Community Wildfire Protection Implementation Plan

IDAHO SPRINGS AREA

INCLUDING:

City of Idaho Springs,

And adjacent areas of: Black Eagle, Lower & Middle 103, Lower Soda Creek, Montane Park, Pine Slope, and Virginia Canyon

Draft Final: 8-11-14

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CWPIP Certification

The Idaho Springs Area Community Wildfire Protection Implementation Plan (CWPIP) was developed in accordance with the guidelines set forth by the Healthy Forests Restoration Act (2003) and the Colorado State Forest Service's Minimum Standards for Community Wildfire Protection Plans (CWPP) (Revised 2010).

This plan is under the umbrella of the Clear Creek County CWPP. As such it provides local analysis and implementation recommendations for the Idaho Springs area. The plan:

- Was collaboratively developed – residents, interested parties and state and federal land management agencies managing land in the Idaho Springs area have been consulted;
- Identifies and prioritizes areas for hazardous fuels reduction treatments and recommends the types and methods of treatment to reduce the wildfire threat to values at risk in the area;
- Presents measures to reduce the ignitability of structures throughout the plan area.

The following entities mutually agree with the contents of this Community Wildfire Protection Implementation Plan:

_____

XXXXXX; (For the Team) Date

_____

City of Idaho Springs Date

_____

Clear Creek Fire Authority Date

_____

Clear Creek County Office of Emergency Management Date

_____

Colorado State Forest Service, Golden District (Technical Review) Date

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Section 1: COMMUNITY WILDFIRE PROTECTION PLANNING

The City of Idaho Springs Area Community Wildfire Protection Implementation Plan (CWPIP) provides an assessment of wildfire risks and hazards and outlines specific mitigation treatment recommendations designed to make the community a safer place to live, work and play. It will help enable the community to live with fire as a natural part of the landscape ecosystem. It is a strategic plan which informs and encourages homeowners to create defensible space and achieve fire resistant structural integrity, and makes recommendations for agencies such as Clear Creek County and the US Forest Service concerning mitigation actions to help reduce wildfire behavior and to protect Idaho Springs's water supply and the surrounding areas. The recommendations identify road corridor mitigation treatments and fuels treatment projects to achieve risk reduction, provide for safe evacuation and emergency traffic, and improve the area's capability to withstand wildfire.

As is the case in any CWPIP much of the community land involved is private land. **It is extremely important for land owners to take action to create Defensible Space on their property.** A section of the plan demonstrates what can be done while still leaving property attractive. **A land owner does not have to clear cut their property to achieve defensible space against wildfire. But without collaborative, neighborhood action the damage to homes or other buildings can be significant.**
Once the CWPIP is finalized and adopted, it is the responsibility of the community to move forward and implement the action items. This may require further planning at the project level, acquisition of funds and assistance through grants or other means, or simply motivating individual homeowners. It should be emphasized that the CWPIP is a living document to be revisited on a regular basis and revised as needed… ***THIS IS A PROCESS, NOT A SHELF DOCUMENT!!***

The Team – Local residents and agencies involved in developing this plan:

- Residents and officials of the Idaho Springs Area
    - Jack Morgan; Past Mayor of Idaho Springs and as an official community representative
    - Cindy Condon; Idaho Springs City administrator
    - Rick Albers, Zuri Betz, John Bordoni, Kate Collier, Gene Day, Denise Deese, Dennis Johnson, Ben Morgan, Kimberly Steele, Doug Voeks
- John Chapman; Team Facilitator

Advice and Assistance

- US Forest Service: Natalie Angell, Kevin Zimlinghaus
- Clear Creek Office of Emergency Management: Kathleen Krebs, Jane Thomas
- Clear Creek Fire Authority: Kelly Babeon
- Colorado State Forest Service: Allen Gallamore

This CWPIP is not a legal document. There is no legal requirement to implement the recommendations herein. This is also the case for CWPPs. As stated in the Clear Creek County CWPP treatments on private land may require compliance with county land use codes, building codes, and local covenants. Treatments on public lands will be carried out by appropriate agencies and may be subject to federal, state, and county policies and procedures

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such as adherence to the Healthy Forests Restoration Act (HFRA) and National Environmental Policy Act (NEPA).

The Challenge

Decades of aggressive fire suppression in fire-dependent ecosystems, coupled with persistent drought, disease and insect infestation, have all converged to create a threat that is increasingly commanding both national attention and substantial resources. Following a particularly bad fire season in 2002, Congress put forth The *National Fire Plan* and the *Collaborative Approach for Reducing Wildland Fire Risks to Communities* and the *Environment 10-Year Comprehensive Strategy*. The intent of these programs was to enable effective response to severe wildland fires and to better address their impact on communities.

In the Healthy Forest Restoration Act (HFRA) in 2003, Congress directed communities in the Wildland/Urban Interface (WUI) to prepare a *Community Wildfire Protection Plan* (CWPP). Once completed, a CWPP provides statutory incentives for the US Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects. It also provides the impetus for local communities to engage in wildfire management planning and defensible space actions.

The HFRA provides communities with assessment procedures and guidelines that facilitate a collaborative approach to identify wildfire risks and prioritize mitigation actions. A CWPP addresses such factors as:

- Stakeholder collaboration;
- Public agency and local interested party engagement;
- Mapping;
- Risk assessment – fuels, historical ignitions, infrastructure, structural ignitability, local resources, and firefighting capability;
- Hazard reduction recommendations; and
- Strategic action plans.

The Community Wildfire Protection Implementation Plan (CWPIP) for the Idaho Springs Area is under the umbrella guidance of the Clear Creek County (CCC) CWPP. This CWPIP references CCC data as appropriate. The CCC plan contains detailed information on the county, its wildfire history, characteristics and hazards, and evaluations of areas with recommended actions. Readers should become familiar with the county plan as well as this CWPIP. The Idaho Springs area CWPIP recommendations will assist the team and community to seek grant and resource assistance, deal directly with residents in education and information, and move forward with project work. Inclusion of the Idaho Springs Area in the CCC CWPP further enables residents to qualify for the CO state tax advantage for defensible space work on their individual properties.

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1.1 CWPIP EXECUTIVE SUMMARY: RISKS AND RECOMMENDATIONS
In addition to following pages describing the area and its wildfire analysis;

The CWPIP team developed: 1) a listing of Values at Risk; 2) a set of initial mitigation action priorities; and 3) appendices with sites and publications for mitigation guidance for residents.

1. Values at Risk in the Idaho Springs area: (P.15)

- **Life & Property:** Protection of life is first in consideration by residents and by emergency services. Protection of property, personal, business, and historical, is the second most important concern to maintain the integrity and stability of the community.
    - Information materials for land owners:
        - Fire-Resistant Landscaping; http://csfs.colostate.edu/pdfs/06303.pdf
        - Firewise Construction: Design and Materials by Peter Slack; http://csfs.colostate.edu/pdfs/construction_booklet.pdf
- **Critical Power Infrastructure:** Work with power transmission entities to improve and maintain existing utility right-of-way fuel breaks in accordance with standards of the industry.
- **Water Supply Infrastructure:** Wildfire damage to the watershed could accelerate erosion, causing problems for the water supply. It is also an area of value for habitat for a variety of wildlife species.
- **Roadways and Transportation**: I-70 is an important transportation corridor for Colorado. Idaho Springs is the jumping off point for Hwy 103, a major corridor for recreational traffic bound for Echo Lake and Mount Evans
- **Wildlife:** The area has important wildlife species needing adequate habitat and protection.
- **Recreation**: Surrounded by US Forest Service, county, and state lands, Idaho Springs is a unique tourism and historic city.

2. Priority Mitigation Projects: (P. 37)

These are set as the most important projects for the team and community to work on. As they are completed or conditions change this list will be changed.

- **Work with officials and neighborhoods to facilitate creation of Defensible Space**
- **Mitigation adjacent to Idaho Springs; south of I-70**
- **Mitigation in Lower and Middle 103 and Black Eagle units**
- **Idaho Springs' Watershed Area: Mitigation of Idaho Springs' Reservoir; Mitigation at Idaho Springs' water intake**
- **USFS Actions**
- **City of Idaho Springs**
- **Mitigation in Virginia Canyon**
- **Mitigation actions by for Power and Electrical Transmission & Distribution lines**

3. Publications for community protection and Defensible Space: Appendix A (P. 67) contains a list of websites and publications for home owners to use in gaining

information on defensible space, fire resistant landscaping and fire resistant building materials.

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Section 2: THE IDAHO SPRINGS AREA & COMMUNITY RISK ANALYSIS

2.1 The Plan Area: Topography and Vegetation

The CWPIP area (See following map) encompasses the city of Idaho Springs, and adjacent areas of the Clear Creek County CWPP recommended for treatment in which wildfire could potentially affect Idaho Springs. The area is along and adjacent to I-70, west of Denver. It occupies an ecosystem niche in both the Foothills Life Zone and the montane ecosystem. The plan area includes a buffer zone surrounding the immediate city which was considered in plan recommendations. The neighborhood areas of private properties are intermixed with lands under management of the US National Forest Service (Arapaho and Roosevelt National Forest) which surrounds the area on all sides, Clear Creek County, and the State Land Board. The life zones involved are described in: *"Colorado Life Zones: Seasons, Plants, & Animals."*

The ***Foothills Life Zone*** is the first major step leading up into Colorado's Rocky Mountains. East of the mountains, the foothills life zone rises from the Great Plains. The foothills life zone's elevation is anywhere from 6,000 or 7000 ft. above sea level to around 8,000 ft. above sea level. The open ponderosa pine woodlands grow on the eastern foothills of the Rocky Mountains. On both sides of the Rocky Mountains, the montane shrublands grow at the higher elevations of the foothills.

"The ***Montane Ecosystem*** occurs at elevations between approximately 5,600 and 9,500 feet. Dry, south-facing slopes of the Montane often have open stands of large ponderosa pines. Spacing of ponderosa pines is somewhat related to available soil moisture. Grasses and shrubs may grow between the widely spaced trees on dry slopes. North aspects of the Montane retain more soil moisture and support denser stands of conifer that are less drought resistant. The trees may be a mixture of Douglas fir, lodge pole pine, ponderosa pine and an occasional Engelmann spruce. Shade-tolerant plants may grow on the forest floor. Montane soils with high moisture content may support groves of quaking aspen. Along streams or the shores of lakes may be found: willows, mountain alder, and water birch. In a few places, blue spruce may grow near streams and sometimes hybridize with Engelmann spruce. Trees common to Clear Creek County's Montane Ecosystem include ponderosa pine, Douglas fir, lodge pole pine, and quaking aspen. Common shrubs include antelope bitterbrush, kinnikinnick, common juniper, holly grape, wax currant, big sage, and rocky mountain juniper."

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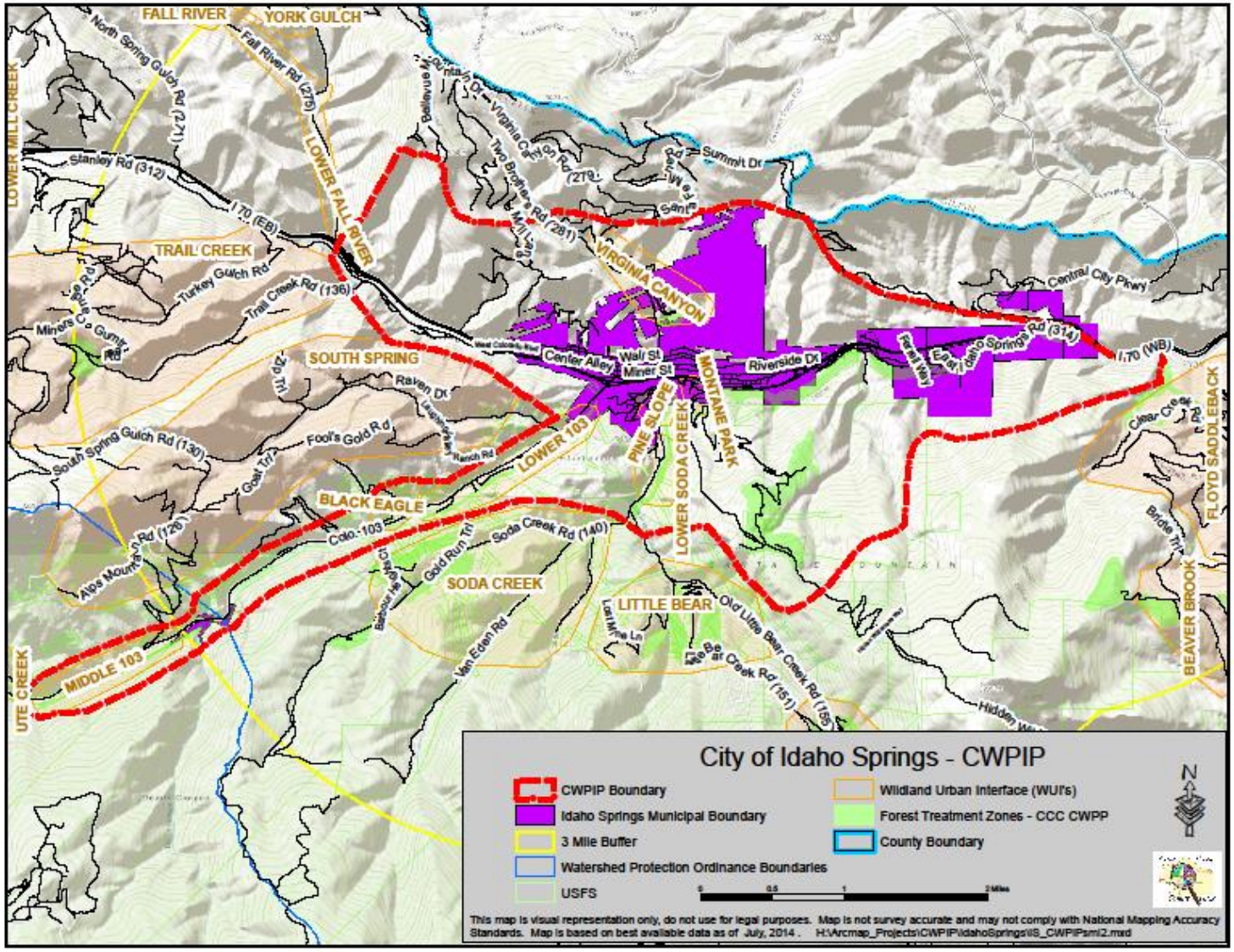

Figure 1: Idaho Springs CWPIP area boundary

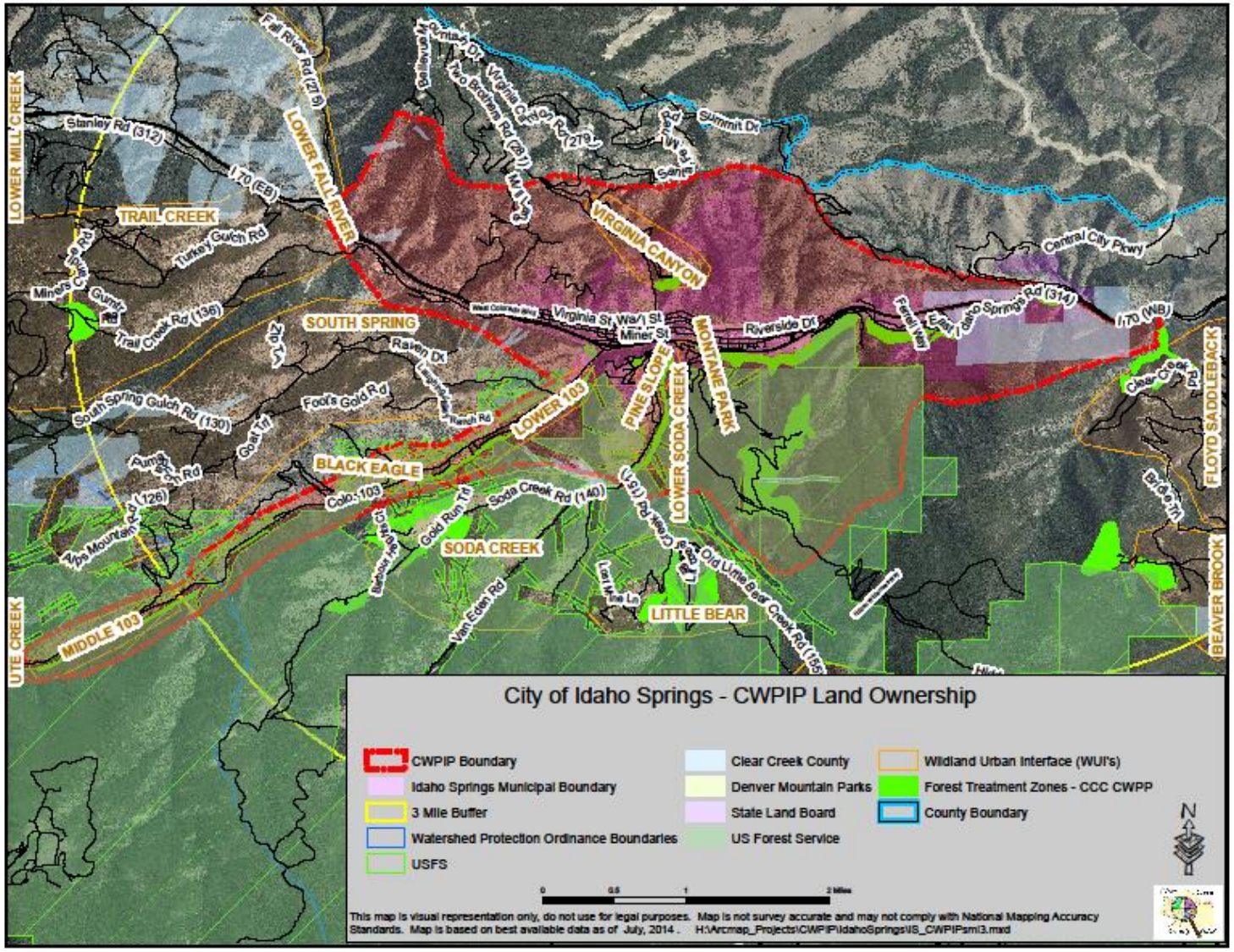

Fig. 2: Land ownership in Idaho Springs CWPIP area

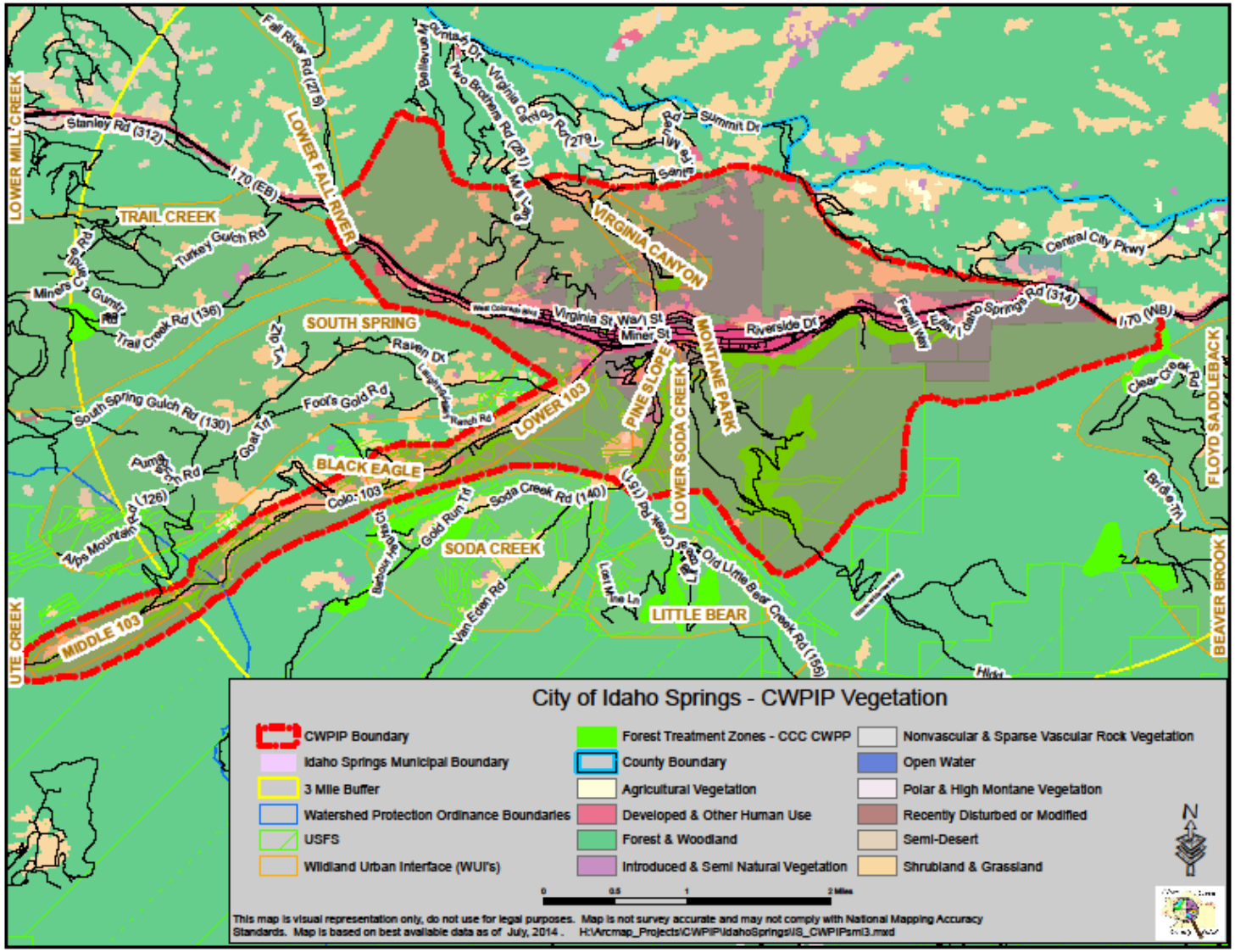

Figure 3: Vegetation in Idaho Springs CWPIP area

2.2 Neighborhoods and Hazard Assessments

Community Risk Analysis: Following are the Idaho Springs Area CWPIP neighborhoods, their physical descriptions and their fire hazard assessments. These descriptions include the **Community Assessment Surveys in the Clear Creek County CWPP**. That plan should be referred to for overall area hazard analysis and fire history.

The team evaluated the CCC CWPP areas and also the areas described in the **Idaho Springs Three Mile Plan** (See Appendix E)**.** Both the CCC CWPP and Three mile Plan contain a number of small, unincorporated residential communities located in areas which were determined not to have an immediate effect on potential wildfire damage to the City of Idaho Springs. But some of the communities are close to the municipal boundary of the city and were included in recommended actions for wildfire mitigation.

A meeting was held with CCC Emergency Management and Idaho Springs City Administration to make initial boundary determinations for the Idaho Springs area for protection and the selected boundary was discussed with CCC Fire Authority Chief who concurred with the recommendation. Following this the team met and made some additional recommendations concerning the plan boundary.

The boundary shown on page 11 contains the CCC CWPP units of: Idaho Springs, Black Eagle, Lower 103, Middle 103, Lower Soda Creek, Montane Park, Pine Slope, and Virginia Canyon. All of these areas are recommended for mitigation treatment.
Values at Risk: The team selected the following values at risk for the Idaho Springs Area.

