow for potential mitigation of these areas.

9) NEXT STEPS –

After reviewing the contents of this assessment and its recommendations, the board/committee for the HITWR Community, in cooperation with LVFPD, will determine whether or not it wishes to continue seeking Firewise USA™ recognition.

If the site assessment and recommendations are accepted and recognition will be sought, the HITWR Community board will create agreed-upon, area-specific solutions to the wildfire risk reduction recommendations and solidify their action plan in cooperation with LVFPD.

Assuming the assessment area seeks to achieve national Firewise USA™ recognition status, it will integrate the following standards into its plan of action:

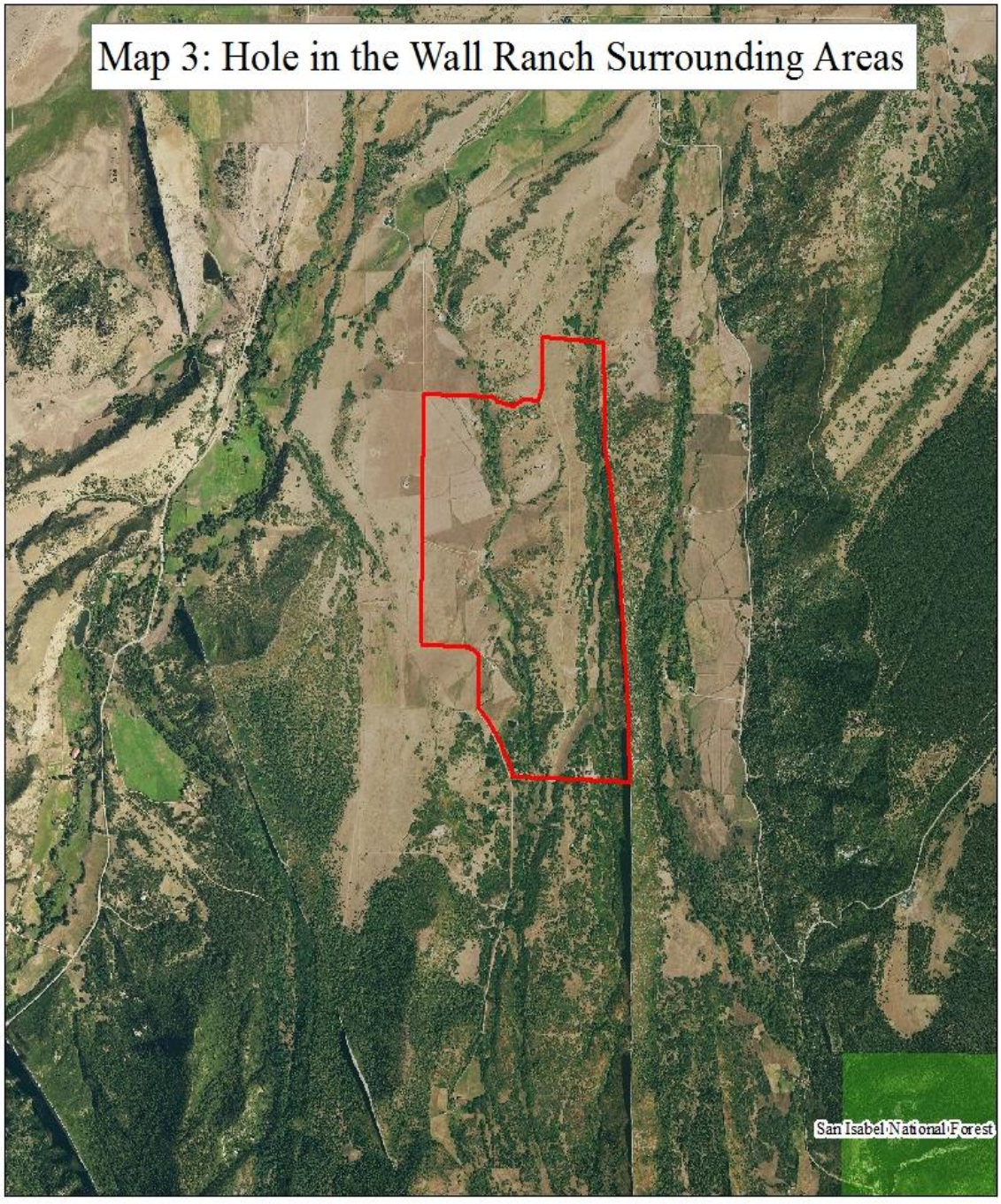
- Form a board/committee that is comprised of residents and other applicable wildfire stakeholders. This group will collaborate on developing the site's risk reduction priorities, develop a multi-year action plan based on the risk assessment and oversee the completion of the annual renewal requirements needed to retain an "in good standing" status.
    - Action plans are a prioritized list of risk reduction projects/investments for the participating site, along with suggested homeowner actions and education activities that participants will strive to complete annually, or over a period of multiple years. Action plans are developed by the board/committee and need updating at least every three years.
- At a minimum, each site is required to invest the equivalent of **$27.20 per dwelling unit*** in wildfire risk reduction actions annually. Qualifying expenditures include contractor costs, rental equipment, volunteer activities, grants, etc. Residents completing select home modifications, along with any qualifying work performed at their home and in the adjacent home ignition zones can contribute related hours and/or costs towards meeting the sites collective investment amount.
- Each participating site is required to have a **minimum of one wildfire risk reduction educational outreach event,** or related activity annually.
- Every year participating sites must **submit an annual renewal** to maintain their "In Good Standing" status. The annual renewal application can be accessed through the Firewise USA™ online management portal (http://portal.firewise.org/).

The HITWR Community residents are reminded to be conscious of keeping high-intensity fire more than 100 feet from their homes with improvements to defensible space, while also monitoring for other potential hazards in the 200 foot HIZ. It is important for them to avoid fire contact with their structures, including firebrands or embers. Science tells us that the home itself and 0-5 feet from the furthest attached exterior point of the home are most vulnerable to ember attacks. Residents should focus on making this a non-combustible area by removing any flammable vegetation or materials from wall exteriors; cleaning debris from roofs and gutters; and addressing

home construction issues. 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. They 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 rattan doormats, flammable patio furniture, firewood stacked next to the house, or other flammables.



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La Veta Field Office
April, 2021

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