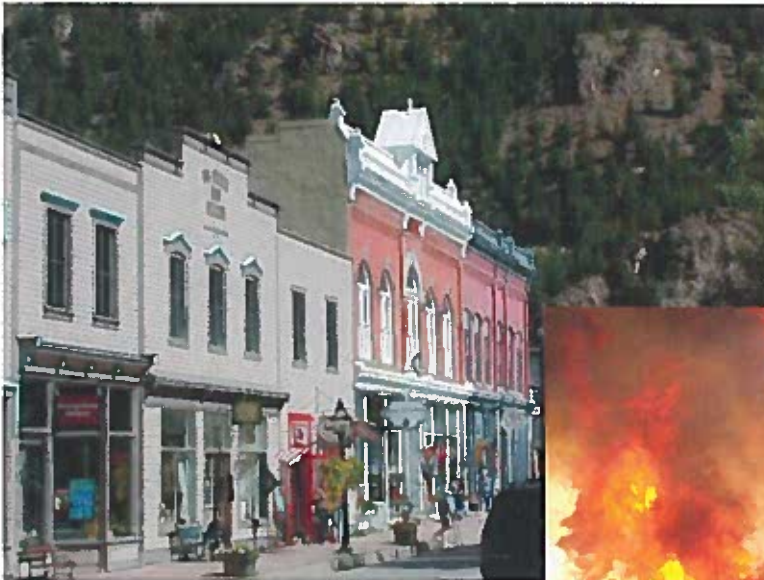


# *Community Wildfire Protection Implementation Plan*

GEORGETOWN AREA  
Clear Creek County, CO

Final: 2-11-15



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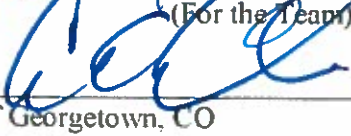
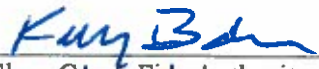

## CWPIP Certification

The Georgetown 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 Georgetown area. The plan:

- Was collaboratively developed – residents, interested parties and state and federal land management agencies managing land in the Georgetown 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:

 _____ (For the Town)	3/10/2015 _____ Date
 _____ Town of Georgetown, CO	3/26/2015 _____ Date
 _____ Clear Creek Fire Authority	4/30/15 _____ Date
 _____ Clear Creek County Office of Emergency Management	3/31/15 _____ Date
_____ Colorado State Forest Service, Golden District	(Review) _____ Date

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## TABLE OF CONTENTS

Section 1:	Community Wildfire Protection Planning.....	P 7
	1.1 CWPIP EXECUTIVE SUMMARY: Risks and Recommendations	
Section 2:	The Georgetown Area & Community Risk Analysis.....	P 11
Section 3:	Wildland Fire Response Infrastructure and Capabilities.....	P 21
Section 4:	Implementation Recommendations.....	P 22
	4.1 General Types of Mitigation techniques to be applied	
	4.2 Community Evacuation & Preparedness	
Section 5:	Recommended Priority Actions for the Georgetown CWPIP Area.....	P 32
Section 6:	Plan Implementation and Follow up .....	P 64
Section 7:	Appendices.....	P 67

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## Section 1: COMMUNITY WILDFIRE PROTECTION PLANNING

The town of Georgetown Area Community Wildfire Protection Implementation Plan (CWPIP) provides an assessment of neighborhood 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 enable the community to live with fire as a natural part of the landscape ecosystem. It informs and encourages homeowners to create defensible space and achieve fire resistant structural integrity, and makes recommendations for the town and Clear Creek County and applicable agencies concerning mitigation actions to help reduce wildfire behavior and to protect area water supply.

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.**

There are many values at risk for this area. Some of those include life, property, watershed values, power lines, water supply, wildlife, and recreation.

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 Georgetown Area
  - Lynette Kelsey: town of Georgetown Selectman, Ward 2
  - Lee Behrens: former town of Georgetown Selectman, Ward 1
  - Ed Hoover: town of Georgetown Selectman, Ward 3
- John Chapman: Team Facilitator
- Professional Support and advice
  - US Forest Service: Natalie Angell, Kevin Zimlinghaus
  - Colorado State Forest Service; Golden District
  - Clear Creek Office of Emergency Management: Kathleen Krebs
  - Clear Creek Fire Authority: Kelly Babeon

**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 would be carried out by appropriate agencies and may be subject to federal, state, and county policies and procedures

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.

The HFRA provides communities with a flexible set of assessment procedures and guidelines that facilitate a collaborative standardized 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 Georgetown 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, 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. Inclusion of the Georgetown area in the CCC CWPP enables residents to qualify for the CO state tax advantage for defensible space work on their individual properties.



## **1.1 CWPIP EXECUTIVE SUMMARY: Risks and Recommendations**

**In addition to the following pages describing the area and its wildfire analysis;**

**The CWPIP team developed: 1) a listing of Values at Risk; and 2) a set of initial mitigation action priorities.**

### **1. Values at Risk in the Georgetown area CWPIP: (P.18)**

- **Life & Property:** Protection of life is first in consideration by residents and by emergency services. Protection of property, historical, personal and business, is the second most important concern. Georgetown is an important example of 19th century Colorado history. Georgetown is immediately adjacent to and involved with the important tourism and historic area of the Georgetown Loop Railroad for which a CWPIP was completed in 2011.
- **Water Supply Infrastructure:** The Georgetown watershed covers an area of XXX acres south and SW of the town 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.
- **Critical Power Infrastructure:** Protection of local power facilities and lines is important in the event of wildfire in order to maintain protection services.
- **The area's Viewshed:** Roads and trails leading into and out of Georgetown climb neighboring hillsides and border the town itself, providing views of the historical setting for the town and its culture.
- **Roadways and Transportation:** I-70 is an important transportation corridor for Colorado. Georgetown is also the jumping off point for the Guanella Pass road.
- **Wildlife:** The area has important wildlife species needing adequate habitat and protection, and a Colorado Division of Parks and Wildlife area is located on the west side of I-70.
- **Recreation:** Opportunities abound for hiking, fishing, river rafting, camping, and learning the mining history of the area.

### **2. Mitigation Action Recommendations: (P.37)**

- 1. Work with officials and residents to facilitate creation of Defensible Space: Rural and Urban Properties**
- 2. Georgetown South: area adjacent to Georgetown on south along Guanella Pass switchbacks.**
- 3. Georgetown East: area adjacent to Georgetown along its eastern side.**
- 4. Silverdale**
- 5. Georgetown North: area approaching lake and near Saxon Mountain Road**
- 6. Mitigation thinning on area roadways**
- 7. Georgetown Watershed Area: Mitigation of Georgetown Reservoir; maintain actions around adjacent lakes and reservoirs**
- 8. Power Transmission and Distribution Lines**

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**3. Publications for community protection and Defensible Space:** Appendix A contains a list of websites and publications for home owners to use in gaining information on defensible space, fire resistant landscaping, fire resistant building materials, and grant opportunities.

## Section 2: THE GEORGETOWN AREA & COMMUNITY RISK ANALYSIS

### 2.1 The Plan Area: Topography and Vegetation

The CWPIP area (See following map) encompasses the town of Georgetown and adjacent areas of the Clear Creek County CWPP recommended for treatment in which wildfire could potentially affect Georgetown. The area is along and adjacent to I-70, approximately 30 mi. west of Denver. It is between 8500 and 10500 feet elevation in the montane ecosystem. The plan area includes a buffer zone surrounding the immediate town which was considered in plan recommendations. The neighborhood areas are surrounded by lands under management of the US National Forest Service (Arapaho and Roosevelt National Forest), Historic Georgetown, and Clear Creek County Open Space. The life zones involved are described in: "*Colorado Life Zones: Seasons, Plants, & Animals.*"

"The *Montane Ecosystem* occurs at elevations between approximately 8000 and 10,000 feet. The direction the slope of the mountain faces can determine which kinds of trees live there. The southern facing slopes get more sun and support more open forests of aspen trees and 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, lodgepole pine, ponderosa pine and an occasional Engelmann spruce. ...Montane soils with high moisture content 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. 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."