- **Life & Property:** Protection of life is first in consideration by residents and by emergency services. Protection of property, both personal and business, is the second most important concern to maintain the integrity and stability of the community.
- **Critical Power Infrastructure:** Work with power transmission entities to improve and maintain existing utility right-of-way fuel breaks in accordance with standards of the industry. Make sure right-of-way around power lines is free of trees or limbs that may cause damage or spread wildfire. One desirable method of treatment is to cut a 100-foot swath in a mosaic pattern around the power poles and under the lines. This will minimize the visual effect of clear cutting a straight swath across the land. In accessible areas a hydro-axe or similar implement can be used to complete this work.
- **Water Supply Infrastructure:** The Idaho Springs watershed covers an area approximately 14,368 acres south and SW of the city plus some additional storage. Wildfire damage to the watershed could accelerate erosion, causing problems for the water supply. It is also an area of value for habitat for a variety of wildlife species. Water supply contamination (increased microbiological and chemical contaminants) could occur as the introduction of point and non-point source pollutants with erosion and sedimentation from severe wildfire events.
- **Roadways and Transportation**: I-70 is an important transportation corridor for Colorado, hosting heavy traffic moving from Denver to the mountain recreation areas, the west slope, and beyond as a major cross-country corridor. Idaho Springs is also the jumping off point for Hwy 103, leading through adjacent residential areas and serving as the major corridor for recreational traffic bound for Echo Lake and Mount Evans.

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- **Wildlife**: The area has important wildlife species needing adequate habitat and protection.
- **Recreation:** Surrounded by US Forest Service, county, and state lands, Idaho Springs is a unique tourism/historic city. Within 30 minutes of the Denver metropolitan region, Idaho Springs lies nestled in the middle of timbered hills and peaks. Belleview Mountain rises to the north and Saddleback, Santa Fe and Chief Mountains lie to the SE, S, and SW. There are good opportunities for hiking, fishing, river rafting, camping, and learning the mining history of the area.
    - The team also identified public target shooting on the Arapaho/Roosevelt National Forest as a concern for potential wildfire hazard from shooting, fires, smoking, etc. Clear Creek County is a partner in the Northern Front Range Recreational Sport Shooting Management Partnership, which includes the USFS and CO Parks and Wildlife (http://www.sportshootingpartners.org/). At this time the only area with restrictions is just outside of the plan boundary in the Barbour Forks Trailhead Area: *(*USFS website for the Clear Creek Ranger District states, "*Barbour Forks Trailhead Area: No discharging a firearm, air rifle, or gas gun except persons legally hunting turkeys, waterfowl, small game or big game animals and persons discharging paintball guns, ¼ miles in all directions from the trailhead.")* The USFS website also states there are no current planning efforts underway (June, 2014).

      The Board of County Commissioners and a partnership member from CCC are working to identify areas where shooting can be safely conducted. The US Forest Service may issue a regulatory plan for closing areas "unless opened" and following public comment and work with the county and the partnership would designate certain areas as open for shooting.

      The team will keep abreast of developments and work with the county and US Forest Service to identify and mitigate potential wildfire hazards associated with recreational shooting areas within the CWPIP boundary.

The Clear Creek County Community Wildfire Protection Plan developed **neighborhood hazard ratings and recommendations** for units within the Idaho Springs CWPIP area. The following pages contain the pages from that plan which deal with these areas. The complete plan can be found at: http://csfs.colostate.edu/pages/documents/CCCCWPP_rpt.pdf.

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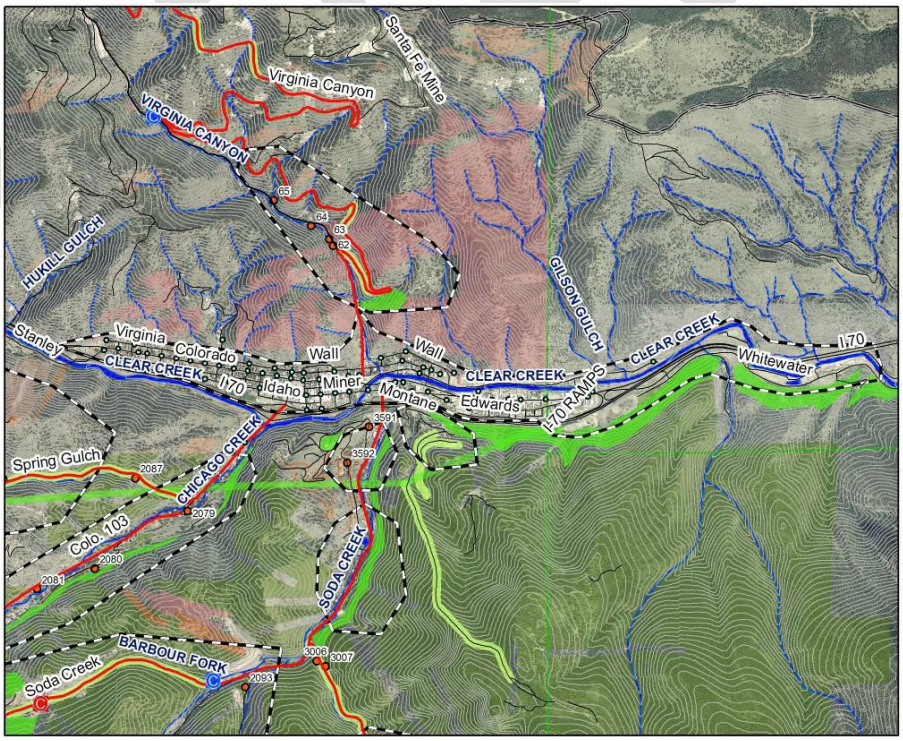
Idaho Springs

Community Hazard Assessment **MODERATE**

Community Design
Municipality. Through access across town on paved 2 lane roads. Flat valley floor bounded by steep slopes east, south, and west of town. I-70 and Clear Creek provide buffer to the south. Rocky slopes and light fuels adjacent to structures on the north margin. Municipal hydrant grid observed.

Fuels
Dense structures and urban/residential ornamental tress and shrubs in town. Light fuels adjacent to structures to the north. Dense lodgepole pine and mixed conifer adjacent to I-70 south of the highway. . FBFM 1, 2, 4, 5, 8.

Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. Strategic forest treatment zones identified along forested valley margins south of town and south of I-70.



Clear Creek County

Idaho Springs WUI

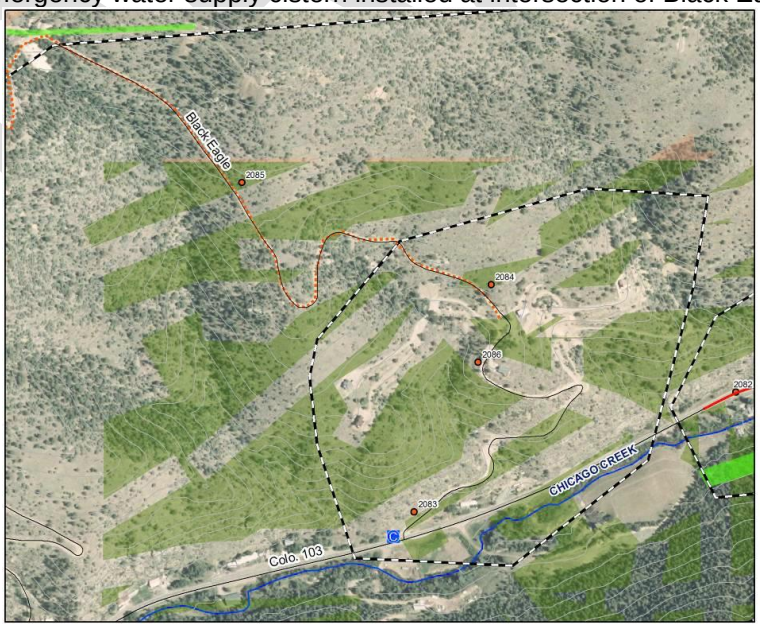
Black Eagle

Community Hazard Assessment **HIGH**

Community Design
17 Addresses. Primary access single-lane gravel with limited or no turnarounds. Road width supports one-way traffic with no shoulder to pull over. Black Eagle Rd continues through to Spring Gulch but is unimproved 4WD. Home sites are dispersed and built into a dry south-facing slope. Predominant construction and roofing materials are flammable. Lack of forested fuels assist predominance of defensible space but dry grass would carry an upslope surface fire from Co 103 through the subdivision in a matter of minutes. Defensible space here requires seasonal mowing of grass fuel. No emergency water supply or convenient water source was observed.

Fuels
Short grass, scrub, sparse juniper and isolated Ponderosa dominate the south facing slope. Some open Ponderosa stands in protected drainages. FBFM 1, 2, 5, 6, 9.

Mitigation Recommendations
Restrict access to non 4WD emergency vehicles unless primary access is widened with strategic adequate turnarounds. Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. Promote seasonal mowing around structures. Recommend emergency water supply cistern installed at intersection of Black Eagle Road and Co 103.



Clear Creek County

Black Eagle WUI

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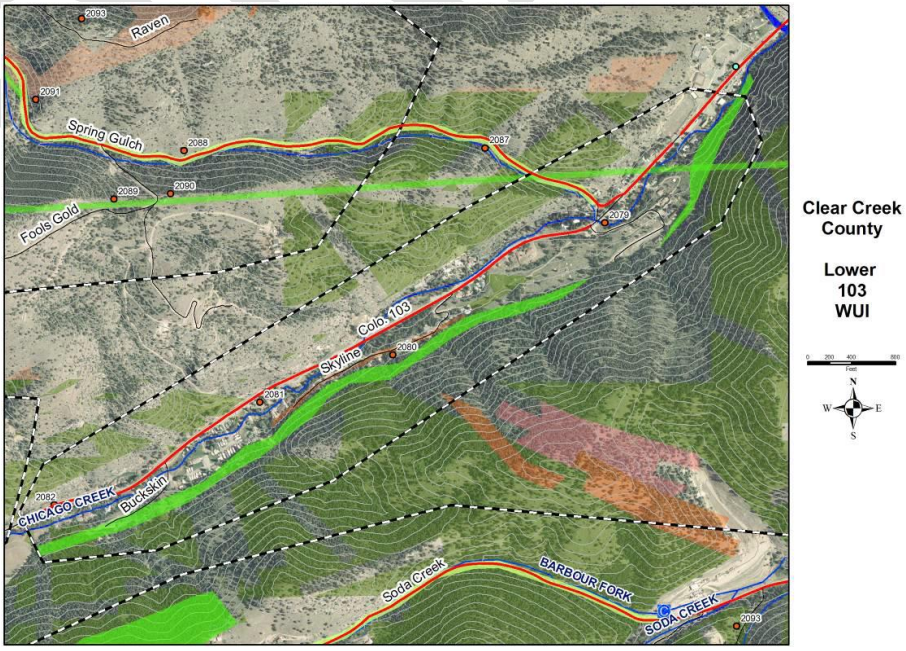
Lower 103

Community Hazard Assessment **HIGH**

Community Design
78 Addresses. Co 103 is the 2 lane paved primary access road. Secondary roads 1½ to 2 lane smooth gravel lacking turnarounds. Roads are rougher and steeper at higher elevations. Approximately 75% of homes have between 30-70 feet of defensible space and the majority of home sites are situated adjacent to the community's main access road. Construction materials and roofing predominantly flammable. No emergency water supply observed.

Fuels
Community is situated between a fairly open southwest-facing slope and a northeast-facing slope with a dense mixed conifer overstory. Vegetation around homes is generally lighter and more cleared out than on the north facing slopes. FBFM 1, 2, 4, 8.

Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. No significant forest encroachment along primary county evacuation route Co 103. Potential forest treatment zone along lower forested slopes southeast of Chicago Creek backing to structures. Emergency water supply from hydrants in nearby Idaho Springs.



Middle 103

Community Hazard Assessment **HIGH**

Community Design
29 Addresses. Primary access road is low grade, 2 lane paved with no turnarounds. 50% of home sites have <30 feet defensible space. Construction and roofing materials predominantly flammable. Lake on south side of Co 103 can be used as an emergency water supply in the immediate area.
Fuels
Community is situated in a valley bottom with rocky open slopes and disbursed conifers on the southeast-facing slope and dense mixed lodgepole and spruce/fir on the northwest-facing slope. FBFM 1, 2, 4, 5, 8.
Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. No significant forest encroachment along primary county evacuation route Co 103. Potential forest treatment zone along lower forested slopes southeast of Chicago Creek backing to structures. Recommend emergency water supply/cistern development at intersection of Ute Creek Road and Co 103. Survey identified pond for potential draft and helicopter dip resource.

Clear Creek County

Middle 103 WUI

Lower Soda Creek

Community Hazard Assessment **MODERATE**

Community Design
20 Addresses. Main access is 2 lane paved. It runs through the middle of the community with many driveways leading off of it and a modest turnaround area at the end of Two Moon Rd. Construction materials primarily flammable. Roofing materials are a mixture of flammable and nonflammable. No emergency water supply sources observed.

Fuels
Community is situated in a valley bottom with open sparse vegetation to the west and medium density mixed conifer and shrub vegetation near homes and to the east. FBFM 1, 2, 4, 5, 8.

Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. No significant forest encroachment along primary county evacuation route Soda Creek Road. Potential forest treatment zone along lower forested slopes east of Soda Creek backing to structures. Existing fuelbreak along ridge east of WUI should be improved and maintained. Emergency water supply from hydrants in nearby Idaho Springs.

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Montane Park

Community Hazard Assessment **HIGH**

Community Design
23 Addresses. Primary access is a low grade paved road, 2 lane width with dead ends at driveways. Turnaround areas are modest and located at switchback turns. Community is flanked by high voltage power lines and the highway. Construction and roofing materials predominantly flammable. No emergency water supply source observed.

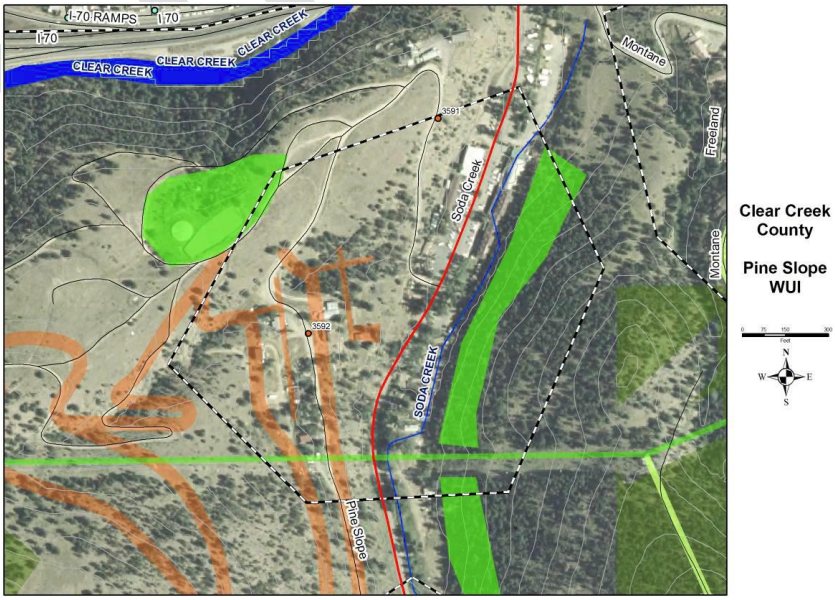
Fuels
Overstory vegetation is moderately dense mixed conifer, shrubs, and short grasses with little build up in the understory. Potentially hazardous topography in the area includes slopes and chimneys. FBFM 1, 2, 5, 8.

Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. Develop and maintain shaded fuelbreaks along all forested secondary community access roads. Improve and maintain utility right-of-way fuelbreak. Emergency water resources in nearby Idaho Springs.

Pine Slope

Community Hazard Assessment **HIGH**

Community Design
18 Addresses. Primary access road is a 1 to 1½ lane dirt road with one primary and one secondary exit. Most homes with 30-70 feet defensible space. Construction and roofing materials primarily combustible. Lake west of community could be used as a potential water source for community.
Fuels
Low grade to flat topography on either side of Soda Creek. Fuels generally light in open areas west of Soda Creek with medium density mixed conifer overstory east of the creek. FBFM 1, 2, 5, 8.
Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. No significant forest encroachment along primary county evacuation route Co 103 or secondary neighborhood access. Potential forest treatment zone along lower forested slopes east of Soda Creek backing to structures. Recommend seasonal mowing and other identified fuels reductions around municipal water facility just west of WUI. Improve and maintain existing utility right-of-way fuelbreaks. Road improvement along north access. Emergency access should use south access. Emergency water available in nearby Idaho Springs.



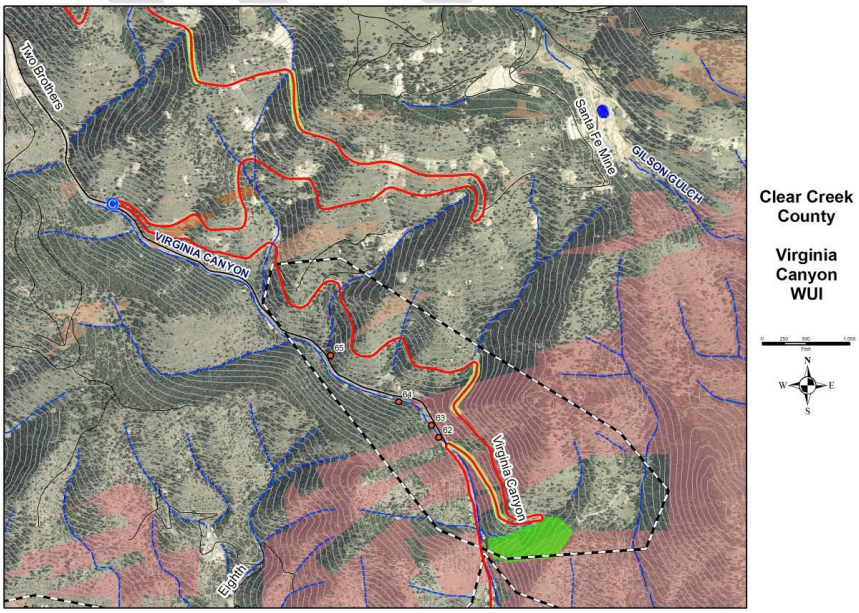
Virginia Canyon

Community Hazard Assessment **HIGH**

Community Design
10 Addresses. Primary access is a rough gravel road varying between single to 1½ lane with a turnaround at the intersection of Two Brothers and Virginia Canyon Roads. Very low housing density with most homes exhibiting between 30-70 feet defensible space but located on eroding slopes. Construction materials 50% flammable/50% nonflammable. Roofing materials predominantly flammable. No emergency water resources observed.

Fuels
Vegetation relatively dense on north facing slopes consisting of mixed conifer. Along roadways and south facing slopes, vegetation was light to medium with large open areas of short grasses, juniper, shrub and disbursed ponderosa. FBFM 1, 2, 4, 5, 8, 9

Mitigation Recommendations
Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. Develop and maintain shaded fuelbreaks along all forested sections of primary county evacuation route. Recommend emergency water supply/cistern installation north west of WUI at Virginia Canyon and Two Brothers.



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Section 3: WILDLAND FIRE RESPONSE: INFRASTRUCTURE AND CAPABILITIES

A Community Wildfire Protection Implementation Plan needs to address existing protection capabilities and resources on hand for wildfire suppression and protection of life and property. As this plan is an implementation plan under the overall Clear Creek County CWPP those wishing to read detailed information on capabilities should refer to the CWPP for Clear Creek County (CCC) and to the website for the Clear Creek Fire Authority (CCFA).

Clear Creek Fire Authority:
Wildland firefighting operations on all private lands in CCC are the responsibility of the Clear Creek Fire Authority (CCFA). The CCFA maintains nine stations and is responsible for initial attack on any wildland fire within its response jurisdiction. Station 2 is in Idaho Springs, Station 1 is in Dumont, and Station 4 is in Georgetown. The CCFA is comprised of approximately 60 volunteer firefighters, one full-time paid chief, one full-time paid deputy chief and two part-time paid staff. CCFA has a website for equipment and other information: **http://www.clearcreekfire.com/.**

The Clear Creek Fire Authority participates in the Clear Creek County Annual (Wildfire) Operating Plan (AOP). "The purpose of this Annual Fire Operating Plan (AOP) is to set forth standard operating procedures, agreed procedures, and responsibilities to implement cooperative wildfire protection on all lands within Clear Creek County." Signatories to the AOP include the Clear Creek Fire Authority, Clear Creek County Board of County Commissioners (BoCC), CCC Sheriff's Office (SO), Colorado Division of Fire Prevention and Control (DFPC), USFS, and the Evergreen Fire Protection District (EFPD). Jefferson, Gilpin, Summit and Park counties are mutual aid partners.

The AOP allows CCFA to do initial attack on wildfires within the Arapaho-Roosevelt National Forest that are within two miles of private property within its district.

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Section 4: IMPLEMENTATION RECOMMENDATIONS

An important and required part of a Community Wildfire Protection Implementation Plan is the recommendation of mitigation projects detailing actions that should be undertaken by the community, landowners, and adjacent land management agencies (county, state and/or federal). Public land projects, when combined with home owner defensible space and structural protection, collaborate to provide area wide wildfire protection.

Wildfire mitigation is defined as the reduction of the probability and negative impacts of wildfire. Mitigation can be accomplished through wildland fuels management, non-fuels mitigation measures, and public outreach. Results are often most effective when these three approaches are pursued by governmental entities, citizen groups, and individuals working together. To quote the Clear Creek County CWPP:

"Mitigation objectives ultimately support the overarching goal of enhancing the safety and welfare of the county's residents and emergency responders. This is achieved by reducing the threat of catastrophic wildfire through strategic fuels reduction, reducing structural ignitability, and making infrastructure improvements that facilitate access and enhance suppression capabilities. Sustaining community outreach through education and public relations efforts are equally important factors. Effective mitigation needs the support of the residents."

The following pages contain sections on types of mitigation actions and prioritized projects selected for the Idaho Springs area CWPIP. As projects are completed or conditions change, additional projects will be added in ongoing action by the CWPIP team.

The projects are collaborative in nature and will require effort by the CWPIP team working with the CCFA, USFS, and county and state agencies. They generally follow direction given in the hazard assessments of the Clear Creek County plan.

As much as possible, projects were established to include areas with common features. Among the features considered were forest types, fuel loads, ingress and egress routes, and values. **Consideration was given to a number of factors. These are:**

1. **Values at risk:** Life and property are always the first values. Other values as mentioned earlier are: transportation and utility corridors, the area's watershed and the natural values of vegetation and wildlife.
2. **Current level of activity:** Experience has shown that wildfire mitigation efforts are most effective when the community is involved. One of the first efforts is to educate land owners to increase awareness of the hazards of wildfire and the positive actions they can take on their properties.
3. **The important actions that residents should take:** A major component of a Community Wildfire Protection Implementation Plan is the actions private land owners can and should take to provide protection to life and property.
4. **Proximity to public lands priority zone:** The Healthy Forest Restoration Act builds on efforts to restore healthy forest conditions near communities and essential

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community infrastructure. The Act emphasizes the need for federal agencies to work collaboratively with communities in prioritizing and developing hazardous fuel reduction projects. In the Idaho Springs area the US Forest Service manages most of the surrounding public lands.

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4.1 Mitigation Techniques to be applied

As stated in the CCC CWPP, *"Mitigation works. It is entirely possible to create a cleaner, healthier, natural environment where forest fuels cannot support a crown fire. Reducing surface fuels and limbing low tree branches inhibits the initiation of crown fire. Forest thinning reduces crown fire propagation by breaking canopy continuity and forcing the flaming front to the ground. This reduces fire line intensity, significantly lowers the risk of structure loss, and creates a safer situation in which to deploy suppression resources."*

4.1a Property and Structure Defensible Space – The Landowner

A major function of the CWPIP team will be to work with city officials and area residents to inform and educate on accomplishing defensible space on private properties. This can be done through meetings, special "wildfire days" involving fire department and forest service officials, mailings, or other events determined by the team.

Defensible space is an area around a structure where fuels and vegetation are treated, cleared or reduced to slow the spread of wildfire towards the structure. It also reduces the chance of a structure fire moving from the building to the surrounding forest. Defensible space provides *room for firefighters to do their jobs.* **Your house is more likely to survive a wildfire** if grasses, brush, trees and other common forest fuels are managed to reduce a fire's intensity.

You, as residents of the Idaho Springs area, are the most important component of this plan! Homeowners are often discouraged from completing defensible space because they believe their lot sizes are too small for effective fuel mitigation. **But your actions are truly meaningful** in protecting life, property, and the beauty of the area. Wildfire is a natural part of an ecosystem. The actions you take will determine how fire affects your property.

To quote the Colorado State Forest Service, "Fire is capricious. It can find the weak link in your home's fire protection scheme and gain the upper hand because of a small, overlooked or seemingly inconsequential factor" (Natural Resources Series #6.302, *Creating Wildfire Defensible Space Zones*).

You do not have to clear cut your property! Defensible space can be created in an esthetically pleasing manner that maintains privacy and the natural character of the community, and restores forest health.

It is recommended that defensible space be developed around all structures in the planning area. ***The CWPIP cannot mandate a property owner take any action. It is hoped residents in the area will see how defensible space can be attractively created and realize when everyone takes action the broader neighborhood landscape is protected.*** The advantage of the CWPIP is that it provides a framework for individuals

and neighbors to work together to reduce fire hazard and restore forest health. As noted in the CCC CWPP communities with a CWPP are eligible for cost share programs.

Publications on defensible space:

- Three excellent Colorado State Forest Service publications: ***"Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones"*;** on the agency's website at: http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf., ***Forest Home Fire Safety*** no. 6.304, at http://csfs.colostate.edu/pdfs/06304.pdf and ***"Landowner Guide to Thinning"*** on the website at http://csfs.colostate.edu/pdfs/landowner_g4thin_scr.pdf:
- **at the national website** www.firewise.org,
- **Appendix D which contains a complete brochure on Ready, Set, Go**

Consulting with a forester: advice is available from the Colorado State Forest Service district office at 1504 Quaker Street, Golden, CO (303-279-9757), from consulting foresters, and from the Clear Creek Fire Authority.

Research indicates homes with fire resistant roofs and defensible space have an 85 percent chance of surviving a wildfire while homes with neither of these characteristics have a 15 percent survival rate. An effective defensible space consists of flame resistant vegetation (aspen or large diameter trees without lower limbs), low flammability landscaping plants, mowed grass, lack of firewood stacks, and absence of fuel tanks immediately adjacent to structures. Structural ignitability is the fire resistance of materials used in the buildings themselves, and the design of the structure.

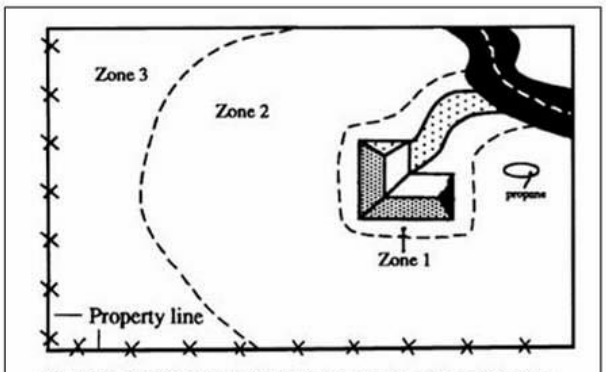

Figure 1: Forested property showing the three fire-defensible zones around a home or other structure.

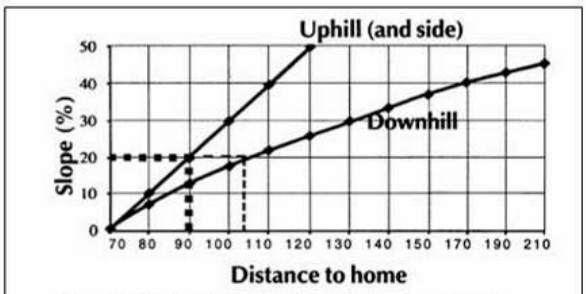

Figure 2: This chart indicates the minimum dimensions for defensible space from the home to the outer edge of Zone 2. For example, if your home is situated on a 20 percent slope, the minimum defensible space dimensions would be 90 feet uphill and to the sides of the home and 104 feet downhill from the home.

Figure 3. CSFS Defensible Space Standards (Dennis 2003)

Creation of defensible space consists of three zones that can be adapted to specific building lot situations (Figure 3). Following are portions of the CSFS publication on Defensible Space. See the website above for complete mitigation actions. Mitigation actions for city size lots are in priority recommendation 1, P.33.

Zone 1 extends a minimum distance of 15-30 feet outward from a structure… Most flammable vegetation is removed in this zone, with the possible exception of a few low-growing shrubs or fire-resistant plants. Avoid landscaping with common ground junipers, which are highly flammable. Increasing the width of Zone 1 will increase the structure's survivability. This distance should be increased 5 feet or more in areas downhill from a structure. Install nonflammable ground cover and plant nothing within the first 5 feet of the house and deck. This critical step will help prevent flames from coming into direct contact with the structure…:

• Irrigate grass and other vegetation during the growing season. Also, keep wild grasses mowed to a height of 6 inches or less.
• Ideally, remove all trees from Zone 1 to reduce fire hazards. If you keep any trees in this zone, consider them part of the structure and extend the distance of the entire defensible space accordingly. The lower branches of trees will be pruned 5 to 10 feet above the ground.
• Do not store firewood or other combustible materials anywhere in this zone. Keep firewood at least 30 feet away from structures, and uphill if possible.
• Enclose or screen decks with 1/8-inch or smaller metal mesh screening (1/16-inch mesh is preferable). Do not use areas under decks for storage.
• Remove any branches that overhang or touch the roof, and remove all fuels within 10 feet of the chimney.
• Rake pine needles and other organic debris at least 10 feet away from all decks and structures.
• Remove slash, wood chips and other woody debris from Zone 1.

Zone 2 width (typically 30 to 110 feet from Zone 1) depends upon the steepness of the slope. Zone 2 should be considerable larger if the dwelling occurs on steep slopes than if it occurs on level ground. Treatment of ground fuels and ladder fuels will be the same as Zone 1. Trees (or small groups of trees) and shrubs will be thinned to provide 10 feet of clearance among crowns on level ground. The distance between tree crowns needs to increase as slope increases. Herbaceous plants will be mowed as they dry in late summer.

Zone 3 has no specified width. It should provide a gradual transition from Zone 2 to areas farther from the home that have other forest management objectives. Your local Colorado State Forest Service forester can help you with this zone. This zone provides an opportunity for you to improve the health of the forest through proper management. With an assortment of stewardship options, you can proactively manage your forest to reduce wildfire intensity, protect water quality, improve wildlife habitat, boost the health and growth rate of your trees, and increase tree survivability during a wildfire.

Zones 1, 2, and 3 will be maintained annually. Two publications that provide information on appropriate plants to use for defensible space landscaping have been prepared by CSFS: *Grass Seed Mixes to Reduce Wildfire Hazard*, Bulletin No. 6.306 (Dennis, not dated), and *FireWise Plant Materials*, Bulletin 6.305 (Dennis, not dated

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Mitigation of Structural Ignitability

1. **Most structures *DON'T* ignite from direct flame contact**, but from radiant heat (heat that doesn't warm the intervening air but does warm objects). As a fire burns the heat passes through air and windows to objects inside the home that warm to the point of ignition then smolder for hours. **You have an important role making the house less resistant to radiant heat.** Use non-combustible roofing material and non-combustible siding (Class C or better), and spark arresters on chimneys.
2. **Embers or fire brands also ignite house fires.** During fires the air contains embers and tosses them anywhere, including onto unburned fuels. A wildfire can create spot fires miles downwind. Embers can get stuck in "traps" on roofing, such as beside chimneys or in gutters and start new fires. Clean pine needles out of gutters and off roofing. **Screen attic and foundation vents with fine mesh screening.**
3. **Large windows are a threat** to homes because they allow radiant heat to enter the structure. Remove lacey and other decorative curtains when a fire approaches to prevent radiant heat from igniting them through the glass. Large windows, especially single-pane windows, are vulnerable to breaking from debris blowing in fire-generated winds and embers. Double and triple pane windows are more resistant to heat transfer.
4. **Decks are highly combustible and serve as heat traps. If possible use fire resistant construction and keep areas underneath clean of vegetation or storage.**

4.1b Fuel Break

A fuel break is an area where the vegetation structure and/or composition are altered to reduce severe fire behavior to provide firefighters a chance for control. Vegetation treatments could include such things as reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. By breaking up vertical and horizontal vegetation-fuel continuity of the forest stands, fire suppression resources are afforded better opportunities to control fire rate of spread and contain wildfires. For mitigation actions under this plan t**he CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities*; *http://csfs.colostate.edu/pdfs/fuelbreak_guidellines.pdf* (Dennis, not dated); and *Lodgepole Pine Management Guidelines for Land Managers in the Wildland -Urban Interface* (Dennis et al)** http://csfs.colostate.edu/pdfs/lpp-guide-LS-www.pdf**, should be followed.**

Stand Densities

As noted in CSFS publications, crown separation is a more critical factor for fuel breaks than a fixed tree density level. A *minimum* 10-foot spacing between the edges of tree crowns is recommended on level ground. As slope increases, crown spacing should also increase. Small, isolated groups of trees may be retained for visual diversity. Increase crown spacing around any groups of trees left for aesthetic reasons and to reduce fire intensities and torching potential.

Fuel break Width/Slope

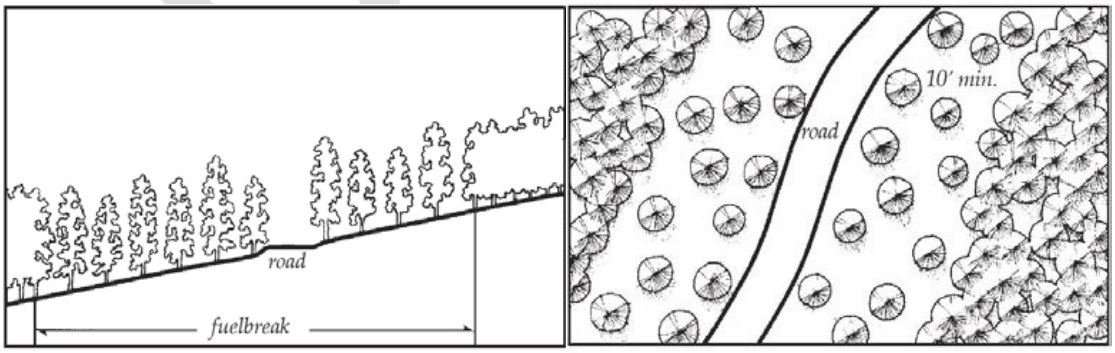
Percent slope %	Minimum uphill distance (ft.)	Minimum downhill distance (ft.)	Total distance of modified fuels (ft.)
0	150	150	300
10	140	165	303
20	130	180	310
30	120	195	315
40	110	210	320
50	100	225	325
60	100	240	340

*As slope increases, total distance for cut-and-fill for road construction rapidly increases, improving fuelbreak effective width.

Various fuel breaks are recommended in the Idaho Springs area CWPIP. As stated, the Idaho Springs area has lands in the montane zone. Dry, south-facing slopes often have open stands of large ponderosa pines. North aspects of the montane retain more soil moisture and support denser stands of conifer that are less drought resistant. The trees may be a mixture of Douglas fir, lodge pole pine, ponderosa pine and an occasional Engelmann spruce. Montane soils with high moisture content may support groves of quaking aspen.

Where there are thick and aged stands of lodgepole pine there is the potential for wind throw if fuel break thinning creates corridors. It is recommended that thinning leave stands of trees separated from adjacent stands to create the desired spacing affect. This will assist these stands to be self-supportive when wind events occur.

The harvesting of conifer trees would occur as necessary to achieve the desired density of approximately 10- to15-foot spacing among tree canopies (Figure 5). Conifer trees would be limbed up approximately 10 feet from the ground and limbs removed. Ladder fuels, such as small trees and shrubs, are thinned out so that fire will not easily burn from the ground into the forest canopy. Aspen trees would not be harvested or harmed during the creation of the fuel breaks as they are usually fire resistant and would add to the effectiveness of the fuel breaks. Increased Aspen dominance in forest stands will improve forest health and aesthetics.



Cross-section of a typical fuelbreak built in conjunction with a road.

Plan view of fuelbreak showing minimum distance between tree crowns.

Figure 4: Fuel Break Diagram (Dennis not dated)

Logs and other woody material generated from creating the fuel breaks would be disposed through salvage log sales, hauling debris off site to a designated disposal area, or burned on site following CSFS, Golden District *Prescribed Pile Burning Guidelines* (CSFS, not dated). Salvage logging may be possible if harvested trees are sufficient in size and wood quality for post-harvest markets. An evaluation should be made to determine marketability of logs prior to logging. Burning the woody debris will require arrangements to be made with the CCFA. A CCC open burning permit will be necessary.

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Treatment Alternatives and Costs (from CCC CWPP)

Treatment	Estimated Cost	Comments
Machine Mowing	$90 - $200 per acre	Appropriate for large, flat grassy areas on relatively flat topography.
Prescribed Fire	$75 - $300 per acre	• Can be very cost effective. • Ecologically beneficial. • Can be used as training opportunity for firefighters. • Cost varies with complexity. • Carries risk of escape, which may be unacceptable in some WUI areas. • Unreliable scheduling due to weather and smoke management constraints.
Brush Mastication	$300 - $500 per acre	• Brush species (Gamble oak in particular) tend to resprout vigorously after mechanical treatment. • Follow-up treatments with herbicides, fire, grazing, or further mechanical treatments are typically necessary. • Mastication tends to be less expensive than manual treatment and eliminates disposal issues.
Timber Mastication	$300 - $1,200 per acre	• Materials up to 10 inches in diameter and slopes up to 30 percent can be treated. • Eliminates disposal issues. • Environmental impacts of residue being left onsite are still under study.
Manual Treatment with Chipping or Pile Burning	$300 - $1,200 per acre	• Allows for removal of merchantable materials or firewood in timber. • Requires chipping, hauling, and pile burning of slash.
Feller Buncher	$750 and up per acre	• Mechanical treatment on slopes over 30 percent of materials over 10 inches in diameter may require a feller buncher rather than a masticator. • Costs tend to be considerably higher than mastication. • May allow for removal of merchantable material.

The above cost estimates are several years old. The community CWPIP team should consult with the CO State Forest Service for advice on getting current cost estimates as they move to implement a new priority project.

4.1c Fire Break

A fire break is an area where vegetation has been removed to bare ground or replaced with non-flammable surface such as asphalt. The purpose of the fire break is to hopefully stop fire progression and improve fire suppression efforts. I-70, Hwy 103, and US Forest Service Roads and county roads should be managed as firebreaks in the planning area to reduce the chances of fire caused byroadside ignition from spreading to the planning area. Herbaceous vegetation should be mowed approximately 10 feet on each side in late summer to further enhance its effectiveness.

4.1d Watershed Resource Protection

Watershed protection is important to the Idaho Springs area. The Clear Creek County CWPP did look at watershed identification and treatment. *"In the early strategic planning phases of the project, the county's watershed resources were identified as a critical value at risk. …Section 1.3, Goals and Objectives, states "recommend mitigation*

measures that contribute to the conservation of headwater watershed resources, and other natural and economic assets."

A county's "Watershed Interface" … was identified as a separate area of concern from the actual WUI management zones that were also identified during the planning meeting. The primary risk to watersheds from wildfire is the post-fire erosion that occurs after stabilizing ground cover has been removed. …Sediment clogs streams and reservoirs, and fouls water treatment facilities.

Effectively mitigating an entire watershed with the goal of preventing potential debris flow is likely an impossible goal to achieve. Landscape-scale treatments in rugged and inaccessible terrain are logistically and financially impractical. Treatment recommendations may, however, take into account watershed resources where they intersect with designated WUI treatment zones. With a 1-mile buffer placed around each WUI, the majority of the "watershed interface" is covered."

4.2 Community Evacuation and Preparedness

Evacuation Routes: Given the nature of the terrain the team identified action to mitigate fire effects along roadways as a critical component of implementation. Creation and maintenance of ingress/egress will enable residents to move and/or evacuate safely in the event of an emergency and also enable emergency vehicles access to take action on wildfire to save lives, property, and the area itself. The Clear Creek County CWPP states as an objective for a number of areas to, *"Develop shaded fuelbreaks along all forested secondary community access routes...anchor shaded fuelbreaks to meadows."*

General priority criteria for mitigation: 1) steep, timbered slopes adjacent to the road; 2) close proximity of timber to the roadway itself (e.g. within 50 feet); 3) roads with only one way in and out.

The CWPIP team will collaborate with the Clear Creek Fire Authority to develop a priority listing of roadways for thinning.

Preparedness:
Signing and Evacuation; all Properties:
Homes need visible address signing which are non-flammable and reflective at the ends of their driveways. Emergency personnel respond based on street addresses and last names.

1. **Create an evacuation plan – in advance.** Include a meeting place outside your area, and a family member or friend outside of your area who can be a point of contact. Think of the Four Ps: Pets, Pills, Papers, and Photos. You may have only a short time to evacuate.

If you do leave the house and time allows you to safely do so, set a ladder in the driveway and connect garden hoses to spigots so firefighters can use your equipment to help defend your home.

Ready-Set-Go!:
See Appendix D for a complete brochure on this important program
Clear Creek County endorses the Ready-Set-Go (RSG) program of wildfire action planning for residents and other property owners. This program assists firefighters to teach individuals who live in high risk wildfire areas and the wildland-urban-interface (WUI) how to best prepare themselves and their properties against fire threats.

The RSG Program is a three step process that can significantly increase the safety of residents and the safety of responding firefighters. The three steps are:
1) Ready – Preparing for the Fire Threat; Be Ready, Be Firewise.
2) Set – Situational Awareness
3) Go – Leave early! Comply with any evacuation orders and follow evacuation plans early!

Code Red:
The Clear Creek County Sheriff's Office Communications Center has contracted for "CodeRed™" high-speed telephone emergency notification services sometimes referred to as "reverse 911 ® ". The CodeRed system allows emergency dispatchers the ability to deliver public safety messages to targeted areas or the entire county at a rate of up to 60,000 calls per hour. This service includes those residents and businesses in the municipalities of Idaho Springs, Empire, Georgetown and Silver Plume as well as the unincorporated area of the county.

These calls warn citizens of danger. Multiple phones within a designated area can be called simultaneously to warn residents of flood, fire, tornadoes, chemical spills, or dangerous suspects.

For more information on Code Red and how to sign up see Appendix D.

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Section 5: RECOMMENDED PRIORITY ACTIONS FOR THE IDAHO SPRINGS CWPIP AREA

The following pages contain the priority projects and their descriptions as determined by the Idaho Springs area CWPIP team.

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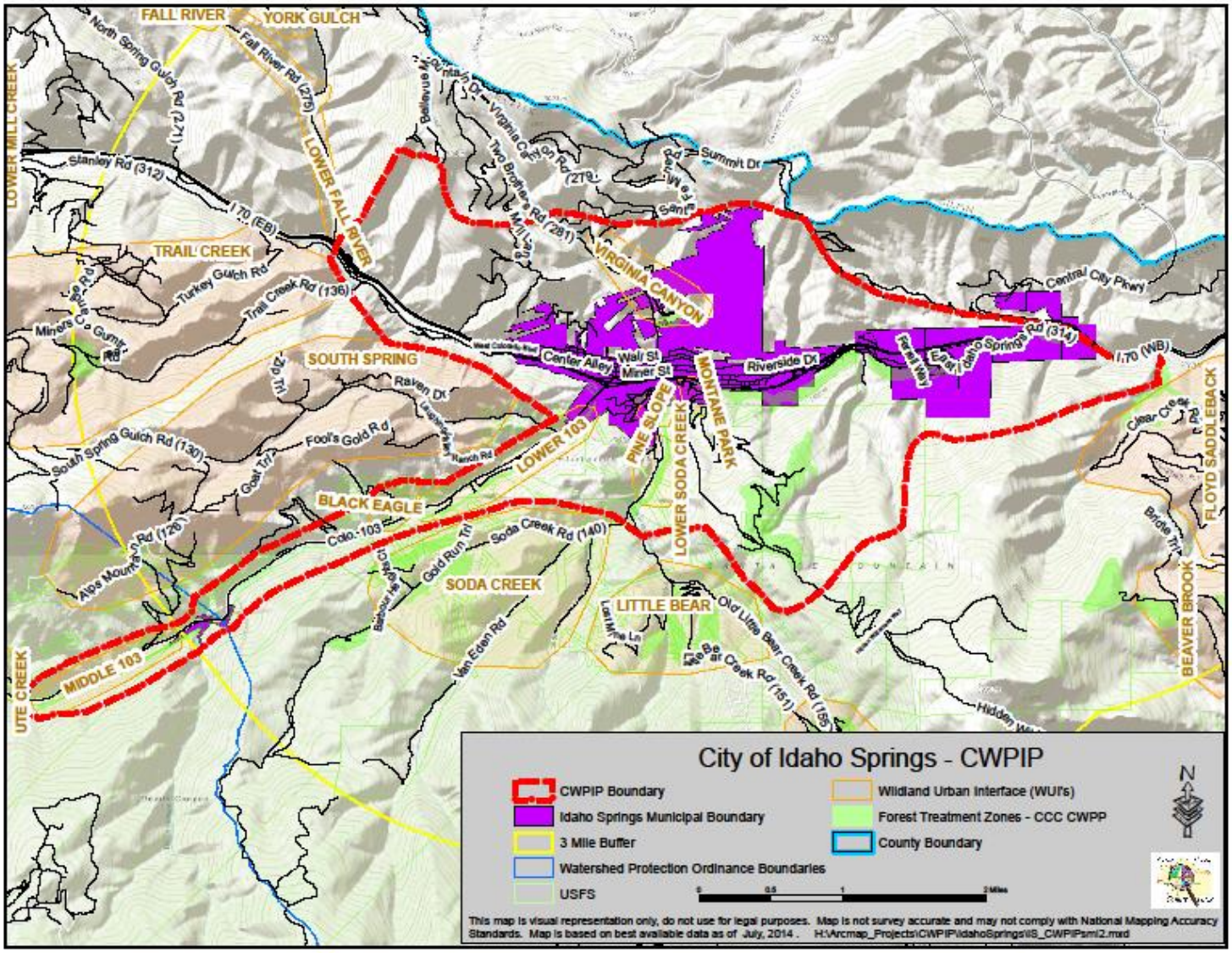

Figure 5: CWPIP Plan area and Mitigation Zones

Recommended Treatment Priority 1:
Work with officials and neighborhoods to facilitate creation of Defensible Space

Creation of personal defensible space is critical to area protection. The team recommends active collaboration between itself, the Evergreen Fire Protection District, the Colorado State Forest Service Golden District and Clear Creek and Jefferson County offices to use HOA and neighborhood/community events to educate residents and promote their efforts to create Defensible Space on residential lands within the plan area. See Section 4.1, pp.28-31, and CSFS publication: "*Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones"*, on the CSFS website in the Defensible Space section at: http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf.