Fire is very important for the montane forests. Over time, the forests can be taken over by dense forests of pine trees. Branches and needles fall to the forest floor and pile up into dry, crispy fire hazards. Smaller forest fires help clear the forests of old dying trees and clear the forest floor for new plants to grow. If we prevent all forest fires, all the dry dead trees, branches, and needles get even thicker. When a fire starts, it can quickly become an enormous super-hot firestorm like the Hayman Fire in 2002." Fire has not played a major part in development of the current forest system in a century in the Georgetown area.

The CWPIP made a boundary determination for the Georgetown area for protection and the selected boundary was presented to CCC Fire Authority Chief Kelly Babeon for concurrence. The boundary is shown on page 11, followed by maps for land ownership and vegetation.

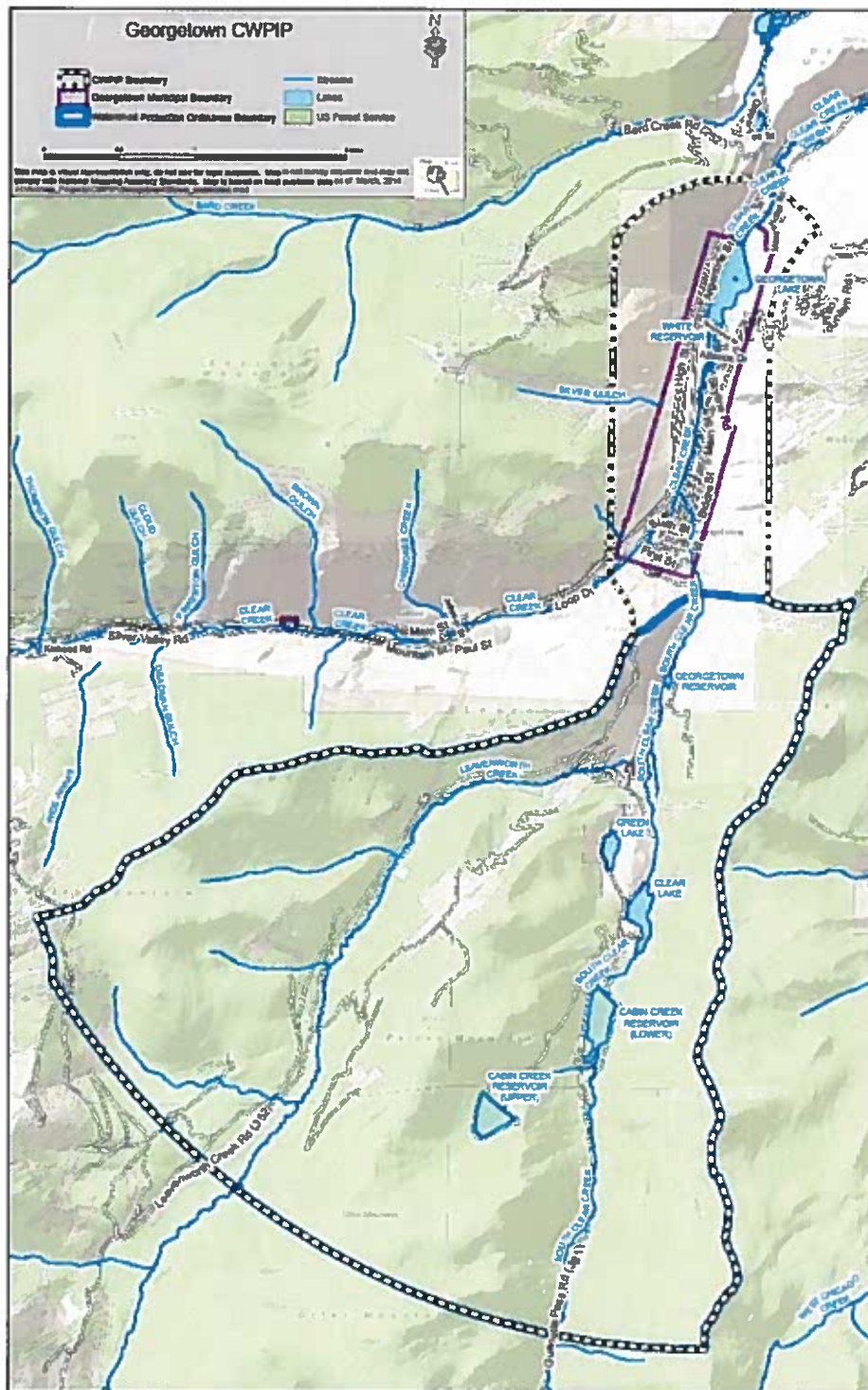
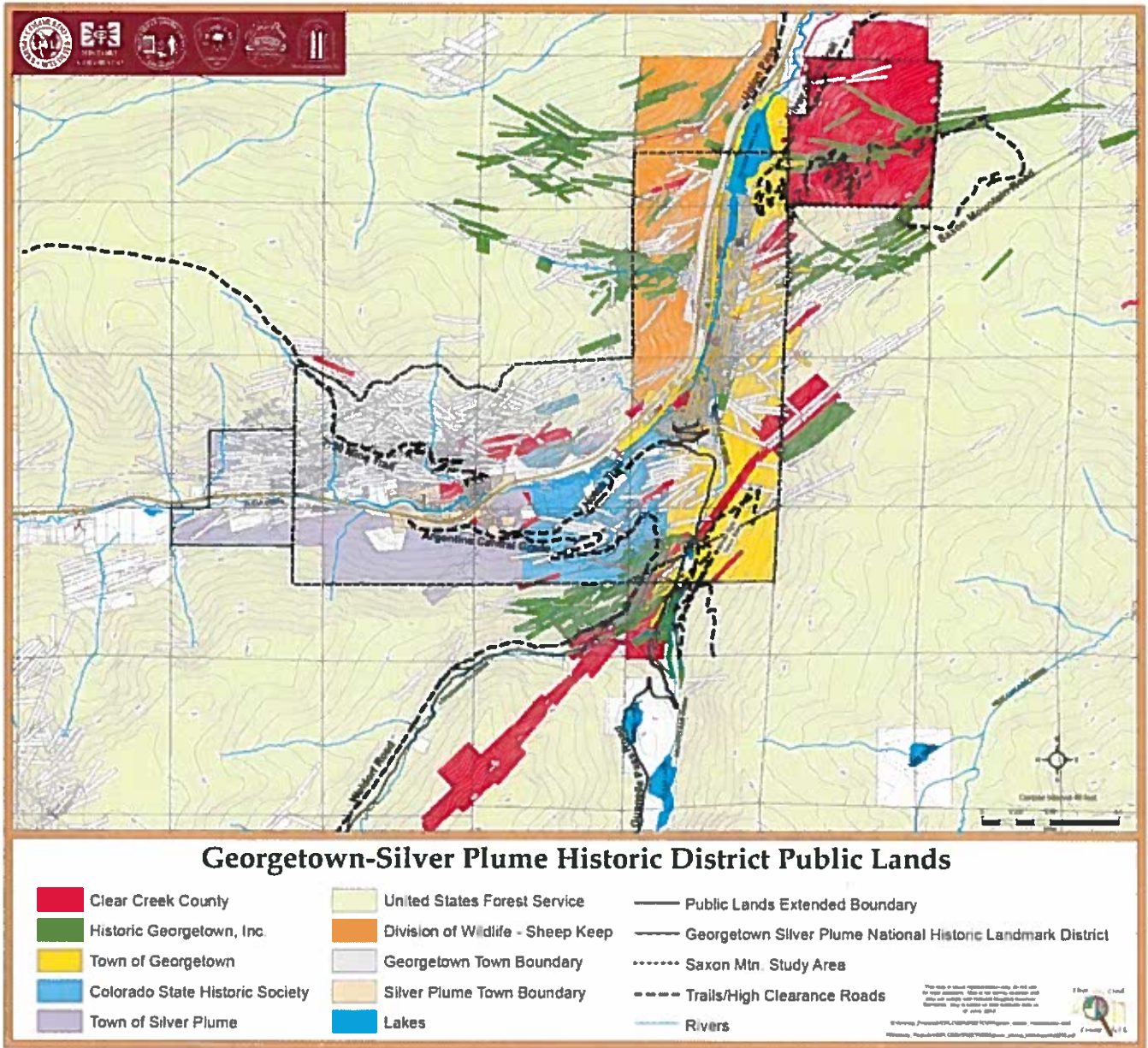