The team also recommends it work with the Clear Creek Fire Authority, CCC, and the CSFS to develop submittals for various grant opportunities to gain funding for contractors who can work to carry out forestry actions on properties where the land owners wish to create defensible space but are unable to personally carry out more advanced actions. Such actions would include removal of larger trees to create recommended crown spacing, and chipping or other methods of removal of downed timber.

This action would require: community events to promote and inform residents on accomplishing defensible space; developing a listing of those land owners desiring to move ahead with defensible space and what mitigation services are needed; and working with county and state fire officials to develop opportunities for their action and/or grant opportunities. CCFA and CSFS have capability to evaluate individual properties and recommend actions.

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Recommended Treatment Priority 2:
Mitigation adjacent to Idaho Springs; south of I-70

The Clear Creek County CWPP identifies the area immediately south of Idaho Springs, adjacent to I-70 as a potential source of wildfire impact as the area has dense stands of lodgepole and other conifers. This area involves the units: Montane Park, Pine Slope, Lower Soda Creek, and an area extending east of Montane Park along I-70 to the east end of Idaho Springs (see units shown in green on the map on P.47). The area includes lands of the Colorado Department of Transportation (CDOT), City of Idaho Springs, private property, and the US Forest Service.

Montane Park and area to the east contains approximately 56 acres; Pine Slope and an area immediately west approximately 3 acres each, and Lower Soda Creek and continuing to the southwest approximately 15 acres of CCC recommended mitigation. This does not include land owner defensible space action throughout the area.

It is noted that there is private property involved both along roadways and behind properties in recommended mitigation fuel break areas. This will require working with property owners to gain understanding and agreement to treatment.

Roadways
The CCC CWPP calls for shaded fuel breaks along… "all forested secondary community access roads" in the areas above.

While there is no significant forest encroachment along primary evacuation routes such as Soda Creek or secondary neighborhood access the roads will be evaluated for mitigation thinning. The basic recommendation is to perform thinning along main roadways. Thin (mostly dead fall) up to 50 feet on either side of the road, following guidelines listed below.

The recommendation is for *fuel break clearing of dead standing and dead-fall coniferous growth and dead low growth with only moderate live-ground growth removal, then seeding with appropriate mixes to encourage grass cover and prevent soil erosion. Simple removal of standing and downed dead timber growth could accomplish the majority of the "shading".* If it is assumed up to 50 feet would be involved on either side of the road this means maximum acreage would be approximately 12 acres per mile.

Treatment would be in accordance with:

- The USFS standard for roadside mitigation/hazard tree removal: *"… implement hazard tree removal activities within a distance equal to 110% of the height of the tallest hazard tree from the edge of: 1) National Forest System (NFS) roads open to motorized travel (maintenance levels two through five); 2) federal, state, county, or other permitted roads…"* In this case the height of the tallest tree within the treatment zone would be used.
- The Colorado State Forest Service *"Fuelbreak Guidelines for Forested Subdivisions and Communities"* by Frank Dennis

Fuelbreaks
In areas of fuel break mitigation vegetation treatments could include such things as reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. **The CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities,* (Dennis, not dated) and *Lodgepole Pine Management Guidelines for Land Managers in the Wildland -Urban Interface* (Dennis et al) should be followed.**

As noted in those publications (see pp.31-34),"…crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A minimum 10-foot spacing between the edges of tree crowns is recommended on level ground. "The minimum recommended fuelbreak width is approximately 300 feet for level ground. Since fire activity intensifies as slope increases, the overall fuelbreak width must also increase… Widths are also increased when severe topographic conditions are encountered. Guidelines for fuelbreak widths on slopes are given on page 32. Small, isolated groups of trees may be retained for visual diversity. Increase crown spacing around any groups of trees for aesthetic reasons and to reduce fire intensities and torching potential."

Where stands of lodgepole pine exist there is potential for wind throw if fuelbreak thinning creates "wind" corridors in the forest. It is recommended that thinning be accomplished by leaving groups of 7 to 10 trees separated from adjacent groups of trees to create the desired spacing effect. This will assist these stands to be self-supportive in wind events.

Treatment would be primarily hand thinning with some mechanical, and with slash pile and treatment of material or some use of wood for biomass business purposes. Cost would be approximately $2000/acre. **The community team should consult with the Golden District of the Colorado State Forest Service for advice on getting an up-to-date cost estimate when it begins the process to accomplish this project.**

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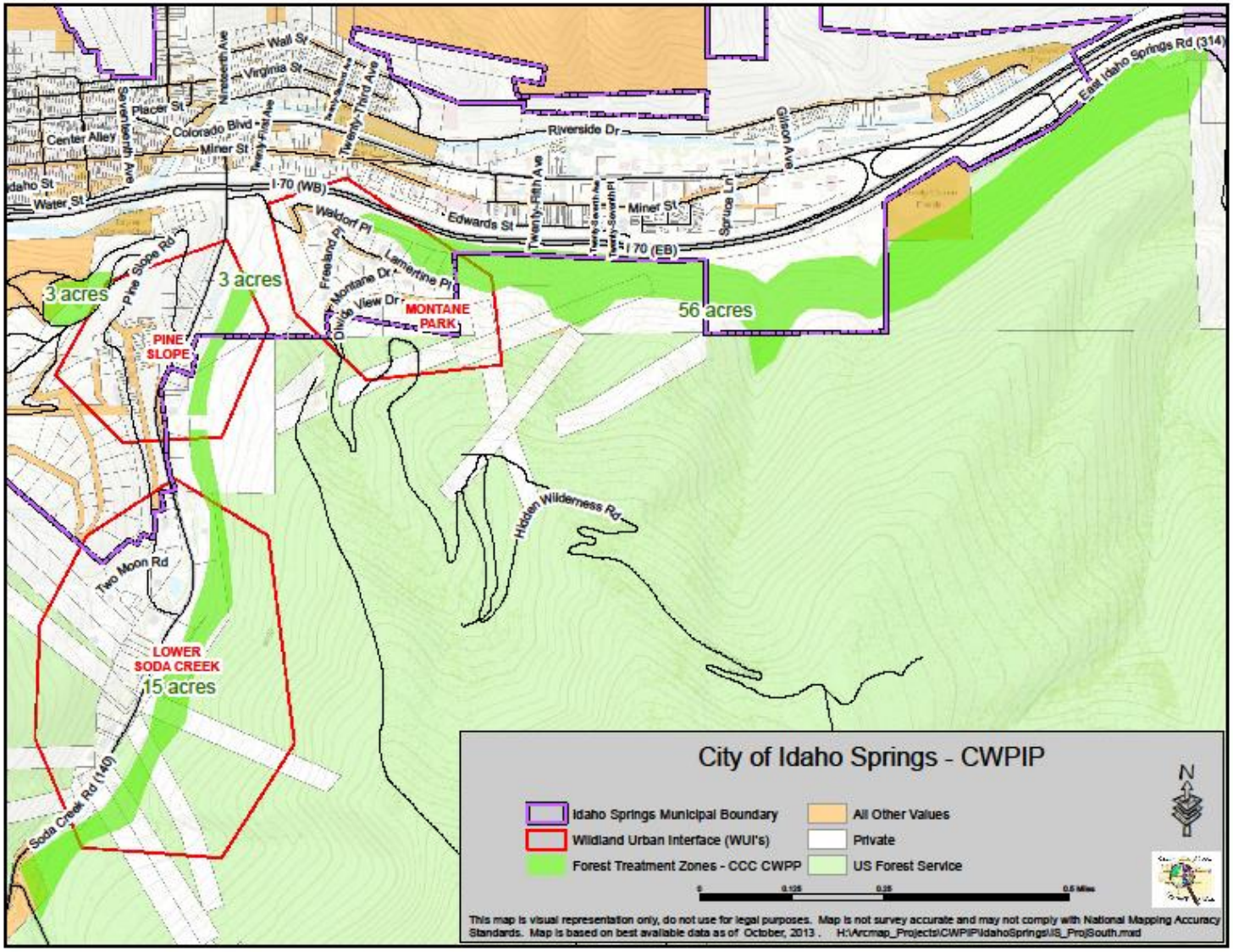

Idaho Springs Area Mitigation: south of I-70

Recommended Treatment Priority 3:
Lower and Middle 103 and Black Eagle units

The highway 103 corridor is important to Idaho Springs for transportation (recreation economy, emergency access and evacuation). There are numerous private lands and homes involved as well, and wildfire protection for this area and the canyon it forms leading into the city is important. *It is noted that there is private property involved in recommended mitigation fuel break areas. This will require working with property owners to gain understanding and agreement to treatment.*

Lower & Middle 103:
Mitigation actions for both of these units are largely confined to protection for the residential areas and overall for the valley. The CCC CWPP notes that there is…"no significant forest encroachment along primary county evacuation route Co 103" in both areas. The lower 103 mitigation unit is approximately 14 acres; the middle 103 treatment area is approximately 21 acres.

The recommendation is for *fuel break clearing of dead standing and dead-fall coniferous growth and dead low growth with only moderate live-ground growth removal, then seeding with appropriate mixes to encourage grass cover and prevent soil erosion. Simple removal of standing and downed dead timber growth should accomplish the majority of the "shading".*

"The majority of dead trees within the fuelbreak should be removed. Occasionally, large, dead trees (14 inches or larger in diameter at 4 1/2 feet above ground level) may be retained as wildlife trees. If retained, all ladder fuels must be cleared from around the tree's trunk."

Where stands of lodgepole pine exist there is potential for wind throw if fuelbreak thinning creates "wind" corridors in the forest. It is recommended that thinning be accomplished by leaving groups of 7 to 10 trees separated from adjacent groups of trees to create the desired spacing effect. This will assist these stands to be self-supportive in wind events.

Treatment would be primarily hand thinning with some mechanical, and with slash pile and treatment of material or some use of wood for biomass business purposes. Cost would be approximately $2000/acre. **The community team should consult with the Golden District of the Colorado State Forest Service for advice on getting an up-to-date cost estimate when it begins the process to accomplish this project.**

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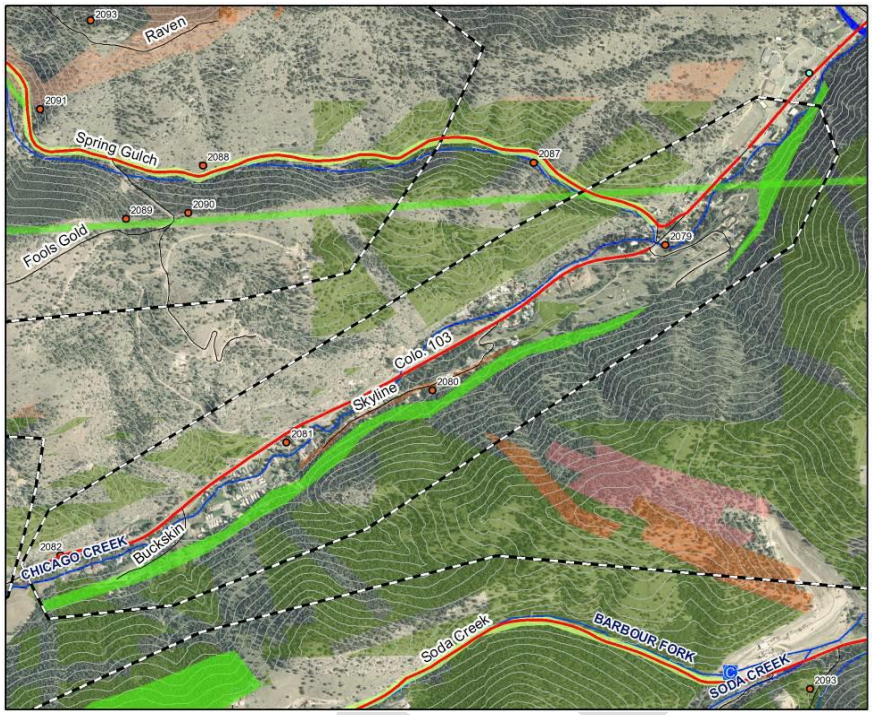
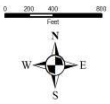


Clear Creek County

Lower 103 WUI



Clear Creek County

Middle 103 WUI

Black Eagle
2085
2084
2086
2082
2083
CHICAGO CREEK
Colo. 103
Clear Creek County
Black Eagle WUI
0 100 200 400
Feet
N
W
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Recommended Treatment Priority 4:
Idaho Springs' Watershed Area
Mitigation of Idaho Springs' Reservoir
Mitigation at Idaho Springs' water intake

The Idaho Springs' watershed, primarily the reservoir and downstream, is the third recommended unit for mitigation. These treatments would be beneficial to slow the spread of wildfire, protecting the area immediately surrounding the reservoir to avoid siltation into the reservoir, and protecting the roadway into the reservoir and the adjacent stream flowing out of the reservoir. As noted earlier from the CCC CWPP, "*Effectively mitigating an entire watershed with the goal of preventing potential debris flow is likely an impossible goal to achieve. Landscape-scale treatments in rugged and inaccessible terrain are logistically and financially impractical. Treatment recommendations may, however, take into account watershed resources where they intersect with designated WUI treatment zones.*"

Also involved is any needed mitigation in the area immediately adjacent to the water intake for the City of Idaho Springs.

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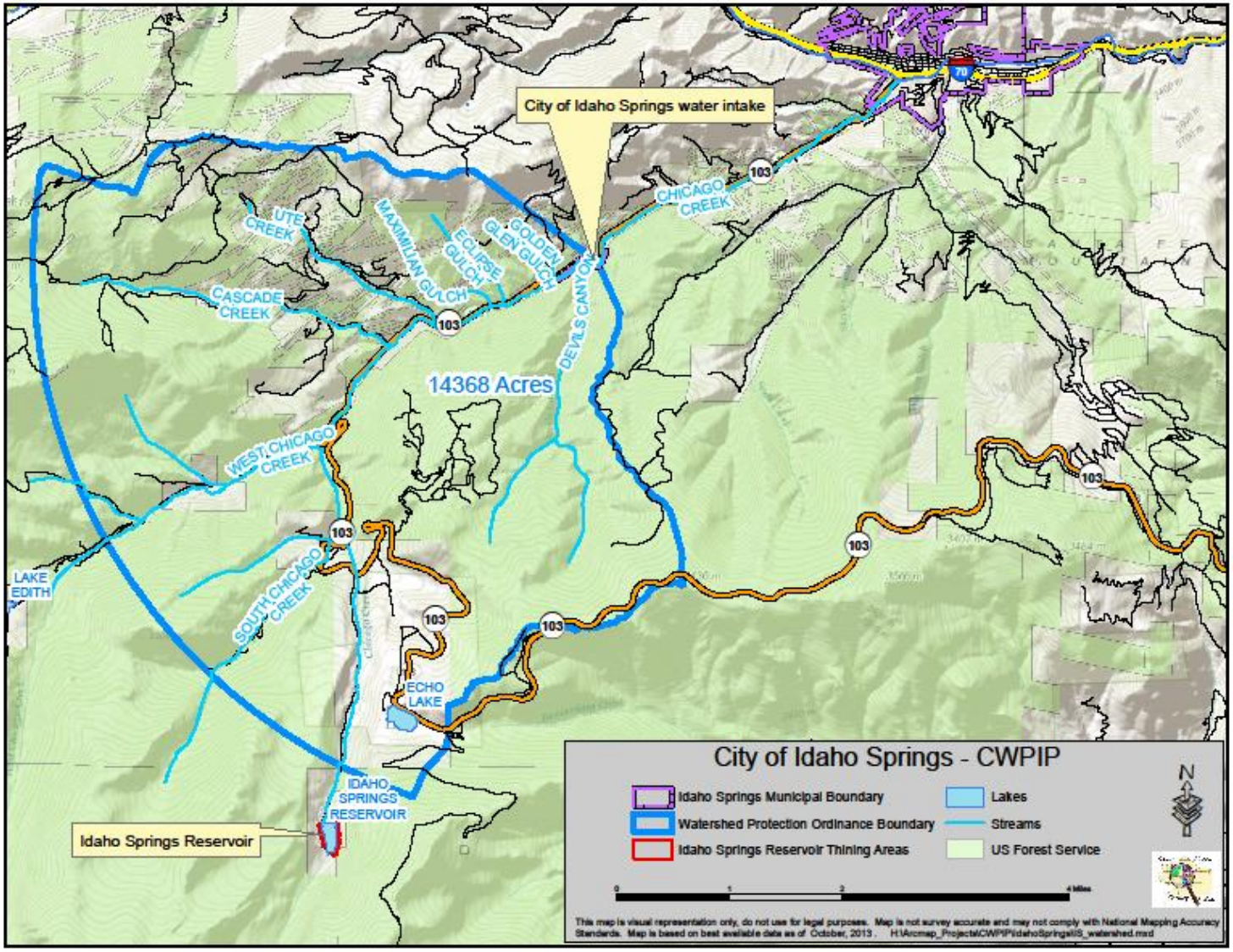
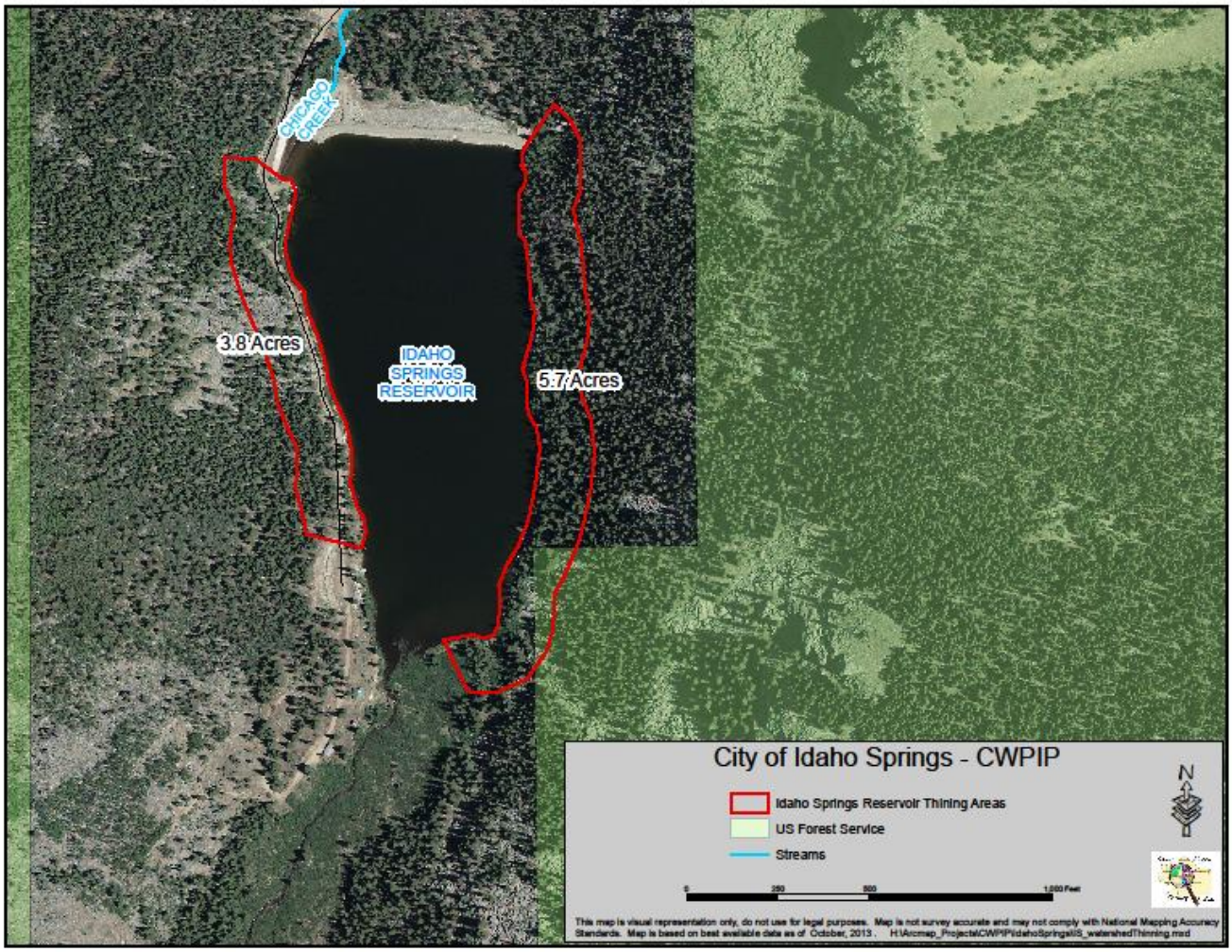
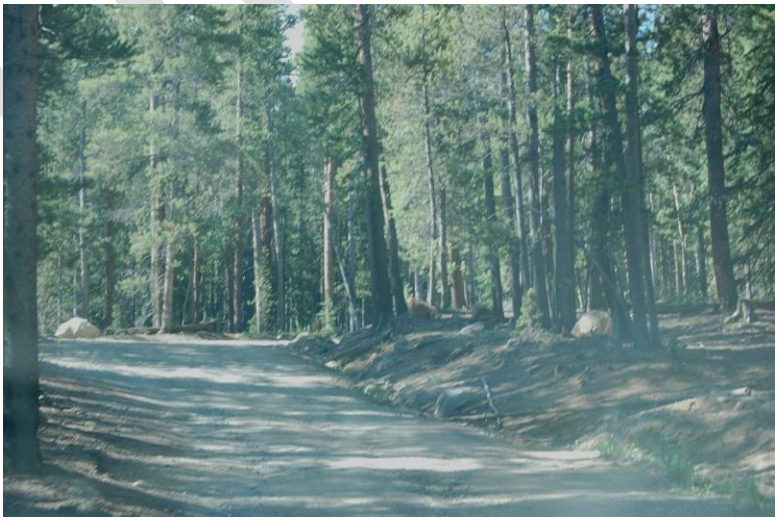


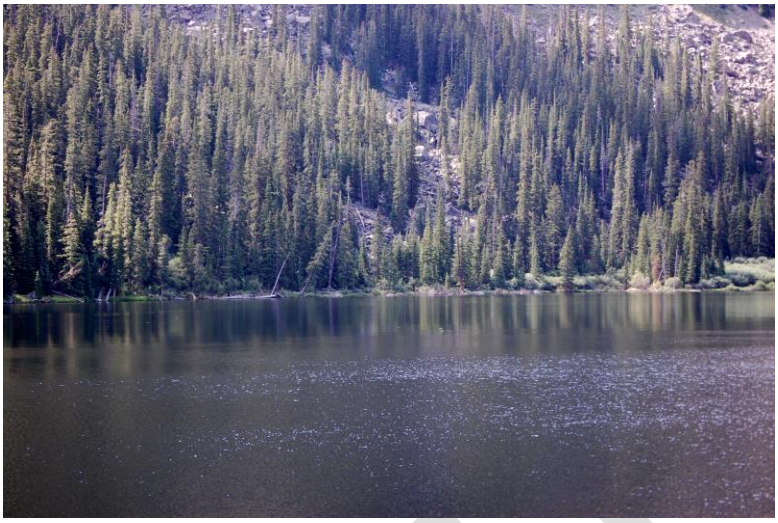
IDAHO SPRINGS WATERSHED



Idaho Springs Reservoir



Road to Idaho Springs Reservoir



Idaho Springs Reservoir

Idaho Springs Reservoir

The Idaho Springs' reservoir and access road are recommended for thinning and patch cutting. These treatments would be beneficial to slow the spread of wildfire through the area, protecting the area immediately surrounding the reservoir to aid in avoiding siltation into the reservoir. Treatment would be accomplished on approximately 9.5 acres.

The reservoir is located 12 miles south of the City of Idaho Springs off State Highway 103. The reservoir is just below timberline at an elevation just over 10,600 feet. Access to the reservoir is by a narrow 4 wheel drive dirt road approximately 2.3 miles long. The road and creek from the reservoir is surrounded by a thick forest of trees, live and dead standing and fallen trees. The road is a combination of US Forest Service and private land. There are a few cabins and there is a summer camp.

Reservoir
In areas of fuel break mitigation vegetation treatments include: reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. **The CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities,* (Dennis, not dated) and *Lodgepole Pine Management Guidelines for Land Managers in the Wildland -Urban Interface* (Dennis et al) should be followed.**

As noted in those publications (see pp.36-38),"…crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A minimum 10-foot spacing between the edges of tree crowns is recommended on level ground. "The minimum recommended fuelbreak width is approximately 300 feet for level ground. Since fire activity intensifies as slope increases, the overall fuelbreak width must also increase… Widths are also increased when severe topographic conditions are encountered. Guidelines for fuelbreak widths on slopes are given on page 32. As this area is at timberline the setback from the reservoir was mapped at 150 feet for this exercise.

Small, isolated groups of trees may be retained for visual diversity. Increase crown spacing around any groups of trees for aesthetic reasons and to reduce fire intensities and torching potential." Actual distances involved would be determined by a professional forester.

Dead, diseased, weakened, and malformed conifer trees would be removed. The harvesting of conifer trees would occur as necessary to achieve the desired density. Conifer trees would be limbed up approximately 10 feet from the ground and limbs removed. Ladder fuels, such as small trees and shrubs, are thinned out so that fire will not easily burn from the ground into the forest canopy.

Roadway
Thinning along the roadway is also recommended to make ingress safer for fire teams. Treatment would be in accordance with:

- The USFS standard for roadside mitigation/hazard tree removal: *"… implement hazard tree removal activities within a distance equal to 110% of the height of the tallest hazard tree from the edge of: 1) National Forest System (NFS) roads open to motorized travel (maintenance levels two through five); 2) federal, state, county, or other permitted roads…"* In this case the height of the tallest tree within the treatment zone would be used.
- The Colorado State Forest Service *"Fuelbreak Guidelines for Forested Subdivisions and Communities"* by Frank Dennis

The basic recommendation is to thin (mostly dead fall) up to approximately 50 feet on either side of the road, following the above guidelines. There would be removal of *dead standing and dead-fall coniferous growth and dead low growth with only moderate live-ground growth removal, then seeding with appropriate mixes to encourage grass cover and prevent soil erosion. Simple removal of standing and downed dead timber growth could accomplish the majority of the "shading".* If it is assumed up to 50 feet would be involved on either side of the road this means maximum acreage would be approximately 12 acres per mile.

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In both reservoir and road areas treatment would be primarily hand thinning with some mechanical, and with slash pile treatment of material or some use of wood for biomass business purposes. Cost would be approximately $2000/acre. **The community team should consult with the Golden District of the Colorado State Forest Service for advice on getting an up-to-date cost estimate when it begins the process to accomplish this project.**

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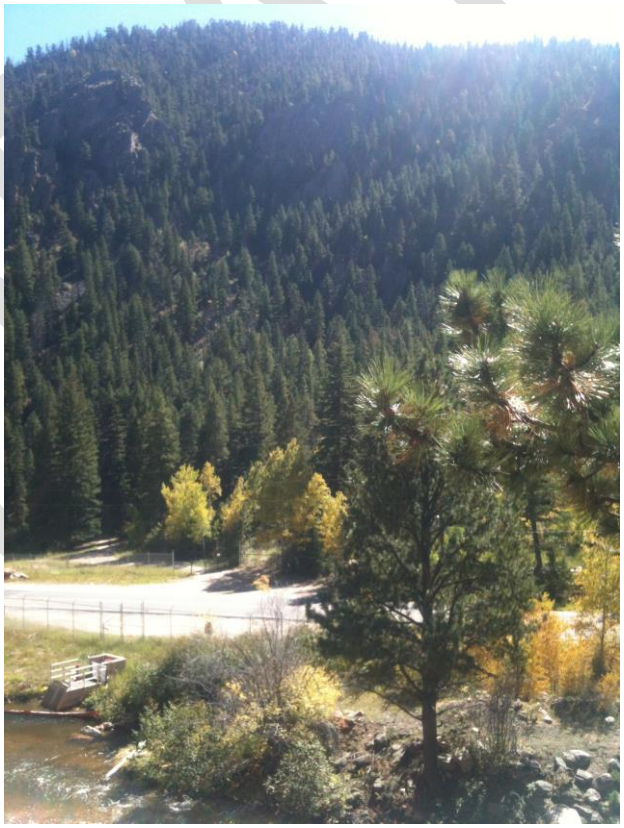
Idaho Springs Water Supply Intake on 103

Idaho Springs Water Supply Intake



Idaho Springs Water Supply Intake

The City of Idaho Springs' water intake area is in an open area and not currently under serious wildfire threat. The goal is to maintain the clearance area (fire break) around the intake facility to avoid any serious impact from wildfire.

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Recommended Treatment Priority 5:
USFS Actions

Previous actions and additional mitigation by the US Forest Service, Arapahoe and Roosevelt National Forests, on Santa Fe Mountain were selected as priority 5 by the team.

Wildfire on the mountain, especially slopes overlooking Idaho Springs, could have impact on the community and adjacent neighborhoods at the base of the mountain, from both flame fronts and ember storms.

The Forest Service accomplished mitigation work thinning approximately 130+ acres on Santa Fe Mountain in 2003. The work was largely performed manually by a hand crew with some mechanical work. See following map. According to the USFS project report, **"*The thinning was in mixed conifer forest, removing dead Douglas-fir, and enhancing aspen. Slash was treated through a combination of piling/burning and chipping.*"**

The report states, *"The purpose of this project was to strategically place fuels treatments to reduce the probability of a large wildfire and also aid in suppression efforts in the event of a wildfire. This project was also needed to improve stand health and increase tree vigor favoring retention of healthy pines and aspen."*

Currently, the US Forest Service is in the initial planning stages to evaluate parts of the Boulder and Clear Creek Ranger Districts for "landscape scale restoration and fuels reduction work."or both. With the flood event that occurred in September (2013), the timing of this project is still unclear. As part of this evaluation, the Santa Fe Mountain area will be considered for both new and enhanced treatments on old units.

This CWPIP recommendation calls for both retreatment of past treated area to maintain positive effects of that mitigation, and for close analysis of the entire area for additional treatments. Due to terrain slope and aspect most treatment will be hand crew activity. All slash should be disposed of through controlled burning or, if potential good use exists, use of downed wood product.

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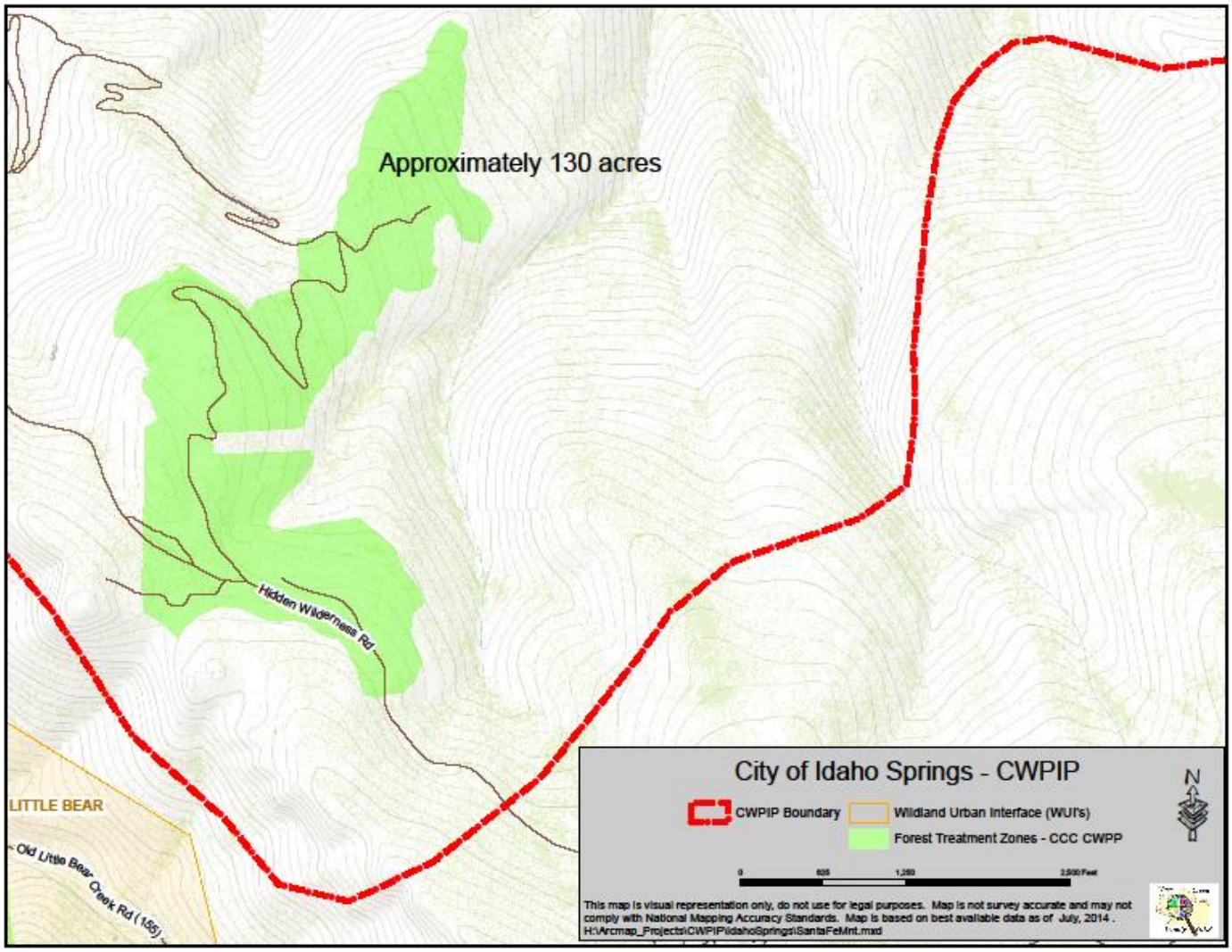

Area of Past Santa Fe Mountain Fuel Reduction

Recommended Treatment Priority Zone 6:
City of Idaho Springs

Creation of personal defensible space is critical to area protection. The team recommends active collaboration between itself, the Clear Creek Fire Authority, the Colorado State Forest Service Golden District and Clear Creek Office of Emergency Management to use HOA and other neighborhood and City events to educate residents and promote their efforts to create Defensible Space on residential lands within the plan area. See Section 4, pp.28-31, and CSFS publication: Protecting Your Home from Wildfire: *"Creating Wildfire-Defensible Zones,* on the CSFS website at: http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf.

The team also recommends itself to work with the Clear Creek Fire Authority, CCC, and the CSFS to develop submittals for various grant opportunities to gain funding for contractors who can work to carry out forestry actions on properties where the land owners wish to create defensible space but are unable to personally carry out more advanced actions. Such actions would include removal of larger trees to create recommended crown spacing, and chipping or other methods of removal of downed timber.

This action would require: community events to promote and inform residents on accomplishing defensible space; developing a listing of those land owners desiring to move ahead with defensible space and what mitigation services are needed; and working with county and state fire officials to develop opportunities for their action and/or grant opportunities. CCFA and CSFS have capability to evaluate individual properties and recommend actions.

As of the census of 2010, there were 1,717 people and 841 households in Idaho Springs. There were 904 housing units at an average density of 871.0 per square mile. The city is formed of a narrow strip along the north side of Interstate 70, with a historical downtown on its western end and a strip of tourist-related businesses on its eastern end.

The fire hazard ratings within the City of Idaho Springs focus on the potential for impact from ember storms from surrounding wildfire activity based on topography ("nestled on a valley floor surrounded by steep slopes") and forest fuels ("dense lodgepole pine and mixed conifer south of I-70"). These factors, along with weather determine fire behavior. Crown fires could occur in areas even rated at low risk if extreme weather conditions occurred when a fire was burning.

This zone includes the City of Idaho Springs and its immediate vicinity. Lot sizes are smaller than in surrounding areas. With its businesses and historical buildings it is a major commercial and financial center of Clear Creek County. These factors establish the city as a high priority for protection under the CWPIP. Fire hazard ratings throughout the city are moderate due to density of structures and "ornamental trees and shrubs on lots.

Mitigation in urban areas is similar to techniques for rural areas. Following are recommendations pertaining to urban lots. It is recognized that where buildings have been given official historic designations that changing the actual fabric of the buildings may not be feasible. This makes mitigation of the physical lot and rapid fire response important.

Protection for City Size Lots: Also see building recommendations in Appendix D brochure for Ready, Set, Go

In older residential areas of cities, lots are usually less than one acre in size. This coincides with the definition of Zone 1 used for the larger sites, basically from the buildings out 15-20 feet. Thinning is accomplished in this area by removing most trees within the zone. Trees near chimneys and decks should be the highest priority for removal. Ideally only one or two high value trees should be left within 15 feet of a structure. Prune branches up 6-10 feet on larger trees to prevent fire from spreading from the ground up. Smaller trees should be pruned as well, but always leave at least two-thirds of the green branches.

1. Keep the ground around the home clear of dead woody materials and branches. Landscape with less flammable shrubs and plantings (a list is available from the State Forest Service) and with grass. Two publications, *Fire-Resistant Landscaping* (publication # 6.303), and *FireWise Plant Materials* (publication # 6.305) may be obtained from the State Forest Service district office and are also available on the state forest service website at: http://csfs.colostate.edu/pages/wf-publications.html.
2. If you have firewood, it should be stacked a minimum of 30 feet away from and uphill from structures.
3. If you have grass keep it well watered and mowed. Do not have shrubs directly beneath windows or next to foundation vents. Trim back tree limbs that overhang the house or encroach on the chimney area. If you have a favorite tree next to the home consider it part of the structure and remove nearby trees to avoid fire spreading into the home and tree (10-15 feet crown separation if at all possible). Rock landscaping is attractive. Use rock or bare earth landscaping beneath decks and do not use the area for storage.
4. Use non-combustible roofing material and non-combustible siding (Class C or better), and spark arresters on chimneys. Clean combustible debris from roofs and gutters frequently to prevent woody debris from accumulating. Even when noncombustible roofing materials are used, burning debris on a roof can conduct heat to the wooden sub roof underneath. Some counties now restrict wood roofs or require specific classifications of roofing material. See additional structural mitigation actions on P.35.

Importance of Homeowner Participation; an individual's actions are effective even when neighbors do not participate. It is certainly true, however, that the effectiveness of mitigation is enhanced as more landowners join the effort.

Many communities organize volunteer days to assist elderly and handicapped neighbors. These events are opportunities for community bonding, and help develop a commitment to mitigation within the community.

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Guidelines for Wildfire Resistant Landscaping in an Urban Setting

Safe Spacing
Remove lower tree limbs to reduce ladder fuels.

Keep all fire-prone trees 10 feet from roof.

Keep all trees 10 feet from chimney.

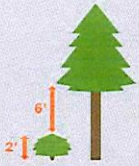
Minimize the fuel load of trees and shrubs with proper spacing.

Good Plants
Plant moisture-rich succulents, annuals and perennials near your home.

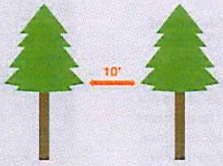
Fuel Free Zone
Keep fire-prone vegetation and dry debris 3-5 feet from your house.

Safe Groundcover
Use rock or pebbles instead of bark or mulch next to your home.

Fuel Break
Establish a fuel break in the vegetation in your yard by installing rock or concrete pathways.



Minimum Vertical Clearance
3 x the height of the shrub to the lowest branches of the tree



Tree Spacing
Flat to mild slope
10-foot spacing

Mile to moderate slope
20-foot spacing

Moderate to steep slope
30-foot spacing

Shrub Spacing
Flat to mild slope
2 x the height of the shrub

Mild to moderate slope
4 x the height of the shrub

Keep it lean, clean and green.
Keep all vegetation watered, free of dead material, and maintained.

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Recommended Treatment Priority Zone 7:
Virginia Canyon

The CCC CWPP evaluated the Virginia Canyon area north of the City of Idaho Springs as having a wildfire danger of High.

The area's primary access "…is a rough gravel road varying between single to 1½ lane with a turnaround at the intersection of Two Brothers and Virginia Canyon Roads." Housing density is low.

Mitigation Unit
A mitigation unit is recommended just east of Virginia Canyon Road and just north of the City of Idaho Springs (over a ridge north of Wall St. It is on a north facing slope (south facing slopes do not have dense vegetation on this area).

The mitigation unit encompasses approximately 10 acres. In areas of fuel break mitigation vegetation treatments include: reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. **The CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities,* (Dennis, not dated) and *Lodgepole Pine Management Guidelines for Land Managers in the Wildland -Urban Interface* (Dennis et al) should be followed.**

As noted in those publications (see pp.36-38),"…crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A minimum 10-foot spacing between the edges of tree crowns is recommended on level ground. "The minimum recommended fuelbreak width is approximately 300 feet for level ground. Since fire activity intensifies as slope increases, the overall fuelbreak width must also increase… Widths are also increased when severe topographic conditions are encountered. Guidelines for fuelbreak widths on slopes are given on page 37.

Small, isolated groups of trees may be retained for visual diversity. Increase crown spacing around any groups of trees for aesthetic reasons and to reduce fire intensities and torching potential." Actual distances involved would be determined by a professional forester.

Dead, diseased, weakened, and malformed conifer trees would be removed. The harvesting of conifer trees would occur as necessary to achieve the desired density. Conifer trees would be limbed up approximately 10 feet from the ground and limbs removed. Ladder fuels, such as small trees and shrubs, are thinned out so that fire will not easily burn from the ground into the forest canopy.

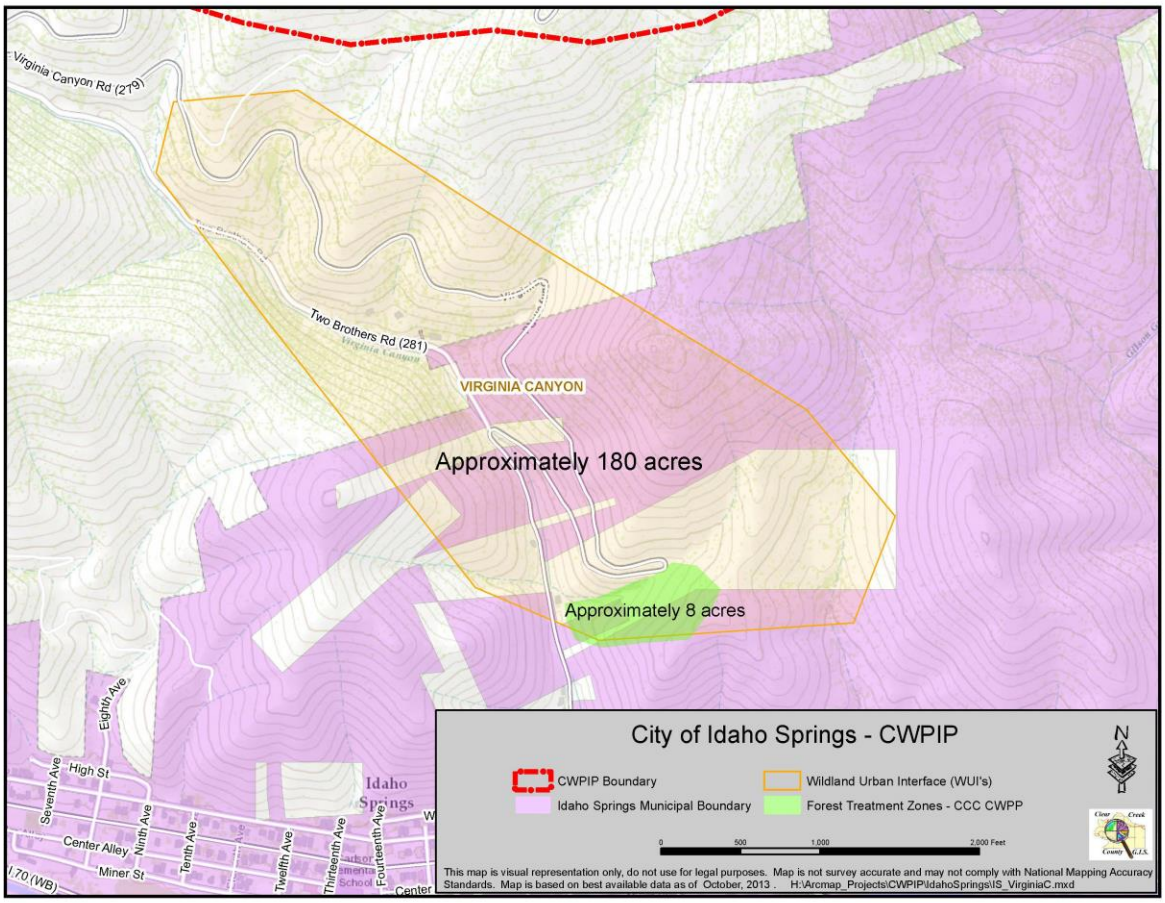
Roadsides
The CCC CWPP states: "Develop and maintain shaded fuelbreaks along all forested sections of the primary county evacuation route." The route is not heavily forested near Idaho Springs nor along much of its length. A study should be accomplished by the CCC Fire Authority to determine where mitigation is needed. Where needed, treatment would be in accordance with:

- The USFS standard for roadside mitigation/hazard tree removal: "… implement hazard tree removal activities within a distance equal to 110% of the height of the tallest hazard tree from the edge of: 1) National Forest System (NFS) roads open to motorized travel

(maintenance levels two through five); 2) federal, state, county, or other permitted roads…" In this case the height of the tallest tree within the treatment zone would be used.

- The Colorado State Forest Service *"Fuelbreak Guidelines for Forested Subdivisions and Communities"* by Frank Dennis

All treatment would be primarily hand thinning with some mechanical, and with slash pile and treatment of material or some use of wood for biomass business purposes. Cost would be approximately $2000/acre. **The community team should consult with the Golden District of the Colorado State Forest Service for advice on getting an up-to-date cost estimate when it begins the process to accomplish this project.**



Virginia Canyon Mitigation

Recommended Treatment Priority Zone 8:
Power Transmission and Distribution Lines
Mitigation Actions

The Idaho Springs area hosts transmission and distribution lines managed by Xcel Energy. The CWPIP team endorses mitigation actions and schedules currently set by Xcel Energy and recommend the continued maintenance of industry standards to provide protection for both electrical distribution and mitigation on potential wildfire affects as they might impact on the Idaho Springs area.

The power and communication companies should be consulted to keep up to date on any changes in the standards. The objective is to maintain a fire resistant landscape that accommodates power and communication transmission needs plus the protection of related infrastructure.

Following are selected portions of Excel Energy's maintenance statement:

"Public Service Company of Colorado (PSCo) is wholly owned by Xcel Energy Inc. and is a*n* Xcel Energy company.