Figure 1: Georgetown CWPIP area boundary



**Figure 2: Land ownership; Georgetown-Silver Plume Historic District**

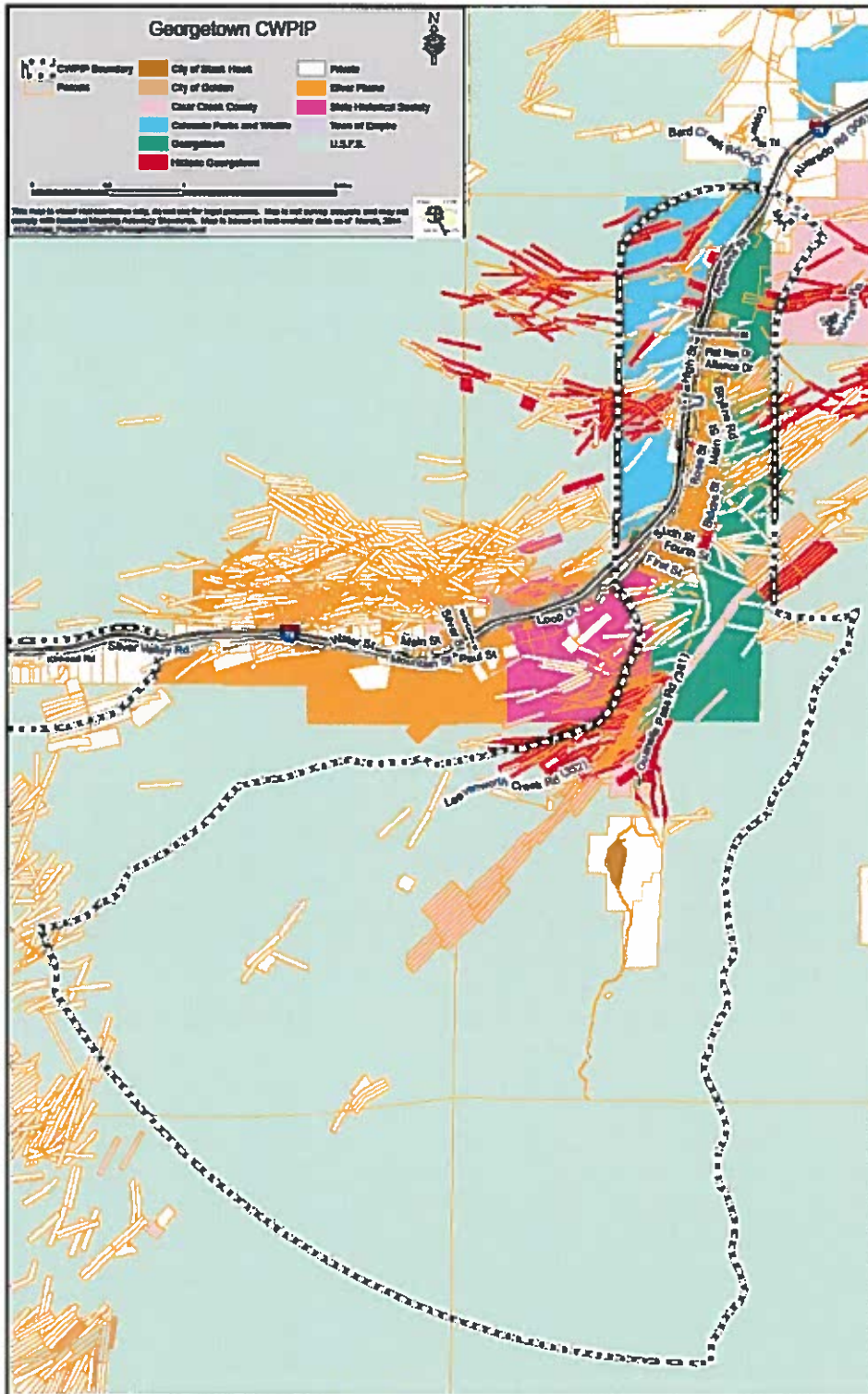


Figure 3: Georgetown CWPIP Land Ownership

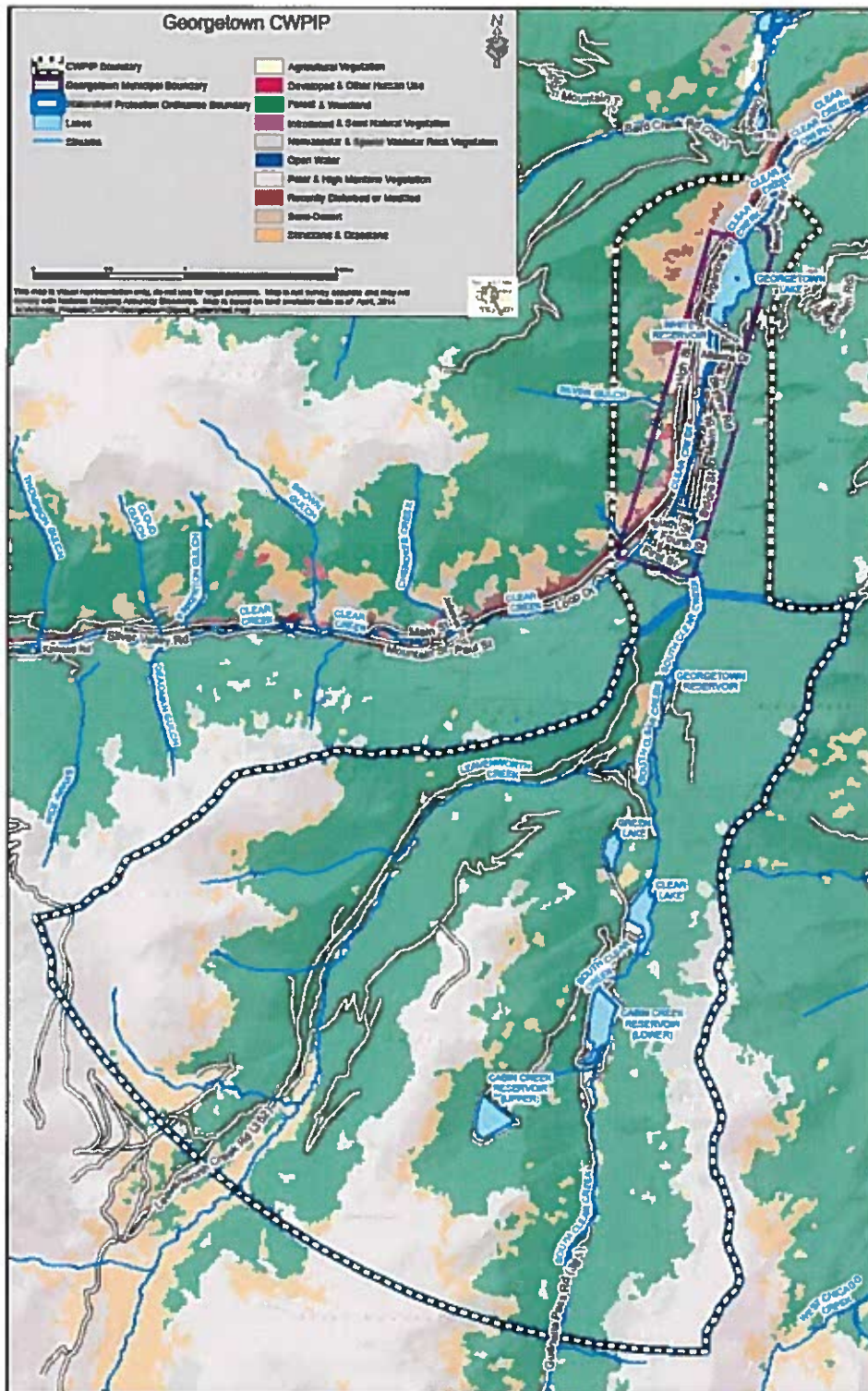


Figure 4: Vegetation in Georgetown CWPIP area

### Relationship to Georgetown Loop RR CWPIP

A CWPIP was completed for Georgetown Loop RR in 2012. The eastern boundary for that plan and the western boundary for the Georgetown CWPIP overlap a bit. Recommended mitigation projects for the eastern side of Georgetown Loop are adjacent to this plan's boundary: track space, the Devil's Gate Station, and the Pohle House. They do not interact significantly, but the actions on each landscape will complement each other.

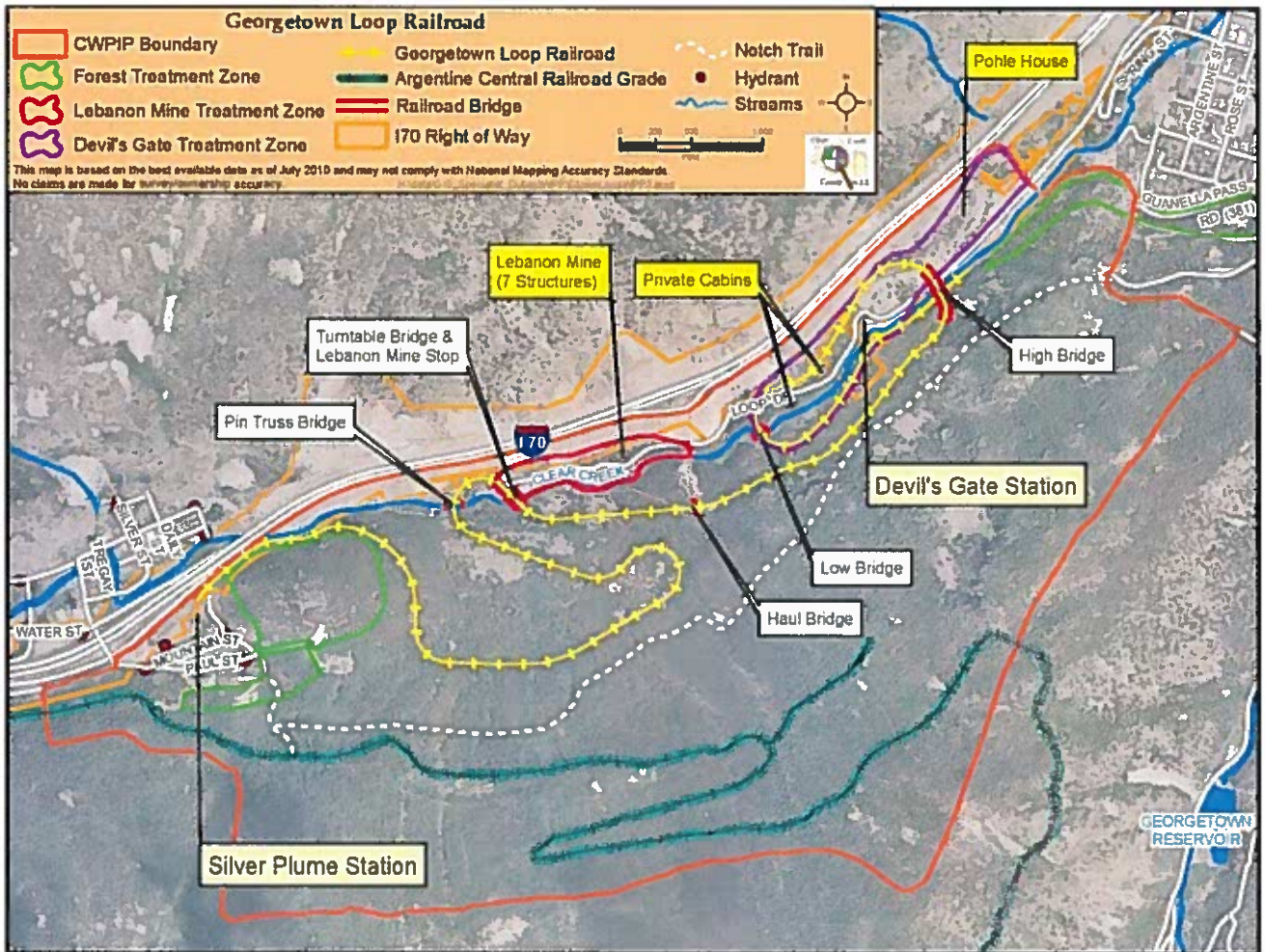


Figure 5: Georgetown Loop RR CWPIP boundary



## 2.2 Neighborhoods and Hazard Assessments

**Community Risk Analysis:** Following is the Georgetown Area CWPIP physical description and fire hazard assessment. **The description includes the Community Assessment Survey from the Clear Creek County CWPP.** That plan should be referred to for overall area hazard analysis and fire history.

**The CWPIP also makes major use of a document prepared for Georgetown by the Colorado State Forest Service in 2007: the *Georgetown Open Space/Recreational Land Forest Stewardship Plan*.** The plan was designed to guide open space and land owners in sound forest restoration of their properties and also deals with wildfire on area lands.

From the introduction to the State Forest Service plan:

*“This Forest Stewardship Plan has been prepared by a professional forester, in cooperation with the town of Georgetown in order to guide them in implementing forest management activities on this property. “Georgetown Open Space/Recreational Land.”*

This plan discusses the current condition and desired future condition of forest resources on Open Space land. The plan also outlines the goals of the landowner (town of Georgetown) and recommends management activities that integrate these goals with accepted forest management practices.

This plan represents a ten-year land management strategy that includes a prioritized list of activities.”