"PSCo owns and maintains high voltage transmission lines that traverse east to west through the Idaho Springs area adjacent to I-70.

"PSCo performs routine vegetation management activities on a five year maintenance cycle supplemented by hazard tree patrols and hazard tree mitigation… typical work…utilizes manual foot crews with chainsaws… Vegetation that encroaches within required conductor clearances will be mitigated. PSCo also mitigates vegetation that could encroach…between scheduled routine maintenance cycles… Surface fuel loads near structures and poles may be reduced. The right-of-way width is approximately 100', 50' to each side of center line, any trees identified by limited visual inspection that exhibit biological or environmental factors creating an unacceptable risk of failing and impacting electrical conductors and are located outside of this approximate right-of-way width will also be mitigated.

"…declining forest health and changing climatic conditions have escalated the severity of wildfires throughout forested lands in Colorado. PSCO is actively working with property owners on lands adjacent to these transmission line structures in effort to create defensible space around these structures. This vegetation management will improve forest health generally, and help to better minimize the damaging effects of wildfires passing near these power lines…

"Dependent upon structure material, Wood, steel or Aluminum, material specific radial treatment zones have been developed to reduce the threat of surface fires impact on these structures by reducing surface fuel loads to less than 10 tons per acre and by reducing the threat of crown fire spread by thinning trees to less than 40 percent crown closure. Much of this work is located outside of right-of-way and requires agreement from adjacent property owners whether private property, County or United States Forest service…Public Service Company of Colorado has entered into a Memorandum of Understanding and Collection Agreement with the United States

Forest Service to facilitate these vegetation treatments on Forest Service lands thereby reducing the risks of passing wildfires to these transmission structures.

"PSCO also owns and operates electric distribution lines located throughout the Idaho Springs CWPIP…

"PSCo performs routine vegetation management activities on a five year maintenance cycle supplemented by hazard tree patrols and hazard tree mitigation…

"PSCo's clearance guidelines for electric distribution lines are based on local tree growth rates, specific to individual trees on specific circuits. Specific clearances are determined based on species growth rates, as well as line voltage, construction of facilities, electric reliability performance and other factors. Therefore, each individual tree needs to be assessed to determine adequate clearance…"

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Section 6: PLAN IMPLEMENTATION AND FOLLOW UP

Creating and implementing this CWPIP has the potential to significantly reduce possible wildfire effects. This will require the efforts of a committed CWPIP team with the assistance and cooperation of adjacent agencies (County, State and Federal), local interest groups, and the citizens of the area. The effectiveness of this plan will be the result of actions taken over time; ***completion of the plan is only the beginning.***

Maintenance and administration of the Community Wildfire Protection Implementation Plan are critical. To again quote the CCC CWPP, *"The most effective means to initiate local action is through community education and public outreach. An annual community meeting in the spring can spur action on the part of neighborhoods and individuals. This can be a forum for presentations by experts in the field and allow for coordination of "cleanup" efforts within the community. Firewise materials and postings should be made available to the public at each fire station, post office, HOA, and school on a regular basis. A disposal method for yard waste should be coordinated every spring. This may be coordinated with community spring cleanup activities and may include the coordination of a central disposal site, mobile chipping services, or a hauling service. Another example would be the scheduling of an annual "Slash Day,"… for collection and disposal of slash created by projects and individual action.."*

Accomplishing property defensible space, retrofit of structures to defensible standards, fuels mitigation projects, and completing such objectives as escape routes, additional water sources, and other goals require time, funding and resources. Ongoing community education and demonstration events are needed to demonstrate the necessity of taking personal action. Grant funding, contract crews, and volunteer projects can be spread out over a number of years.

Maintenance of the Plan
The CWPIP is meant to be a "living document" which is updated annually to pursue priority concerns in wildfire hazard mitigation throughout the Idaho Springs Area. **The overall goal of maintaining the CWPIP is accomplished through:**
1) Ongoing monitoring of plan accomplishments and effectiveness;
2) Adjusting the plan to account for changes in wildfire hazard conditions, response capabilities, technologies and other circumstances;
3) Setting goals and selecting projects for the coming year;
4) Seeking funding and other project assistance; and
5) Facilitating community project days and other events.

The CWPIP team should be an ongoing team as long as the community and planning efforts have need of such direction.
The team should operate in collaboration with the Clear Creek Fire Authority. The CWPIP team should sustain itself through recruitment of new members as needed, and selection of a team chair person from among its members. If direction or assistance is needed to maintain operations the team chair should consult with the Fire Authority Chief, the Clear Creek County Office of Emergency Management, and the State Forest Service Golden District office to assist with evaluation of the continuing need and assistance in reconstituting a CWPIP management team.

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The Idaho Springs Area CWPIP committee should establish guidelines for representation and ongoing operation at its first meeting following county and state acceptance of this plan. Following are some guidelines to be considered by the team:

The composition of the CWPIP team should retain professional contact with the included areas in and around Idaho Springs, Clear Creek County, the Clear Creek Fire Authority, Colorado State Forest Service, and the US Forest Service. While these professional groups may not be available for every meeting they should be invited and consulted on a regular basis. Representation from the above noted area neighborhoods are very important and the team should strive for membership of at least two of the three neighborhoods at any one time. This representation should be on a rotating basis to involve different areas and reduce the impact on participants.

Team meetings should be held at least quarterly (it may be desirable to meet more often as summer approaches each year) to review plan goals, actions and public response. Each year the CWPIP team should conduct a performance review to evaluate accomplishments and problems over the past year. The team should also consider any proposed changes to the CWPIP for the upcoming year and select new or reselect ongoing project goals. The team should consult with the State Forest Service, USFS, the county and fire authority, and reach out to neighborhood stakeholders during plan review and project development. Timing should be guided by grant submission dates.

The overall CWPIP evaluation, recommended changes, and upcoming project goals should be presented to the public through various media: community meetings; local informational outreach methods, Community Wildfire days; and on county and fire department websites.

The CWPIP plan and team contact list should be available on the Idaho Springs city website, Clear Creek County website, and the CCC Fire Authority website so the public can offer ideas at any time for the team to consider.

The CWPIP team, in conjunction with the Fire Authority, the county and/or other groups, should organize or take part in an annual community open house each spring to keep the public continuously aware of healthy forest restoration and wildfire mitigation needs and opportunities.

The team should develop or participate in demonstration days, chipping days, and other opportunities in area neighborhoods to showcase projects, techniques, and new ideas. Such events contribute greatly to public education and encourage people to become involved.

The CWPIP team should follow up on completed projects, using a monitoring and evaluation format which addresses the following issues:
1) Implementation: Track the CWPP project(s) as laid-out for the year and assess the success level of execution;
2) Execution of Project: What issues occurred that either aided or impeded the project?
3) Maintenance Needs and Monitoring: Evaluates, determines and prioritizes areas that have been treated in the past, but are in need of maintenance treatments to maintain effectiveness as

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originally intended. Lessons learned from monitoring and data collection will be useful for modifying project plans to better meet CWPIP goals and objectives.

Outreach to Subdivisions and Neighborhoods: Neighborhood Ambassadors

The CWPIP team should reach out to its various neighborhoods. The team should consider utilizing an approach similar to the **Neighborhood Ambassador Program** in effect in southwest Colorado. This involves reaching out to neighborhoods to recruit an ambassador from each area that will interact with the team and mobilize their neighborhood to improve wildfire readiness and communicate CWPIP actions.

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Section 7: APPENDICES

APPENDIX A: Publications and websites

APPENDIX B: Appendix from the Clear Creek County CWPP which shows each community in the county and how they rated when evaluated for wildfire risk and hazard.

APPENDIX C: Tips on insurance coverage from a *United Policyholders* handout.

APPENDIX D: Wildfire Action Planning - The Ready, Set, Go! Program (RSG) and Code Red

APPENDIX E: Idaho Springs Three Mile Plan

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APPENDIX A

Publications and websites

Following is a listing of publications available from the Colorado State Forest Service which provide guidance on a range of mitigation activities which will aid communities in lessening the impact of wildfire. Also listed are several websites which contain information useful in mitigation efforts. *Idaho springs area residents are encouraged to view these sites which contain a great amount of useful information and action items which can assist in protecting properties from the effects of wildfire.*

Publications

The following publications can be viewed on the State Forest Service website (or linked directly from below). You may also be able obtain some copies from the Golden District office of the State Forest Service.

General Resources :

Wildfire Policy in Transition: Where There's Smoke, There's... Mirrors

Presentation on Wildfire Policy in Transition

Resources for Homeowners & Landowners:

Clear Creek County CWPP and Evergreen Fire Rescue CWPP:

http://csfs.colostate.edu/pages/CommunityWildfireProtectionPlans.html (go down list by county to the plan

Creating Wildfire Defensible Zones:

http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf.

Fire-Resistant Landscaping

Forest Home Fire Safety

FireWise Plant Materials

Grass Seed Mixes to Reduce Wildfire Hazard

Are You FireWise? Notebook

Home Fire Protection

Living with Fire

Wildfire and Insurance: http://csfs.colostate.edu/pdfs/2011_co_wildfire_brochure.pdf

Residential Fire Resistant Paint:

FireWise Construction:

Firewise Construction: Design and Materials by Peter Slack

Decks

Roofing Materials

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Siding
Windows and Glass

Resources for Communities:
Fuelbreak Guidelines for Forested Subdivisions & Communities
Preparing a Community Wildfire Protection Plan - Handbook
Community Guide to Preparing & Implementing a CWPP — 2008
Community Wildfire Protection Plan Evaluation Guide
CWPP Minimum Standards REVISED 2009

Post-Fire:
Vegetative Recovery after Wildfire
Soil Erosion Control after Wildfire
Insects and Diseases Associated with Forest Fires
"After the Fire" Safety Tips Factsheet

Websites

Colorado State Forest Service: http://csfs.colostate.edu/
Clear Creek Fire Authority: http://www.clearcreekfire.com
Clear Creek County: http://www.co.clear-creek.co.us/
Evergreen Fire Rescue: http://www.evergreenfirerescue.com

Grant Opportunities:
CO State Forest Service Land Owner & Assistance Programs:
http://www.csfs.colostate.edu/pdfs/Landowner-Assistance-Programs-rev112610.pdf
Firewise: http://www.firewise.org/

Agency/Front Range Group/Healthy Forest Restoration Act (HFRA)
Arapahoe National Forest: http://www.fs.fed.us/r2/arnf/index.shtml
Front Range Roundtable: http://frontrangeroundtable.org/Home_Page.php
Healthy Forest Restoration Act –background and information:
http://en.wikipedia.org/wiki/Healthy_Forests_Initiative
Healthy Forest Restoration Act – official website: http://www.forestsandrangelands.gov/

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APPENDIX B

Below is the Appendix from the Clear Creek County CWPP which shows each community in the county and how they rated when evaluated for wildfire hazard.

Community Survey Summaries and Hazard Ratings

	Means of Access					Vegetation		Topography		Other Factors				Construction			Fire Protection				
CLEAR CREEK COUNTY WUI	Ingress/Egress (7)	Road Width (4)	Road Condition (7)	Fire Service Access (5)	Street Signs/Address (5)	Vegetation/Fuels (25)	Defensible Space (25)	Slope w/in 300 ft of structure (10)	Topography affecting fire behavior (5)	Ignition Potential (5)	Fire Weather Potential (5)	Density of Structures (5)	Utilities (5)	Roofing (25)	Construction (15)	Set-back from slope >30% (5)	Water Availability (10)	Emergency Resources (3)	Rural Fire Protection (5)	Score	Survey Hazard Rating
Alvarado	2	2	0	2	1	7	7	4	2	3	2	1	5	3	15	1	5	1	4	67	MODERATE
Bakerville	0	2	2	5	3	9	22	1	3	4	2	2	5	3	15	1	5	1	5	90	HIGH
Bard Creek	7	2	2	3	0	10	10	2	4	5	2	3	5	3	15	1	5	3	5	87	HIGH
Beaver Brook	7	3	6	5	5	10	21	7	5	4	3	0	5	3	15	4	5	3	5	116	EXTREME
Bendemeer Valley, etc. EFPD	0	3	4	4	0	8	21	3	4	4	4	2	5	3	14	2	5	3	5	94	HIGH
Berthoud Falls	1	3	2	4	5	10	15	4	3	5	2	4	1	2	15	1	5	3	5	90	HIGH
Black Eagle	3	4	6	5	4	5	7	7	4	5	3	1	5	5	15	4	5	3	5	96	HIGH
Blue Valley	2	3	5	3	3	15	18	8	5	3	3	3	5	3	15	5	5	3	5	112	EXTREME
Brook Forest EFPD	7	4	5	5	2	18	20	5	5	4	3	3	5	3	15	4	5	1	5	119	EXTREME
Chicago Creek	7	3	2	5	0	8	20	7	5	3	2	4	5	3	15	3	5	3	5	105	HIGH
Echo Hills EFPD	7	3	4	5	3	18	21	7	5	4	3	3	5	4	15	4	5	3	5	124	EXTREME
Empire	1	1	1	1	1	5	1	5	2	4	2	5	3	3	15	1	0	3	4	58	MODERATE
Evergreen West EFPD	3	2	2	3	0	13	20	7	5	4	4	2	5	10	13	4	3	3	5	108	HIGH
Fall River	7	2	2	5	0	10	10	8	5	4	2	4	5	3	15	5	5	3	5	100	HIGH
Floyd Hill EFPD	7	3	4	5	3	12	21	7	5	3	3	4	5	3	13	5	5	3	4	115	EXTREME
Floyd/Saddlback	7	1	5	4	3	12	20	7	5	5	3	3	5	3	15	5	5	3	4	115	EXTREME
French Springs EFPD	7	2	2	4	0	10	21	3	3	4	4	2	5	2	14	2	5	3	5	98	HIGH
Georgetown	3	2	1	1	1	7	1	3	2	4	2	5	3	3	15	1	0	1	4	59	MODERATE
Hefferman Gulch	7	4	5	5	4	10	25	7	5	3	2	4	5	3	15	4	5	3	5	121	EXTREME
Henderson Mine	7	0	2	0	0	18	1	8	5	2	2	0	0	0	0	1	1	1	1	49	MODERATE
Herman Gulch	7	3	4	5	3	10	25	7	4	5	2	3	5	3	15	5	5	3	5	119	EXTREME
Hidden Valley	7	2	5	2	2	8	18	3	4	5	3	4	3	3	15	2	5	1	5	97	HIGH
Idaho Springs	1	1	2	1	1	5	1	2	2	4	3	5	3	3	15	1	0	1	4	55	MODERATE
Little Bear	5	3	5	4	4	10	10	8	5	3	3	1	5	3	15	5	5	3	5	102	HIGH
Lower 103	1	0	2	0	2	7	12	4	3	4	3	5	5	7	15	5	5	1	4	85	HIGH
Lower Fall River	1	3	2	4	3	7	12	4	4	5	3	5	5	2	15	4	5	1	5	90	HIGH
Lower Mill Creek	7	2	2	5	3	8	12	8	4	5	3	4	5	2	13	4	5	1	5	98	HIGH
Lower Soda Creek	1	0	2	2	2	6	6	7	2	3	3	4	3	3	13	2	5	1	5	70	MODERATE
Middle 103	1	0	0	0	2	6	15	8	4	3	3	5	5	3	15	5	5	2	5	87	HIGH
Montane Park	7	4	2	5	3	9	20	7	5	5	3	4	1	3	13	4	1	1	5	102	HIGH
Morrison Lane	7	2	2	5	5	10	25	2	2	5	2	1	3	1	15	3	5	3	5	103	HIGH
Peaceful Valley	7	3	5	3	5	7	18	1	3	4	2	1	5	3	15	1	5	3	5	96	HIGH
Pine Slope	1	3	4	3	3	6	12	4	2	4	3	4	3	3	15	2	5	1	5	83	HIGH
Pine Valley Estates EFPD	0	3	4	4	4	9	15	3	2	4	4	3	5	3	15	2	5	3	5	93	HIGH
Silver Lakes	0	2	2	3	2	6	8	2	2	3	3	5	3	3	12	2	1	1	4	64	MODERATE
Silver Plume	1	3	2	2	1	5	3	3	2	5	2	5	3	3	15	1	0	1	4	61	MODERATE
Silver Valley	0	2	2	2	1	10	20	4	2	5	2	5	1	2	15	2	5	1	5	86	HIGH
Soda Creek	7	3	5	5	3	10	9	5	3	3	3	1	5	5	14	4	5	2	5	97	HIGH
South Spring	5	3	5	5	3	12	14	7	5	5	3	1	5	10	15	4	5	2	5	114	EXTREME
Squaw Mountain	7	2	5	4	4	14	18	8	5	3	3	1	5	3	14	5	5	3	5	114	EXTREME
Stevens Gulch	7	4	7	5	4	18	15	8	5	2	2	0	5	3	15	2	5	3	5	115	EXTREME
St Marys/Alice	7	3	5	5	5	17	15	8	5	2	2	4	5	3	15	5	10	3	4	123	EXTREME
Trail Creek	7	3	5	5	3	12	20	7	5	5	3	1	5	2	15	4	5	3	5	115	EXTREME
Upper Fall River	7	2	2	2	3	8	12	3	4	3	2	2	5	3	15	2	5	3	5	88	HIGH
Upper Mill Creek	7	3	5	3	1	10	20	5	5	3	2	5	5	3	15	3	5	3	5	108	HIGH
Ute Creek	7	3	5	5	2	10	18	6	5	4	3	1	5	2	15	5	5	3	5	109	HIGH
Virginia Canyon	1	2	2	1	2	6	10	8	5	5	3	3	5	3	12	5	5	1	5	84	HIGH
York Gulch	3	3	5	5	3	8	12	5	5	4	3	1	5	3	10	4	5	3	5	92	HIGH

APPENDIX C

The following insurance tips are paraphrased from a ***United Policyholders*** handout and are good tips for home and business owners in the wildland-urban interface. Insurance companies are well aware of the CWPP and Firewise efforts and are taking more in depth looks at how home owners are protecting and mitigating their properties.

Preparedness Tips from the Trenches

What do disaster victims wish they'd known about insurance before they had a loss?

- How can I avoid the most common gaps in coverage?
- What helps fire fighters save homes during wildfires and after earthquakes?
- Insurance money – not charitable or government aid makes the biggest difference in people's ability to rebuild and recover after a disaster.
    - FEMA money is needs-based and the maximum grant is $25k. SBA loans take time and have to be repaid. Charitable aid generally covers basic needs – not the cost of rebuilding a home.
- Have the right kind and amount of insurance on your property:
    - Avoid gaps in coverage. If money's tight, raise your deductible to keep premium costs down.
    - In most cases, the true replacement value of your property gets underestimated at the point of sale and as years goes by. Read UP's Home Insurance Buying Tips at www.uphelp.org to avoid this problem. Confirm and keep records of insurance sales promises. Ask your insurer if you're covered for flooding, earthquakes, and a total loss from wildfire. After a 2007 wildfire in San Diego County, 75% of the victims found themselves underinsured by an average of more than $100,000.
    - Shop around to find which company offers the best discounts for "mitigation" and/or retrofitting". If you install a seismic shut-off valve on your gas line, a premium discount will cover most of the cost.
    - Panels won't cost a fortune but will make your home safer and more insurable.
    - If you don't have insurance coverage for flooding and earthquakes, consider buying it. Earth movement, earthquakes and landslides are not covered by most homeowner policies. You have to buy this coverage separately.
    - Complete as much of the UP Home Inventory as you can, then store the records off site in a safe place.
    - Ask your local Fire Department if they'll inspect and certify for an insurance company that you've cleared brush adequately.
- Avoid letting your insurance lapse.
    - Get help if your insurer drops you and you can't find replacement coverage.
    - Read "Dropped by your insurer?" at www.uphelp.org/pdfs/Wheretogoforhelp.pdf

Have an evacuation plan that includes "grab and go" or off-site access to important documents.

DRAFT

The #1 thing that helps fire fighters save homes is brush clearance. Clean out gutters and roof drains regularly. Install screens on all your roof vents to keep embers from flying in. Install spark arrestors in chimneys and get the chimney professionally cleaned periodically.

Keep a copy of your policy in a safe place away from your home and better yet, scan the complete document onto your computer or onto a UP Roadmap to Preparedness Flash Drive.

information presented in this publication is for general informational purposes, and should not be taken as legal advice. If you have a specific legal issue or problem, United Policyholders recommends that you consult with an attorney. Guidance on hiring professional help can be found in the "Find Help" section of http://www.uphelp.org. United Policyholders does not sell insurance or certify, endorse or warrant any of the insurance products, vendors or professionals identified at our website. United Policyholders respects and protects the privacy of all individuals who communicate with us. We do not sell or share our membership or mailing lists.

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APPENDIX D
Wildfire Action Planning

Code Red
The Ready, Set, Go! Program (RSG): www.wildlandfireRSG.org

CodeRed™: http://www.clearcreeksheriff.us/
Why the county would be calling you in an emergency: The Clear Creek County Sheriff's Office Communications Center has contracted for "CodeRed™" high-speed telephone emergency notification services sometimes referred to as "Reverse 911® ". The CodeRed system allows emergency dispatchers the ability to deliver public safety messages to targeted areas or the entire county at a rate of up to 60,000 calls per hour. This service includes those residents and businesses in the municipalities of Idaho Springs, Empire, Georgetown and Silver Plume as well as the unincorporated area of the county.

These calls warn and advise citizens of emergency and dangerous situations. Multiple phones within a designated area can be called simultaneously to warn residents of flood, wildfire, tornadoes, chemical spills, or dangerous suspects.

If you receive a CodeRed call, the voice on the line will let you know it's a message from the Sheriff's Office. Also, your caller ID will display an 800 or 866 number. The CodeRed system works with phones that have a TDD line (for the hearing impaired). If you have a telephone zapper used to block out telemarketers, or if your phone is blocked to unknown callers, you will not receive calls until you "allow" an incoming call from CodeRed.

Opt In to CodeRed:
The CodeRed system calls numbers from two databases. One is the county's 911 database, with all listed and unlisted land lines. If you have a land line, it is automatically included in this database.

The second is a new database of mobile phone and VoIP numbers, established in 2009, whose owners have opted in to receive the calls. If you don't have a traditional land line phone, or would like to receive a cell phone call in addition to the call on your land line phone, consider registering for this free service. **To register go to the Clear Creek County Sheriff's Office website**: http://www.clearcreeksheriff.us/

Ready-Set-Go!
The RSG Program is a three step process that can significantly increase the safety of residents and the safety of responding firefighters. The RSG Program provides the implementation guidance; background knowledge; and presentation tools to assist fire departments in delivering the program message.

It is easy to remember and is easy to implement:

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• **Ready** – Preparing for the Fire Threat: Be Ready, Be Firewise. Take personal responsibility and prepare long before the threat of a wildfire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home with fire-safe construction measures. Assemble emergency supplies and belongings in a safe spot. Make sure all residents residing within the home are on the same page, plan escape routes. For more information about how to be Ready for wildland fires, go to Firewise.org.

• **Set** – Situational Awareness When a Fire Starts: Pack your vehicle with your emergency items. Stay aware of the latest news from local media and your local fire department for updated information on the fire.

• **Go** – Leave early! Comply with any evacuation orders and follow evacuation plans early! Your Action Plan makes you prepared and firefighters are now able to maneuver and ensure you and your family's safety.