**Goals and objectives** stated in the plan include, in part:

- “Promote good stewardship of both forested and non-forested land through sound management practices;
- **Reduce the threat of catastrophic wildfire;**
- Conserve plant and wildlife resources (HDPLC Vision, Cooperative Management Plan);
- Preserve vistas and cultural resources, provide low impact recreational use of the lands, and interpret the natural and historic features of the area (HDPLC Vision, Cooperative Management Plan);
- Protect and enhance water quality;...”
- “Thin stands for improvement of forest health and vigor;
- Treat and prevent insect and disease outbreaks;
- **Use existing cooperative agreements with neighboring landowners to coordinate management activities onto their land...**”

**Values at Risk: Values at risk in the Georgetown area CWPIP:**

- **Life & Property:** Protection of life is first in consideration by residents and by emergency services. Protection of property, historical, personal and business, is the second most important concern to maintain the integrity and stability of the community. Georgetown is a very important example of 19<sup>th</sup> century Colorado history.
  - *"The importance of Georgetown's place in history was given national recognition in 1966... the towns of Georgetown and Silver Plume were recognized as a National Historic Landmark District (NHL) and protected to help tell the story of the American West. Historic Georgetown was formed as a private non-profit organization in 1970 to assist in the efforts to preserve and interpret Georgetown's mining past. While federal, state, and local government and local organizations work to restore landmark sites, most of Georgetown's 200 19th-century structures are privately owned, protected, and preserved by local citizens."* This private ownership is important to the efforts of this CWPIP.
  - Georgetown is immediately adjacent to and involved with the important tourism and historic area of the Georgetown Loop Historic Mining and Railroad Park. A CWPIP for the area of the loop railroad was completed in 2011.
- **Water Supply Infrastructure:** The Georgetown watershed covers an area south and SW of the town 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.
- **Critical Power Infrastructure:** Protection of local power facilities and lines is important in the event of wildfire in order to maintain protection services. The community will coordinate 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. The objective of this project is development of a fire resistant landscape that accommodates electrical power transmission needs.
- **The area's Viewshed:** Roads and trails leading into and out of Georgetown climb neighboring hillsides and border the town itself, providing views of the historical setting for the town and its culture. Protective mitigation to maintain this viewshed in the event of wildfire is important to how the town is perceived, important to its economy as a visitor destination, and important to prevent soil erosion and maintain slope stability.
- **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. Georgetown is also the jumping off point for the Guanella Pass road, leading south across the pass to Grant, CO, on US285.
- **Wildlife:** The area has important wildlife species needing adequate habitat and protection. A Colorado Division of Parks and Wildlife area is located on the west side of I-70, providing protection for wildlife, including a band of bighorn sheep, and providing recreational opportunities for visitors to the area. There is also important wildlife habitat

on the east side of I-70 above the town and south of Georgetown through the watershed area towards Guanella Pass.

- **Recreation:** Surrounded by US Forest Service, county, and state lands, Georgetown is a unique tourism and historic town. Within 40 minutes of the Denver metropolitan region, Georgetown lies nestled in the middle of timbered hills and peaks. Opportunities for hiking, fishing, river rafting, camping, and learning the mining history of the area abound.

**The following page contains the neighborhood hazard rating and recommendation page for the Georgetown CWPIP area which was developed in the Clear Creek County Community Wildfire Protection Plan (CCC CWPP).**

## Clear Creek County CWPP

### Appendix D – Community Wildfire Hazard and Risk Assessments

#### Georgetown



#### Community Hazard Assessment

**MODERATE**

#### Community Design

**Municipality Access** Access across town paved or groomed 1 ½ to 2 lane. Somewhat limited access across Clear Creek to Argentine Rd. and I-70. Generally flat valley floor bounded by steep slopes east, south, and west of town. I-70 provides buffer to the west. Dense timber adjacent to structures on the south and east town margins. Municipal hydrant grid observed. Moderate beetle-kill noted.

#### Fuels

East facing slopes across I-70 light grass, shrub and rock. Dense lodgepole pine and mixed conifer adjacent to town on steep west and north facing slopes. Housing density is high in town limits with mature urban forestry mix. FBFM 1, 2, 4, 8, 9, 10 noted in area.

#### Mitigation Recommendations

Improve defensible space where needed and reduce structural ignitability through phased building improvements or new construction. Develop shaded fuelbreaks along lower Guanella Pass Road. Strategic forest treatment zones identified along forested town margins.



Clear Creek County  
Georgetown  
WUI

### **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 is responsible for initial attack on any wildland fire within its response jurisdiction. 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 maintains nine stations. Major stations for Georgetown are: Station 4 in Georgetown, Station 8 in Silver Plume, Station 1 in Dumont, and Station 2 in Idaho Springs. 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."* The AOP details procedures and resources to be used for wildland fire suppression 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.

## Section 4: GENERAL TYPES OF 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 Georgetown 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 town of Georgetown, CCFA, USFS, and county and state agencies. They generally follow direction given in the hazard assessments of the Clear Creek County CWPP.

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. The values assigned Georgetown are on P.17.
2. **Current level of activity:** Experience has shown that wildfire mitigation efforts are most effective when the community is involved.
3. **The important actions that residents should take:** A major component 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 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 Georgetown area the US Forest Service manages much of the surrounding public lands. Clear Creek County Open Space, Historic Georgetown, and the Historic District Public Lands Commission are also involved.

## **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 Structure Defensible Space – The Land owner**

**A major function of the CWPIP team would be to work with town 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 Georgetown 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"** (QUICK GUIDE SERIES FIRE 2012-1 Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones; formerly 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.*



Full descriptions of effective actions can be found:

- at the national website [www.firewise.org](http://www.firewise.org),
- Appendix D which contains a complete brochure on Ready, Set, Go
- Two 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](http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf), and “Landowner Guide to Thinning”: [http://csfs.colostate.edu/pdfs/landowner\\_g4thin\\_scr.pdf](http://csfs.colostate.edu/pdfs/landowner_g4thin_scr.pdf)

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.

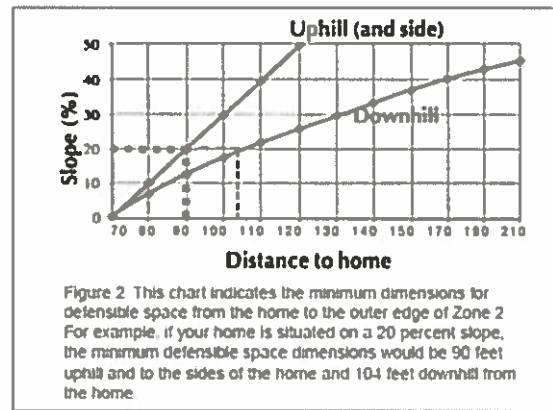
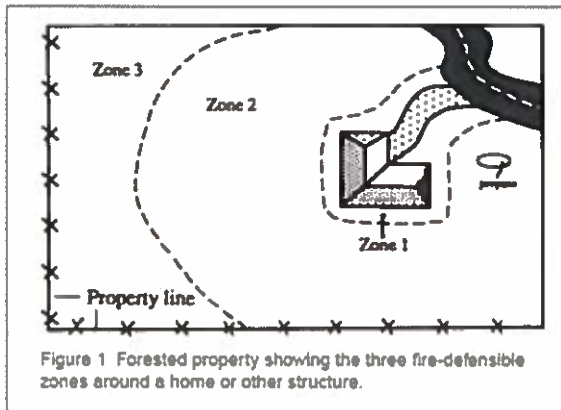


Figure 6: CSFS Defensible Space Standards (Dennis 2003)

The installation of a defensible space consists of three zones that can be adapted to specific building lot situations (Figure 4). Following are portions of the CSFS pamphlet on Defensible Space. See the website for complete mitigation actions. Mitigation actions for town size lots are in priority recommendation 1, P.33.

**Zone 1** extends a 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. Increase distance 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.

- Irrigate grass and other vegetation during the growing season. 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.
- 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). Zone 2 should be considerably larger if the dwelling occurs on steep slopes. 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, more 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. 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. There are an assortment of stewardship options, to proactively manage the forest to reduce wildfire intensity, protect water quality, improve wildlife habitat, boost the health and growth rate of your trees, and increase tree survivability.