Evacuation Levels
There are three levels of evacuation criteria that will be communicated to the public in an emergency resulting in more direct communications between emergency responders in the field, communication specialists in the dispatch center and citizens living in the area.
Each level can be used independently or in any specific order the incident calls for:

Level 1 Evacuation - means be ready. Residents should be aware of the danger that exists in their area. You should make preparation and be ready to leave, and then monitor local-media outlets. Residents with special needs (such as the elderly or those with a susceptibility to breathing problems) are advised to evacuate. People with livestock or pets should consider moving them out of the area. Evacuations at this time are voluntary, but if you have concerns, evacuate now.

Level 2 Evacuation - means leave soon. There is significant potential of danger in your area, and residents should relocate to a shelter or with family/friends outside the affected area. You need to leave as soon as possible.

Level 3 Evacuation - means leave immediately. Danger in your area is current and imminent. There is no time to gather belongings. Leave immediately.

The RSG Program provides tools through its website, www.wildlandfireRSG.org for fire departments that join the program to better understand preparedness techniques; help in identifying local partners and audiences; useful outreach models and presentation tools; and general background on wildland fire activity.

Following is a Ready, Set, Go brochure designed specifically for this area by Einer Jensen, formerly with CCC Fire Authority and now with South Metro. It provides very good information for home owners

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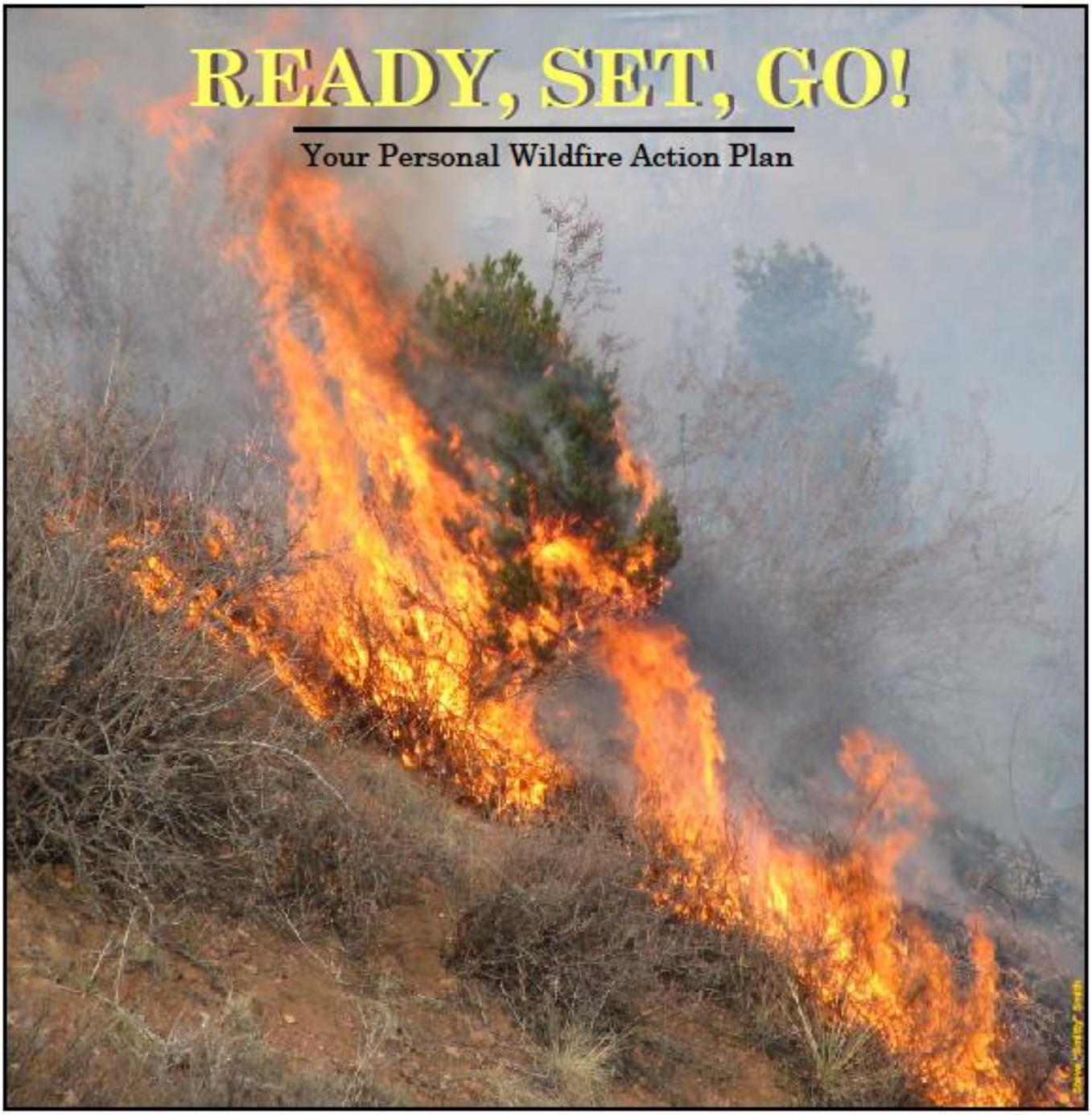
READY, SET, GO!

Your Personal Wildfire Action Plan



READY, SET, GO!

Wildfire Action Plan

Saving Lives and Property
through Advance Planning

The fire season is now a reality throughout the year in Colorado, which means that both firefighters and residents have to be on heightened alert for the threat of wildfire at all times.

Colorado's firefighters take every precaution to help protect you and your property from a wildfire. Residents need to do the same. Successfully preparing for a wildfire requires you to take personal responsibility for protecting yourself, your family and your property. During a major wildfire, there simply will not be enough fire engines or firefighters to defend every home, so residents must become part of the solution.

If your home borders or sits with a mile or two of a natural area, what firefighters call the Wildland Urban Interface, you are at risk from a wildfire. And, if you live within one mile of a natural area, you live in the Ember Zone. Homes in the Ember Zone are at risk from wind-driven embers from a wildfire. Recent fires across the nation have resulted in entire neighborhoods being destroyed by fires started by embers, not the wildfire itself.

This publication will help guide you through the process of making your home resistant to wildfires and your family ready to leave early and safely. We call this process, "Ready, Set, Go!"

You will learn about the Ember Zone and how to retrofit your home with ignition resistive features. We'll show you the importance of having defensible space around your home and the preparations you need to make so you can leave early, evacuating well ahead of the fire.

Fire is, and always has been, a natural part of the beautiful area where we've chosen to live. Wildfires, fueled by a build-up of dry vegetation and driven by hot, dry winds, are extremely dangerous and almost impossible to control. Many residents have built their homes and landscaped without fully understanding the impact a fire could have on them. This publication will help you prepare your home so you can leave early, confident that you've done everything you reasonably can to protect your home.

It's not a question of if, but when, the next wildfire will occur. That's why the most important person protecting your life and property is you. With advance planning and preparation, you can dramatically increase your safety and the survivability of your property.

Now, Get Ready, Get Set, Go!

This publication was prepared by the Fire & Life Safety Educators of Colorado, Fire Marshals Association of Colorado and Colorado State Fire Chiefs Association so that Colorado's fire departments and life safety professionals could have a common resource for educating their citizens about wildfire prevention, mitigation and reaction. Many agencies will supplement this information with programming geared specifically for their communities.

Colorado: Ready, Set, Go!
also is supported by:

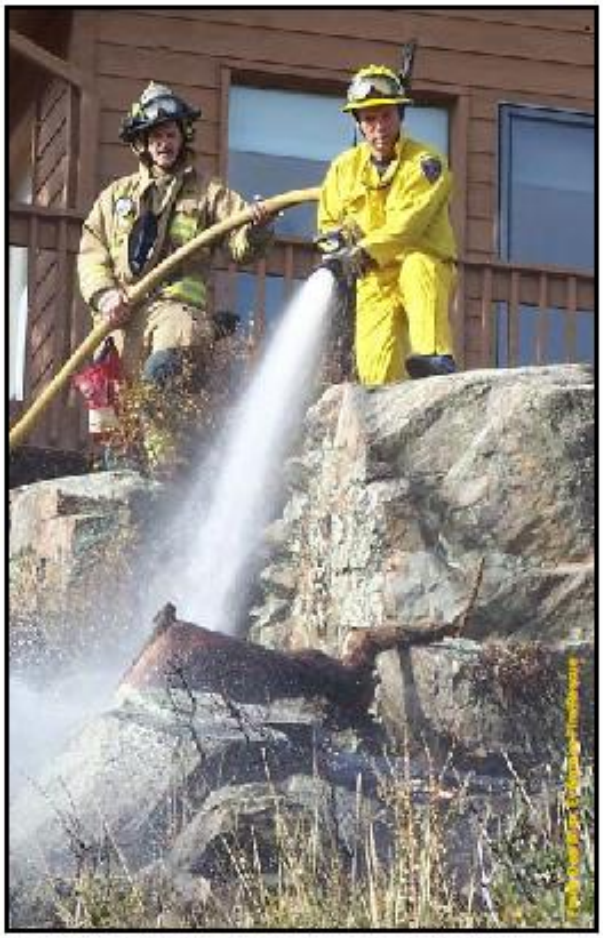
Pikes Peak Wildfire Prevention Partners

Living in the Wildland Urban Interface and the Ember Zone

Ready, Set, Go! begins with a house that firefighters can defend.

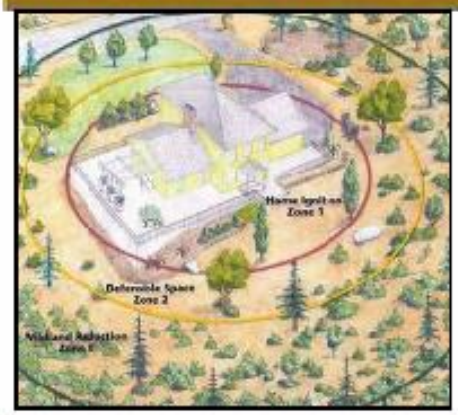
Defensible space works!

If you live next to a natural area, the Wildland Urban Interface, you must provide firefighters with the defensible space they need to protect your home. The buffer zone you create by removing weeds, brush and other vegetation helps to keep the fire away from your home and reduces the risks from flying embers.



A home within one mile of a natural area is in the Ember Zone. Wind-driven embers can attack your home. You and your home must be prepared well before a fire occurs. Ember fires can destroy homes or neighborhoods far from the actual flame front of the wildfire.

What is Defensible Space?



Defensible space is the space between a structure and the wildland area that, under normal conditions, creates a sufficient buffer to slow or halt the spread of a wildfire to the structure. It protects the home from igniting from direct flame, radiant heat and embers. Defensible space is essential for structure survivability during wildfires.

Zone 1

This zone, which consists of an area of 15 feet around the structure, features the most intense modification and treatment. This 15 feet is measured from the outside edge of the home's eaves and any attached structures, such as decks. Limit vegetation within this zone to species on Colorado's FireWise list. Do not plant directly beneath windows or next to foundation vents. Frequently prune and maintain plants in this zone to ensure vigorous growth and a low growth habit. Remove dead branches, stems and leaves.

Do not store firewood or other combustible materials in this area. Enclose or screen decks with metal screening. Extend gravel coverage under the decks. Do not use areas under decks for storage.

If ponderosas, aspens or blue spruces are growing in this zone, consider them part of the structure and extend the distance of the entire defensible space accordingly. Isolate the tree from any other surrounding trees. Prune low-lying branches (ladder fuels that would allow a surface fire to climb into the tree) and any branches that interfere with the roof or are within 10 feet of the chimney. In all other areas, prune all branches of shrubs or trees up to a height of 10 feet above ground (or 1/2 the height, whichever is the least).

Zone 2

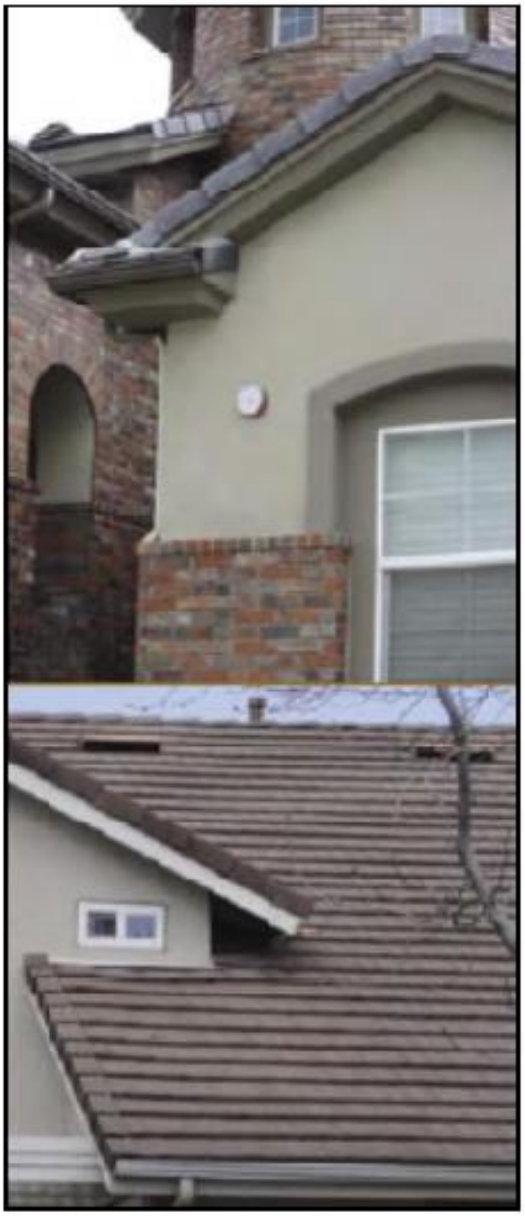
This zone features fuel reduction efforts and serves as a transitional area between Zones 1 and 3. The size of Zone 2 depends on the slope of the ground where the structure is built. Typically, the defensible space should extend *at least* 75 to 125 feet from the structure. Remove stressed, diseased, dead or dying trees and shrubs. Thin and prune the remaining larger trees and shrubs. Be sure to extend thinning along either side of your driveway all the way to your main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing homesite safety and the aesthetics of the property.

Zone 3

This area of traditional forest management extends from the edge of your defensible space to your property boundaries. The healthiest forest is one that has multiple ages, sizes, and species of trees where adequate growing room is maintained over time. Remember to consider the hazards of ladder fuels. A greater number of wildlife trees can remain in Zone 3. Make sure that dead trees pose no threat to power lines or fire access roads.

What is a Hardened Home?

Construction materials and the quality of the defensible space surrounding it are what gives a home the best chance to survive a wildfire. Embers from a wildfire will find the weak link(s) in your home's fire protection scheme: a small, overlooked or seemingly inconsequential factor with enormous potential consequences. However, there are measures you can take to safeguard your home from wildfire. While you may not be able to accomplish all the measures listed below, each will increase your home's, and possibly your family's, safety and survivability during a wildfire.



ROOFING

Roofs are the most vulnerable surface where embers land because they provide nooks for embers to lodge and ignite a fire. Roof valleys, open ends of barrel tiles and rain gutters are all vulnerable to ember accumulation.

EAVES

Embers can gather under open eaves and ignite exposed wood or other combustible material.

VENTS

Embers can enter the attic or other concealed spaces and ignite combustible materials through vents. Vents in eaves and cornices are particularly vulnerable, as are any unscreened vents.

WALLS

Combustible siding or overlapping materials provide surfaces and crevices for embers to nestle and ignite walls.

WINDOWS and DOORS

Embers can enter a home through gaps in doors, including garage doors. Plants or combustible storage near windows can be ignited from embers and generate enough heat to break windows and/or melt combustible frames.

BALCONIES and DECKS

Embers that collect in or on combustible surfaces or the undersides of decks and balconies can ignite that material and enter the home through walls or windows.

MORE

To harden your home further, consider protecting it with a residential fire sprinkler system. In addition to extinguishing or at least containing a fire started by an ember that enters your home, it also protects you and your family throughout the year from any fire that may ignite inside.

Tour a Wildfire Ready Home

Garage: Have a fire extinguisher and tools such as a shovel, rake, bucket and hoe available for fire emergencies.

Install a solid door with self-closing hinges between the garage and living area. Install weather stripping around and under doors to prevent ember intrusion.

Store all combustibles and flammable liquids away from ignition sources.

Vents: Vents on homes are particularly vulnerable to flying embers. All vent openings should be covered with 1/8-inch or smaller mesh. Do not use fiberglass or plastic mesh because those materials can melt and burn.

Attic vents in eaves or cornices should be baffled or otherwise protected to prevent ember intrusion (mesh is not enough).

Deck/Patio: Use heavy timber or non-flammable construction material for decks.

Enclose the underside of balconies and decks with fire-resistant materials to prevent embers from blowing underneath.

Remove combustible items such as baskets, dried flower arrangements and other debris as well as furniture from the deck if a wildfire approaches.

Driveways and Access Roads: Driveways should be designed to allow fire and other emergency vehicles and equipment to reach your home.

Access Roads should have a minimum 10-foot clearance on either side of the traveled section of the roadway and should allow for two-way traffic.

Ensure that all gates open inward and are wide enough to accommodate emergency equipment. Locked gates should be equipped with a Knox Box or similar entry system that can be accessed by emergency responders quickly and safely.

Trim trees and shrubs overhanging the road to a minimum of 15 feet to allow emergency vehicles to pass.

Home Site and Yard: Ensure you have at least a 100-foot radius of defensible space (treated vegetation) around your home. Note that even more treatment may be needed for homes in severe hazard areas. Look beyond what you own to determine the impact a common slope or neighbors' yard will have on your property during a wildfire.

Cut dry weeds and grass before noon when temperatures are cooler to reduce the chance of sparking a fire.

Landscape with fire-resistant plants that have a high moisture content and are low-growing.

Keep woodpiles, propane tanks and combustible materials away from your home and other structures such as garages, barns and sheds.

Ensure that trees are far away from power lines.

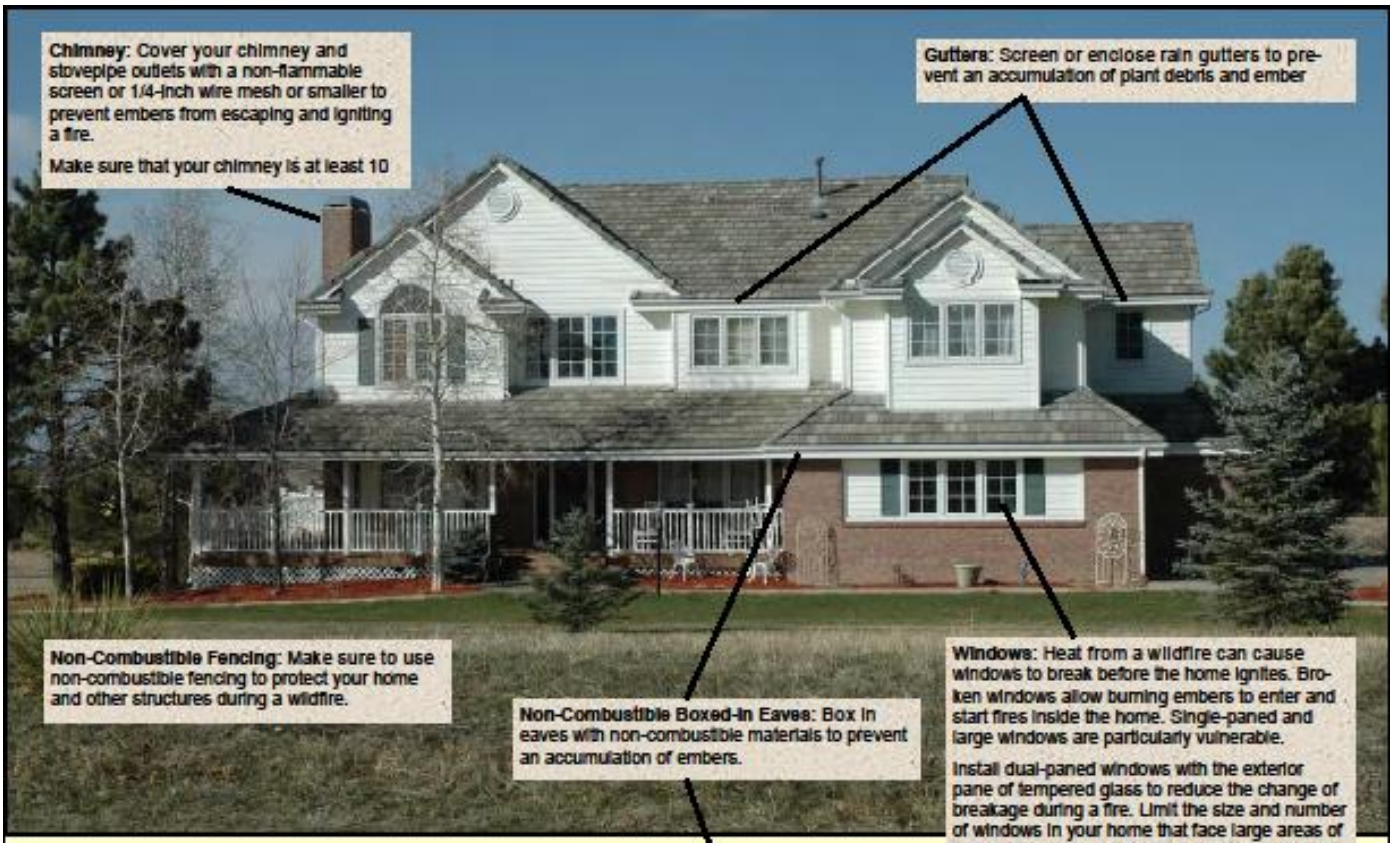
Roof: Your roof is the most vulnerable part of your home because it can easily catch fire from wind-blown embers. Homes with wood-shake or wood shingle roofs are at high risk of being destroyed during a wildfire.