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)

**Mitigation of Structural Ignitability: Important in Georgetown as buildings are historical, and close together on city lots. Wood construction is prevalent. Complete protection would be difficult if ember storms are involved, but structural improvement consistent with historical values will be important.**

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 that land on 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 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.

#### 4.1b 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 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.

##### 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. However, 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

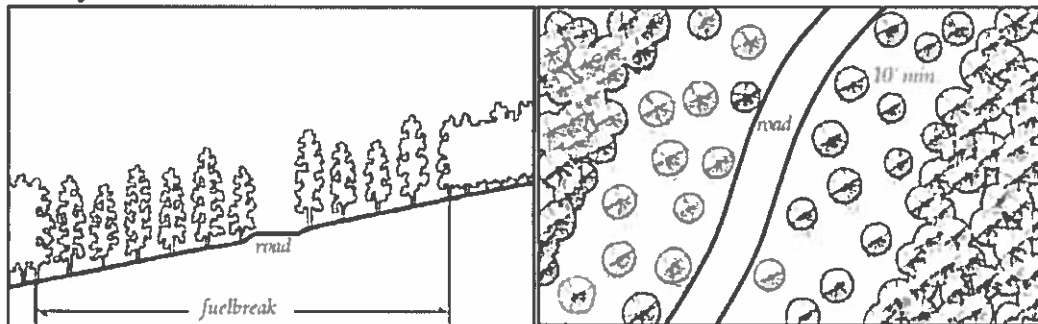
Percent slope %	Minimum uphill distance (ft.)	Minimum downhill distance (ft.)	Total distance of modified fuels (ft.)
0	150	150	300
10	140	165	303
20	130	180	310
30	120	195	315
40	110	210	320
50	100	225	325
60	100	240	340

\*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 Georgetown area CWPIP. The trees may be a mixture of Douglas-fir, lodge pole pine, ponderosa pine and an occasional Engelmann spruce. There are often 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 in the forest. It is recommended that thinning be accomplished by leaving 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. To create the fuel break, dead, diseased, weakened, and malformed conifer trees would be removed.

The harvesting of conifer trees would occur as necessary to achieve the desired density of approximately 10- to 15-foot spacing among tree canopies (Figure 5). Conifer trees would be limbed up approximately 10 feet from the ground and limbs removed. Aspen trees would not be harvested or harmed during the creation of the fuel breaks. Aspen are usually fire resistant and would add to the effectiveness of the fuel breaks.



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

Plan view of fuelbreak showing minimum distance between tree crowns.

**Figure 7: 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. Actions should be in line with recommendations for “Clean up Alternatives” contained in CSFS publication: “Landowner Guide to Thinning” [http://csfs.colostate.edu/pdfs/landowner\\_g4thin\\_scr.pdf](http://csfs.colostate.edu/pdfs/landowner_g4thin_scr.pdf).

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.

**Treatment Alternatives and Costs (from CCC CWPP, the Colorado State FS should be consulted for updating cost estimates as projects are developed)**

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	<ul style="list-style-type: none"> <li>• Can be very cost effective.</li> <li>• Ecologically beneficial.</li> <li>• Can be used as training opportunity for firefighters.</li> <li>• Cost varies with complexity.</li> <li>• Carries risk of escape, which may be unacceptable in some WUI areas.</li> <li>• Unreliable scheduling due to weather and smoke management constraints.</li> </ul>
Brush Mastication	\$300 - \$500 per acre	<ul style="list-style-type: none"> <li>• Brush species (Gamble oak in particular) tend to resprout vigorously after mechanical treatment.</li> <li>• Follow-up treatments with herbicides, fire, grazing, or further mechanical treatments are typically necessary.</li> <li>• Mastication tends to be less expensive than manual treatment and eliminates disposal issues.</li> </ul>
Timber Mastication	\$300 - \$1,200 per acre	<ul style="list-style-type: none"> <li>• Materials up to 10 inches in diameter and slopes up to 30 percent can be treated.</li> <li>• Eliminates disposal issues.</li> <li>• Environmental impacts of residue being left onsite are still under study.</li> </ul>
Manual Treatment with Chipping or Pile Burning	\$300 - \$1,200 per acre	<ul style="list-style-type: none"> <li>• Allows for removal of merchantable materials or firewood in timber.</li> <li>• Requires chipping, hauling, and pile burning of slash.</li> </ul>
Feller Buncher	\$750 and up per acre	<ul style="list-style-type: none"> <li>• Mechanical treatment on slopes over 30 percent of materials over 10 inches in diameter may require a feller buncher rather than a masticator.</li> <li>• Costs tend to be considerably higher than mastication.</li> <li>• May allow for removal of merchantable material.</li> </ul>

*The above cost estimates are several years old. The community CWPIP team should consult with the CO State Forest Service for advice on obtaining 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 and Georgetown area roads should be managed as firebreaks the entire length of the planning area to reduce the chances of fire caused from roadside 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 Georgetown 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 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 critical. Creation and maintenance of ingress/egress will enable residents to evacuate safely and enable emergency vehicles access. The Clear Creek County CWPP states as an objective, *"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, 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: For more information on Code Red and how to sign up see Appendix D**  
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.

## Section 5: RECOMMENDED PRIORITY ACTIONS FOR THE GEORGETOWN CWPIP AREA

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

The team utilized the "Georgetown Open Space/Recreational Land Forest Stewardship Plan" prepared in 2007 by the Colorado State Forest Service (CSFS). It identifies several areas along and adjacent to Georgetown on the south and east for fuels mitigation. However, since the report's recommendations were limited to Georgetown Open Space lands and this CWPIP forms a mitigation plan for the complete area the team included the Clear Creek County CWPP recommended mitigation areas along the entire length of the area from south to north along its east side.

**Therefore, the following areas recommended for mitigation include lands that are in private ownership, town ownership, county ownership, and Open Space ownership. As the team and community move to carry out these recommendations it will be necessary to collaborate and negotiate with all groups applicable to the various units to gain understanding of and agreement to treatment.**

*"Four thinning units are delineated on the Georgetown Open Space/Recreational Land, for a possible total of 104 acres..."*

**The state plan recommends the following order of importance for mitigation in the units.**

<b>PRIORITY</b>	<b>ACTIVITY</b>
<b>Very High</b>	<b>Stand 8 Thinning Unit</b>
<b>High</b>	<b>Stand 2 Thinning Unit</b>
<b>Moderate</b>	<b>Stand 5 Thinning Unit</b>
<b>Moderate</b>	<b>Stand 9 Thinning Unit</b>

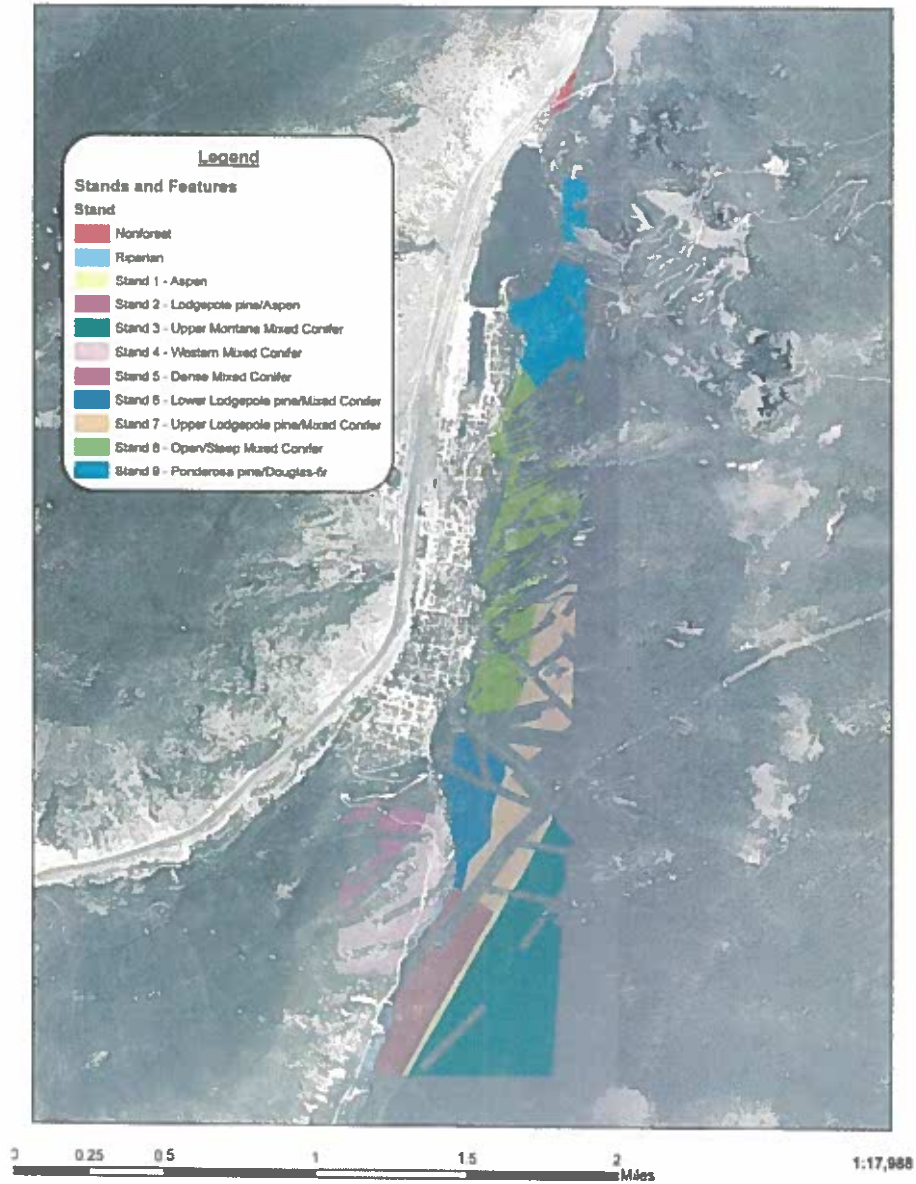
The state plan states, "Thinning also plays an important role in reducing the severity of a fire. By removing some trees, the continuity of fuels (especially in the forest canopy) is broken up, so it is more difficult for a fire to move up into the crown. Less fuel also means less heat, so the fire will not be quite as damaging to the residual stand..."

In development of the following recommended priorities the team has selected priority projects in a slightly different order, separating units along the south and east side of Georgetown into three major units, Georgetown South, Georgetown East, and Georgetown North. These units are described as separate mitigation priorities.





**Figure 4**  
**Georgetown Open Space/Rec. Land**  
**Stand Map**



**Georgetown Area Mitigation: from CSFS plan**

## **Recommended Treatment Priority1:**

### **Work with officials and residents to facilitate creation of Defensible Space: Rural and Urban Properties**

**Creation of personal defensible space is critical to area protection. The team recommends collaboration between itself, the town of Georgetown, the Clear Creek Fire Authority, the Colorado State Forest Service Golden District and Clear Creek offices to use neighborhood/community events to educate residents and promote their efforts to create Defensible Space on residential lands within the plan area.**

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: events to promote and inform residents on accomplishing defensible space; developing a listing of those land owners desiring to accomplish defensible space; developing a list of those needing assistance to carry out mitigation actions on their property; 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.

The fire hazard ratings within the town of Georgetown focus on the potential for impact from ember storms from surrounding wildfire activity based on topography: *“Generally flat valley floor bounded by steep slopes east, south, and west of town. I-70 provides buffer to the west. Dense timber adjacent to structures on the south and east town margins... Dense lodgepole pine and mixed conifer adjacent to town on steep west and north facing slopes. Housing density is high in town limits with mature urban forestry mix.”* 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.

**Clear Creek County Wildfire Hazard Mitigation Requirements:** When home owners undertake new or expanded construction changes to their property they will need to take action on the county requirements for mitigation. Information on finding such requirements is in Appendix E, P88.

#### **Protection for Rural Properties in the Wildland Urban Interface (WUI)**

As shown in Section 4, personal property Defensible Space actions are very important to protect homes. Those actions are discussed on pp.24-28, and CSFS publication: *“Protecting Your Home from Wildfire: Creating Wildfire-Defensible Zones”*. This publication is found on the CSFS website in the Defensible Space section at:

[http://csfs.colostate.edu/pdfs/FIRE2012\\_1\\_DspaceQuickGuide.pdf](http://csfs.colostate.edu/pdfs/FIRE2012_1_DspaceQuickGuide.pdf).

**Protection for Town Size Lots: Also see Appendix D brochure for Ready, Set, Go**

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. As noted earlier buildings in Georgetown are often close together and many are of wood construction and historical. Ember storms could have a definite impact. Building owners are urged to take what precautions they can to make their buildings as fire resistant as possible to help alleviate possible impacts of ember storms. Actions will not make buildings fire proof, but will help greatly to reduce fire effects.

In older residential areas 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). 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. See additional structural mitigation actions on P.36.

**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.

## 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

Mild 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.

Text and graphics used with permission from the City of Ashland, OR, and Ashland Fire & Police. Graphics designed by Insetta Design.

## **Recommended Treatment Priority 2: Mitigation for Georgetown South: slopes overlooking town along Guanella Pass Road switchbacks**

The team selected the steep landscape overlooking the south end of Georgetown as the second priority for mitigation. The unit outline on P.39 includes more acreage (60.18) than the state recommendation, which was limited to Georgetown Open Space lands. The potential for winds moving down from the pass above Silver Plume and affecting wildfire on the southern edge of town are a factor in this recommendation.

The CSFS plan states: *"While Stand 5 covers 18 acres along the upper switchbacks of the Guanella Pass Road just south of Georgetown, only the northern 10.3 acres of this stand is on operable terrain. The operable terrain in this unit is limited to areas just off the road and generally on slopes of 30% or less. Thinning in the northern portion of this stand should be aimed at reducing the potential spread of wildfire..."*

**The recommendation is that the team collaborates with Clear Creek Fire Authority and CO State Forest Service to study the 60 acre unit for treatment wherever possible as it includes over 40 additional acres in differing terrain. As privately owned land is involved it will be necessary to educate and negotiate with land owners for some of the mitigation to be accomplished.**

Treatment would be in line with the state recommendation: *"This portion of the stand is mainly mature lodgepole pine and Douglas-fir... Thinning in this stand will not necessarily focus on basal area per acre but on crown spacing and removal of mortality trees both adjacent to the road and those caused by insect attacks. The stand should be thinned to an overstory crown spacing of 10 to 15 feet or more to decrease the continuity of fuels in the canopy..."*