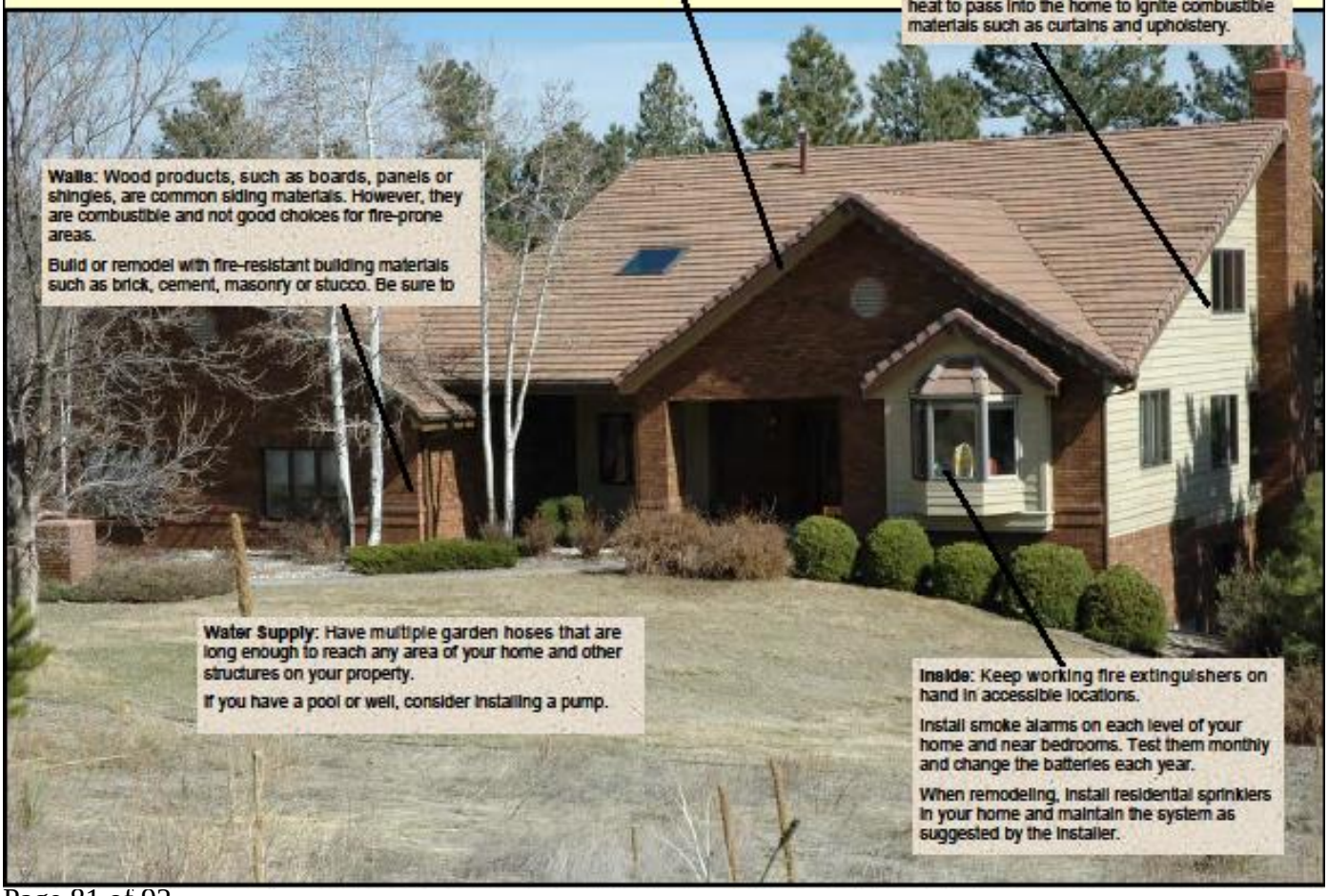
Build your roof or re-roof with fire-resistant materials such as composition, metal or tile. Block any spaces between roof decking and covering to prevent ember intrusion.

Clear pine needles, leaves and other debris from your roof and gutters.

Cut any tree branches within 10 feet of your roof.

Address: Post your address with 4" reflective numbers that can be seen from the road in all weather conditions.


Chimney: Cover your chimney and stovepipe outlets with a non-flammable screen or 1/4-inch wire mesh or smaller to prevent embers from escaping and igniting a fire.
Make sure that your chimney is at least 10
Gutters: Screen or enclose rain gutters to prevent an accumulation of plant debris and ember
Non-Combustible Fencing: Make sure to use non-combustible fencing to protect your home and other structures during a wildfire.
Non-Combustible Boxed-In Eaves: Box in eaves with non-combustible materials to prevent an accumulation of embers.
Windows: Heat from a wildfire can cause windows to break before the home ignites. Broken windows allow burning embers to enter and start fires inside the home. Single-paned and large windows are particularly vulnerable.
Install dual-paned windows with the exterior pane of tempered glass to reduce the change of breakage during a fire. Limit the size and number of windows in your home that face large areas of vegetation because windows also allow radiant heat to pass into the home to ignite combustible materials such as curtains and upholstery.


Walls: Wood products, such as boards, panels or shingles, are common siding materials. However, they are combustible and not good choices for fire-prone areas.
Build or remodel with fire-resistant building materials such as brick, cement, masonry or stucco. Be sure to
Water Supply: Have multiple garden hoses that are long enough to reach any area of your home and other structures on your property.
If you have a pool or well, consider installing a pump.
Inside: Keep working fire extinguishers on hand in accessible locations.
Install smoke alarms on each level of your home and near bedrooms. Test them monthly and change the batteries each year.
When remodeling, install residential sprinklers in your home and maintain the system as suggested by the installer.

READY, SET, GO!

Create Your Own Wildfire Action Plan

Now that you've done everything you can to protect your house, it's time to prepare your family. Your **Wildfire Action Plan** must be prepared with all members of your household well in advance of a fire.

Use these checklists to help you prepare your Wildfire Action Plan. Each family's plan will be different, depending on their situation.

Once you finish your plan, rehearse it regularly with your family and keep it in a safe and accessible place for quick implementation.

GET READY | Prepare Your Family

- ☐ Create a **Family Disaster Plan** that includes meeting locations and communication plans and rehearse it regularly. Include in your plan the evacuation of large animals such as horses.
- ☐ Have fire extinguishers on hand and train your family how to use them.
- ☐ Ensure that your family knows where your gas, electric and water main shut-off controls are and how to use them.
- ☐ Plan several different evacuation routes.
- ☐ Designate an emergency meeting location outside the fire hazard area.
- ☐ Assemble an emergency supply kit as recommended by the American Red Cross.
- ☐ Appoint an out-of-area friend or relative as a point of contact so you can communicate with family members who have relocated.
- ☐ Maintain a list of emergency contact numbers posted near your phone and in your emergency supply kit.
- ☐ Keep an extra emergency supply kit in your car in case you can't get to your home because of fire.
- ☐ Have a portable radio or scanner so you can stay updated on the fire.

GET SET | As the Fire Approaches

- ☐ Evacuate as soon as you are set!
- ☐ Alert family and neighbors.
- ☐ Dress in appropriate clothing (i.e., clothing made from natural fibers, such as cotton, and work boots). Have goggles and a dry bandana or particle mask handy.
- ☐ Ensure that you have your emergency supply kit on hand that includes all necessary items, such as a battery powered radio, spare batteries, emergency contact numbers, and ample drinking water.
- ☐ Stay tuned to your TV or local radio stations for updates, or check the fire department Web site.
- ☐ Remain close to your house, drink plenty of water and keep an eye on your family and pets until you are ready to leave.

INSIDE CHECKLIST

- ☐ Shut all windows and doors, leaving them unlocked.
- ☐ Remove flammable window shades and curtains and close metal shutters.
- ☐ Remove lightweight curtains.
- ☐ Move flammable furniture to the center of the room, away from windows and doors.
- ☐ Shut off gas at the meter. Turn off pilot lights.
- ☐ Leave your lights on so firefighters can see your house under smoky conditions.
- ☐ Shut off the air conditioning.

OUTSIDE CHECKLIST

- ☐ Gather up flammable items from the exterior of the house and bring them inside (e.g., patio furniture, children's toys, door mats, etc.) or place them in your pool.
- ☐ Turn off propane tanks.
- ☐ Don't leave sprinklers on or water running - they can waste critical water pressure.
- ☐ Leave exterior lights on.
- ☐ Back your car into the driveway. Shut doors and roll up windows.
- ☐ Have a ladder available.
- ☐ Patrol your property and extinguish all small fires until you leave.
- ☐ Seal attic and ground vents with pre-cut plywood or commercial seals if time permits.

IF YOU ARE TRAPPED: SURVIVAL TIPS

- ☐ Shelter away from outside walls.
- ☐ Bring garden hoses inside house so embers don't destroy them.
- ☐ Patrol inside your home for spot fires and extinguish them.
- ☐ Wear long sleeves and long pants made of natural fibers such as cotton.
- ☐ Stay hydrated.
- ☐ Ensure you can exit the home if it catches fire (remember if it's hot inside the house, it is four to five times hotter outside).
- ☐ Fill sinks and tubs for an emergency water supply.
- ☐ Place wet towels under doors to keep smoke and embers out.
- ☐ After the fire has passed, check your roof and extinguish any fires, sparks or embers.
- ☐ Check inside the attic for hidden embers.
- ☐ Patrol your property and extinguish small fires.
- ☐ If there are fires that you can not extinguish with a small amount of water or in a short period of time, call 9-1-1.

Go! | *Early!*

By leaving early, you give your family the best chance of surviving a wildfire. You also help firefighters by keeping roads clear of congestion, enabling them to move more freely and do their job.

WHEN TO LEAVE

Leave early enough to avoid being caught in fire, smoke or road congestion. Don't wait to be told by authorities to leave. In an intense wildfire, they may not have time to knock on every door. If you are advised to leave, don't hesitate!

WHERE TO GO

Leave to a predetermined location (it should be a low-risk area, such as a well-prepared neighbor or relative's house, a Red Cross shelter or evacuation center, motel, etc.)

HOW TO GET THERE

Have several travel routes in case one route is blocked by the fire or by emergency vehicles and equipment. Choose an escape route away from the fire.

WHAT TO TAKE

Take your emergency supply kit containing your family and pet's necessary items.

EMERGENCY SUPPLIES

The American Red Cross recommends every family have an emergency supply kit assembled long before a wildfire or other emergency occurs. Use the checklist below to help assemble yours. For more information on emergency supplies, visit the American Red Cross Web site at www.redcross.org.

- ☐ Three-day supply of water (one gallon per person per day).
- ☐ Non-perishable food for all family members and pets (three-day supply).
- ☐ First aid kit.
- ☐ Flashlight, battery-powered radio, and extra batteries.
- ☐ An extra set of car keys, credit cards, cash or traveler's checks.
- ☐ Sanitation supplies.
- ☐ Extra eyeglasses or contact lenses.
- ☐ Important family documents and contact numbers.
- ☐ Map marked with evacuation routes.
- ☐ Prescriptions or special medications.
- ☐ Family photos and other irreplaceable items.
- ☐ Easily carried valuables.
- ☐ Personal computers (information on hard drives and disks).
- ☐ Chargers for cell phones, laptops, etc.

Note: Keep a pair of old shoes and a flashlight handy in case of a sudden evacuation at night.

Write up your Wildfire Action Plan and post it in a location where every member of your family can see it. Rehearse it with your family.

My Personal Wildfire Action Plan

During High Fire Danger days in your area, monitor your local media for information on brush fires and be ready to implement your plan. Hot, dry and windy conditions create the perfect environment for a wildfire.

Important Phone Numbers:

Out-of-State Contact: _____ Phone: _____

Work: _____ _____ _____

School: _____ _____ _____

Other: _____ _____ _____

Evacuation Routes: _____

_____

_____

Where to go: _____

_____

Location of Emergency Supply Kit: _____

_____

Notes: _____

_____

_____

Colorado's Partners in Wildfire Prevention & Safety

If you have an emergency, Call 911

Tax credit available for mitigation work

As authorized by §39-22-104(4)(n), C.R.S., for income tax years 2014 through 2025 individuals, estates and trusts may subtract from federal taxable income 50% of the costs incurred in performing wildfire mitigation measures that meet the following qualifications and limitations:

- The taxpayer must own the property upon which the wildfire mitigation measures are performed.
- The property upon which the wildfire mitigation measures are performed must be located in Colorado.
- The property upon which the wildfire mitigation measures are performed must be located in a wildland-urban interface area.
- The total amount of the subtraction may not exceed $2,500.

Before conducting this work, homeowners are encouraged to contact South Metro Fire Rescue at LifeSafetyEducation@southmetro.org or 720-989-2271 for updated mitigation standards based on local best practices and evidence-based science. The Colorado State Forest Service has immense resources for educating homeowners about defensible space and other forms of mitigation as well. Visit the CSFS website at *www.csfs.colostate.edu*.

Costs

Costs include any actual out-of-pocket expense incurred and paid by the landowner and documented by receipt for performing wildfire mitigation measures. The following expenses are specifically excluded within statute and do not qualify for this subtraction:

- Inspection or certification fees;
- In-kind contributions;
- Donations;
- Incentives;
- Cost sharing;

Wildfire mitigation measures include the following activities to the extent that they meet or exceed any Colorado State Forest Service standards or any other applicable state rules:

- Creating and maintaining a defensible space around structures;
- Establishing fuel breaks;
- Thinning of woody vegetation for the primary purpose of reducing risk to structures from wildland fire;
- Secondary treatment of woody fuels by lopping and scattering, piling, chipping, removing from the site or prescribed burning.

For information regarding these and other wildfire mitigation measures, visit *www.csfs.colostate.edu;* for information about the tax credit, check *www.taxcolorado.com*.

APPENDIX E
Idaho Springs Three Mile Plan

"The City of Idaho Springs 3 Mile Area Plan provides direction concerning land use issues and infrastructure needs for lands within 3 miles of the current boundaries of the City of Idaho Springs. The plan identifies issues that should be addressed prior to any parcel of land being annexed into the City of Idaho Springs…" Portions of these areas are within the CWPIP boundary, and their land use descriptions follow for informational purposes.

AREA 1:

"Description:

Township 3 South, Range 72 West, all of Sections 19, 20, 21, 28, 29, & 30 and parts of Sections 18, 31, 32 and 33. Also land in Township 3 South, Range 73 West, parts of Sections 13 & 25 and all of Section 24. This area lies between the City of Idaho Springs and Central City and Black Hawk. The area includes portions of both Gilpin and Clear Creek counties and includes lands held by the Bureau of Land Management.

Land Use:

The lands in this area are currently zoned for single family residential…, preservation/conservation district…and mining… That portion of the area that lies within Gilpin County is forested and carries no other zoning designation. The Gilpin County Master Plan shows this as a resource area suited for low density residential development (one unit per 20 acres).

Transportation:

Interstate 70, US Highways 40 & 6 and Colorado State Highway 119 provide primary access to the southern portion of this area. The Central City Parkway crosses the area beginning near the southeast corner and connects I-70 to Central City. A handful of drives and roads are located throughout the northern portion of this area. Virginia Canyon Road, located near the western edge of the area, provides another connection to this Area and Central City.

Utility Provisions:

Individual well and septic systems serve the residents of this area.

Community Services:

…Some portions of the area (south of Central City and Blackhawk) are not located within Fire Protection Districts and are served by Central City, Gilpin and Clear Creek Fire Districts on an as-needed basis…

Open Space, Parks & Recreation:

The Clear Creek County Master Plan proposes Open Space and a natural conservation buffer along the northern boundary of the City of Idaho Springs. Much of this land is evergreen forest land or shrub and brush rangeland. …every effort should be made to include as much of this area as open space as possible in order to preserve the rugged natural backdrop of these south-facing slopes…"

DRAFT

AREA 2:
"Description:
Township 3 South, Range 72 West, parts of Sections: 15, 22, 23, 25, 26, 34 & 36 and all of Sections 27 & 35; and Township 4 South, Range 72 West, portions of Sections 1, 2 & 3. This area includes portions of Gilpin and Clear Creek Counties.
Land Use:
That portion of the area located within Gilpin County is zoned for forestry and is shown in the Gilpin County Master Plan as a resource area suited for low density residential (one unit per 20 acres) development.
The lands within Clear Creek County are zoned for planned development…large tract single family residences…, single family residences…and mining… …This area includes the stream of Clear Creek as it flows into Jefferson County.
Transportation:
U.S. Highways 40 and 6 as well as Interstate 70 serve this area. State Highway 119, and various local roads and drives also provide access to the area. Interstate 70 narrows from 3 to 2 lanes in each direction at it extends westward into Clear Creek County at the top of Floyd Hill. …
Utility Provisions:
Individual well and septic systems serve the residents of this area.
Community Services:
This area lies within the Clear Creek and High Country Fire Protection Districts …
Open Space, Parks & Recreation:
Much of the land in this area is open mountain rangeland. Clear Creek and North Clear Creek run through the area and the Clear Creek County Master Plan proposes that the area north of US Highway 6 and south of the Gilpin County line be used for recreation. …"

AREA 3:
"Description:
Township 3 South, Range 72 West, parts of Sections 32 & 33 and Township 4 South, Range 72 West, parts of Sections 2, 3, 4, 5, 10, 11, 15, 16 & 17 and all of Sections 8 & 9. The entire area is located within the boundaries of Clear Creek County and contains the Upper Beaver Brook Reservoir. The area also contains the Beaver Brook (Chase), Saddleback and Hyland Hills residential subdivisions.
Land Use:
…Residential development is concentrated on the eastern side of the area. The remainder of the area is zoned for preservation/conservation…
Transportation:
U.S. Highway 40 and Interstate 70 border this area to the north and east. There are no major thoroughfares within Area 3 and the area is served primarily by county and local access roads such as Beaver Brook Canyon Road, Hidden Wilderness Road, Santa Fe Mountain Road and Clear Creek County Roads 182 and 183.
Utility Provisions:
Individual well and septic systems serve the residents of this area. …
Community Services:
This area lies within the Clear Creek Fire Protection District …

DRAFT

Open Space, Parks & Recreation:
…park, recreation, open space and trails opportunities should be developed in accordance with the City of Idaho Springs Comprehensive Plan, as adopted."

AREA 4:
"Description:
Within Township 4 South, Range 72 West, all of Sections 6 & 7 and part of Section18. Also land in Township 4 South, Range 73 West, part of Sections 1, 2, 9, 14, 15 & 16 and all of Sections 3, 10, 11, 12 & 13. This area is wholly contained in Clear Creek County and includes Echo Mountain Park ski and snowboarding facility. Nearly the entire area is part of the Arapahoe National Forest.
Land Use:
This area is largely zoned for preservation/conservation… and mining… Scattered sites are zoned for single family residential development…with a very small areas earmarked for large tract single family residences… and commercial… development. Campgrounds and trails are found in the National Forest.
Transportation:
Primary access is from I-70 and US Highway and Colorado Highway 103. Local streets include Soda Creek and Little Bear Creek Roads.
Utility Provisions:
Individual well and septic systems serve the residents of this area. The City of Idaho Springs water treatment plant is at the south west corner of the Area and an adjacent property may connect to the potable water system in 2008.
Community Services:
This section lies within the Clear Creek Fire Protection district…
Open Space, Parks & Recreation:
…open space and trails opportunities should be developed in accordance with the City of Idaho Springs Comprehensive Plan, as adopted."

AREA 5:
Description:
Township 3 South, Range 73 West, part of Sections 14, 15, 16, 20, 21, 29, 32, 33, 34 & 35 and all of Sections 22, 23, 26, 27, 28, 33 & 34. Also land within Township 4 South, Range 73 West, part of Sections 4, 5, 8 & 9. This area includes lands in Clear Creek and Gilpin Counties.
Land Use:
Clear Creek County zoning in this area includes: mining…, preservation/conservation…, planned development…, single family residential…, large lot single family residential…and large tract single family residential…development. The area also includes a buffer…zone to protect wildlife, natural resources, scenic views and open space.
The lands contained within Gilpin County are considered as forest land and have been targeted for low density (1 single family unit per 20 acres) residential development… Residential development is found along the St. Mary's Glacier road and along Colorado 103 headed south towards the summit of Mt. Evans.
Transportation:
This area is accessed by Colorado Highway 103 and Interstate 70. Travel within the area utilizes a local road network that includes the Two Brothers, Stanley and Bellevue Mountain Roads.

Utility Provisions:
Individual well and septic systems serve the majority of the residents of this area. Limited properties are served by the City utility system in cooperation with the Chicago Creek Sanitation District.
Community Services:
This section lies primarily within the Clear Creek Fire Protection district… Areas in Gilpin County area are currently served by the Central City Volunteer Fire Department…
Open Space, Parks & Recreation:
If annexed, park, recreation, open space and trails opportunities should be developed in accordance with the City of Idaho Springs Comprehensive Plan, as adopted.

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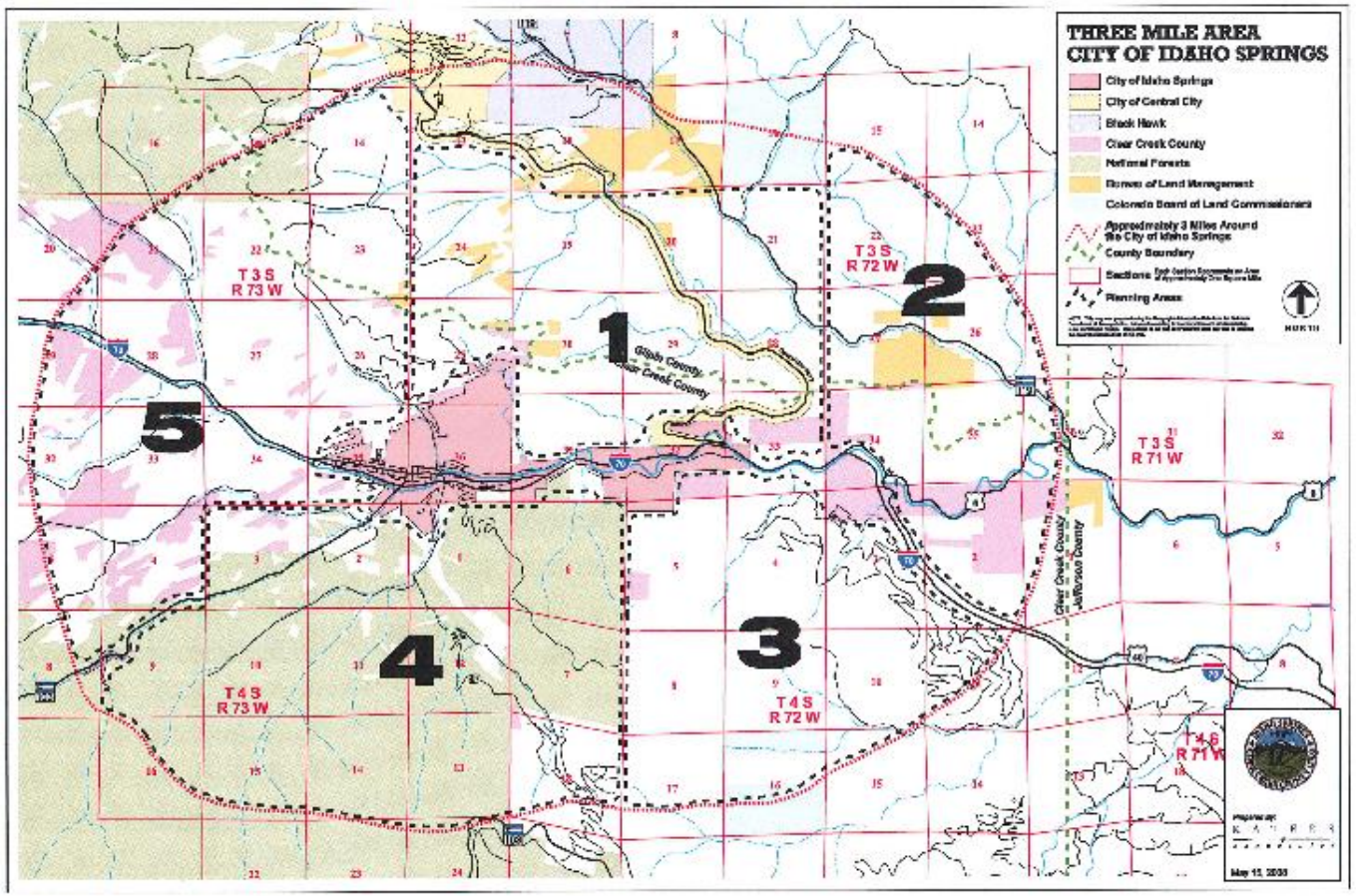
THREE MILE AREA
CITY OF IDAHO SPRINGS
City of Idaho Springs
City of Central City
Black Hawk
Clear Creek County
National Forests
Bureau of Land Management
Colorado Board of Land Commissioners
Approximately 3 Miles Around the City of Idaho Springs
County Boundary
Sections
Planning Areas
NORTH
1
2
3
4
5
T 3 S
R 73 W
T 3 S
R 72 W
T 3 S
R 71 W
T 4 S
R 73 W
T 4 S
R 72 W
T 4 S
R 71 W
Clear Creek County
Jefferson County

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