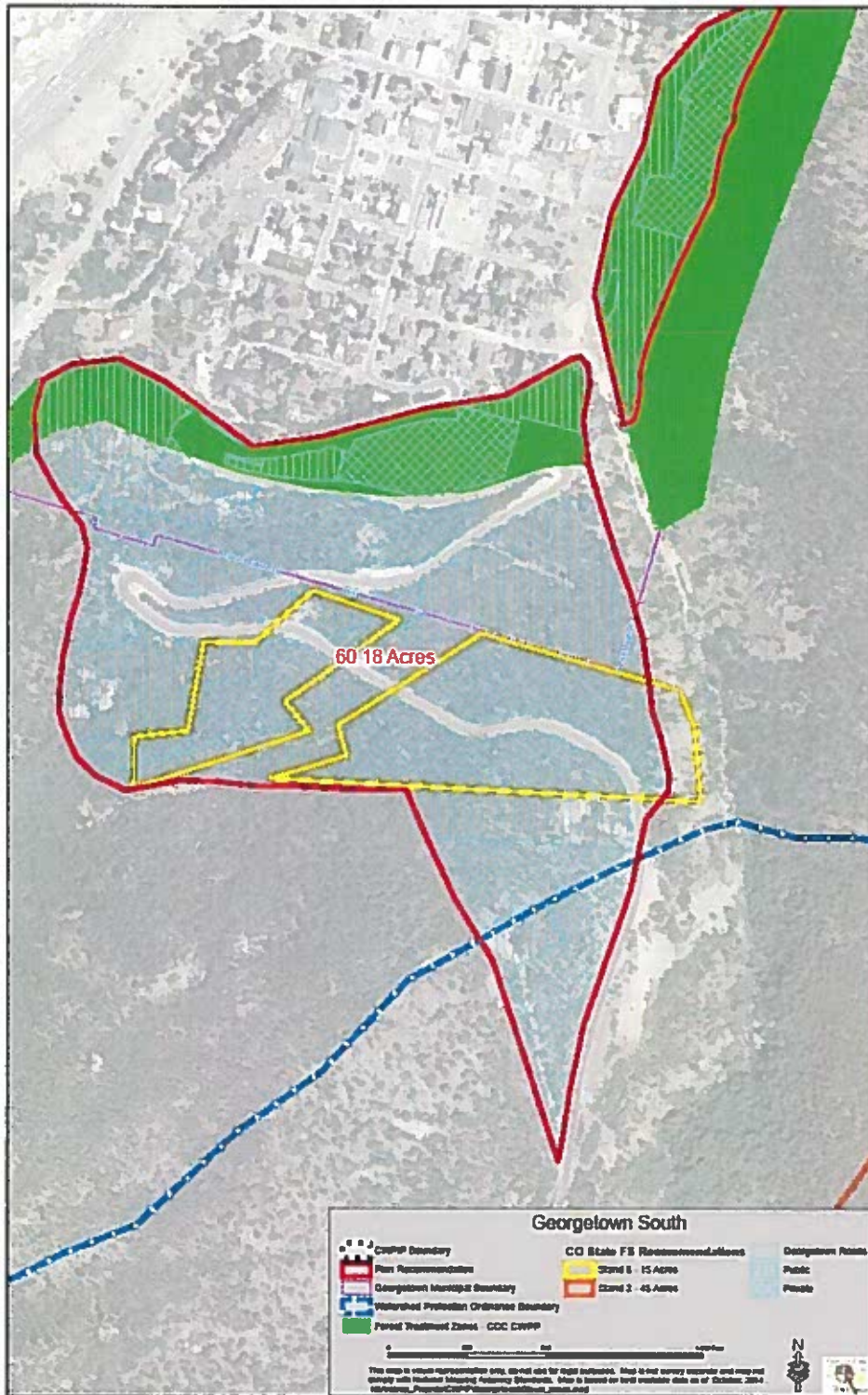
*"By reducing the continuity of fuels in the overstory and removing understory trees, the potential for a crown fire to spread, in such close proximity to the town of Georgetown, will be decreased..."*

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 also be followed.

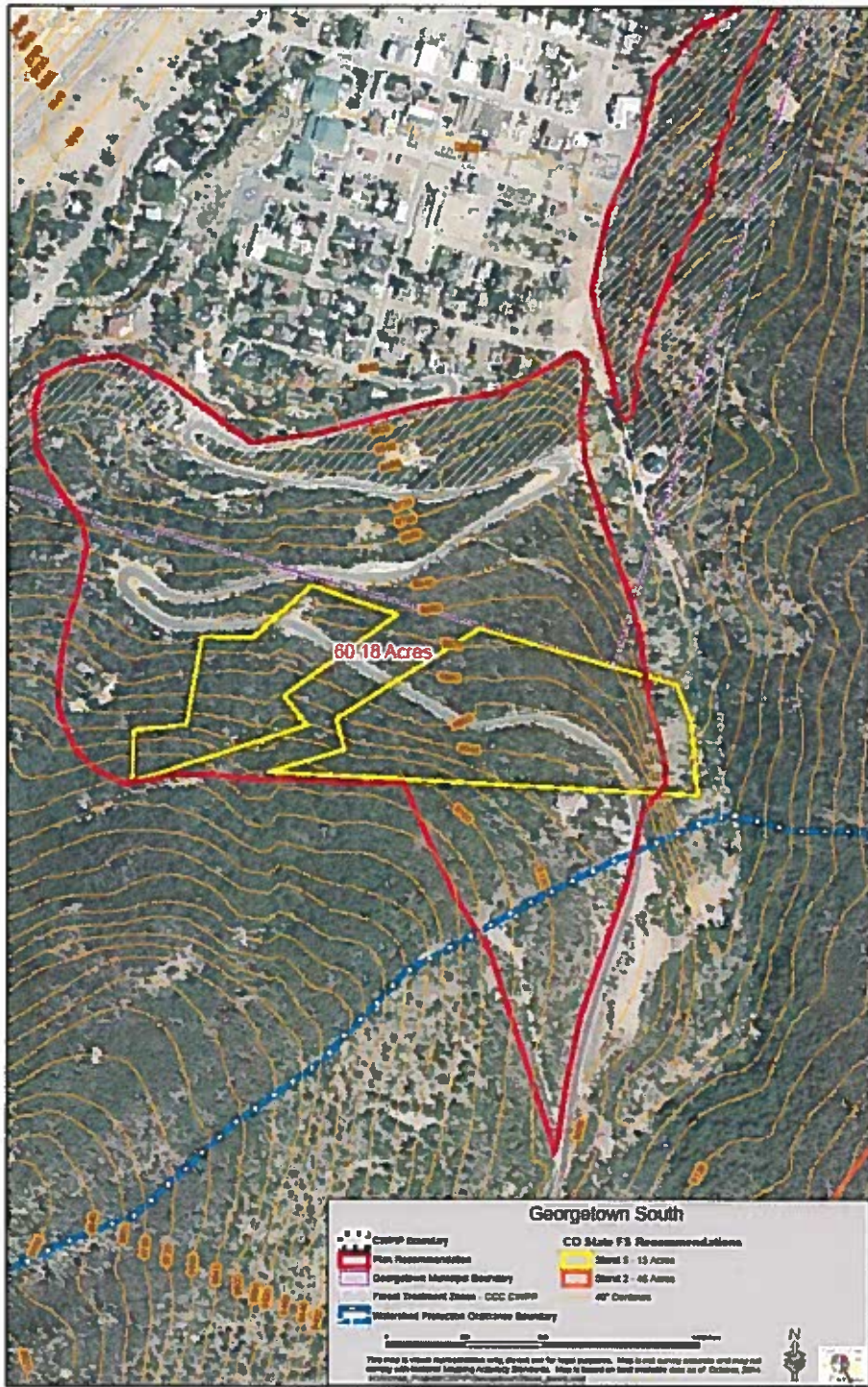
As noted in those publications, "... crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A 10-foot minimum spacing between the edges of tree crowns is recommended on level ground. "The minimum recommended fuelbreak width is approximately 300 feet for level ground. 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 27. Small, isolated groups of trees may be retained for visual diversity. Increase crown spacing around any groups of trees... 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... It is recommended that thinning be accomplished by leaving groups of 30 to 50 trees separated from adjacent groups of trees by 30-50 feet 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 \$2500/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.**



Georgetown South Mitigation Unit

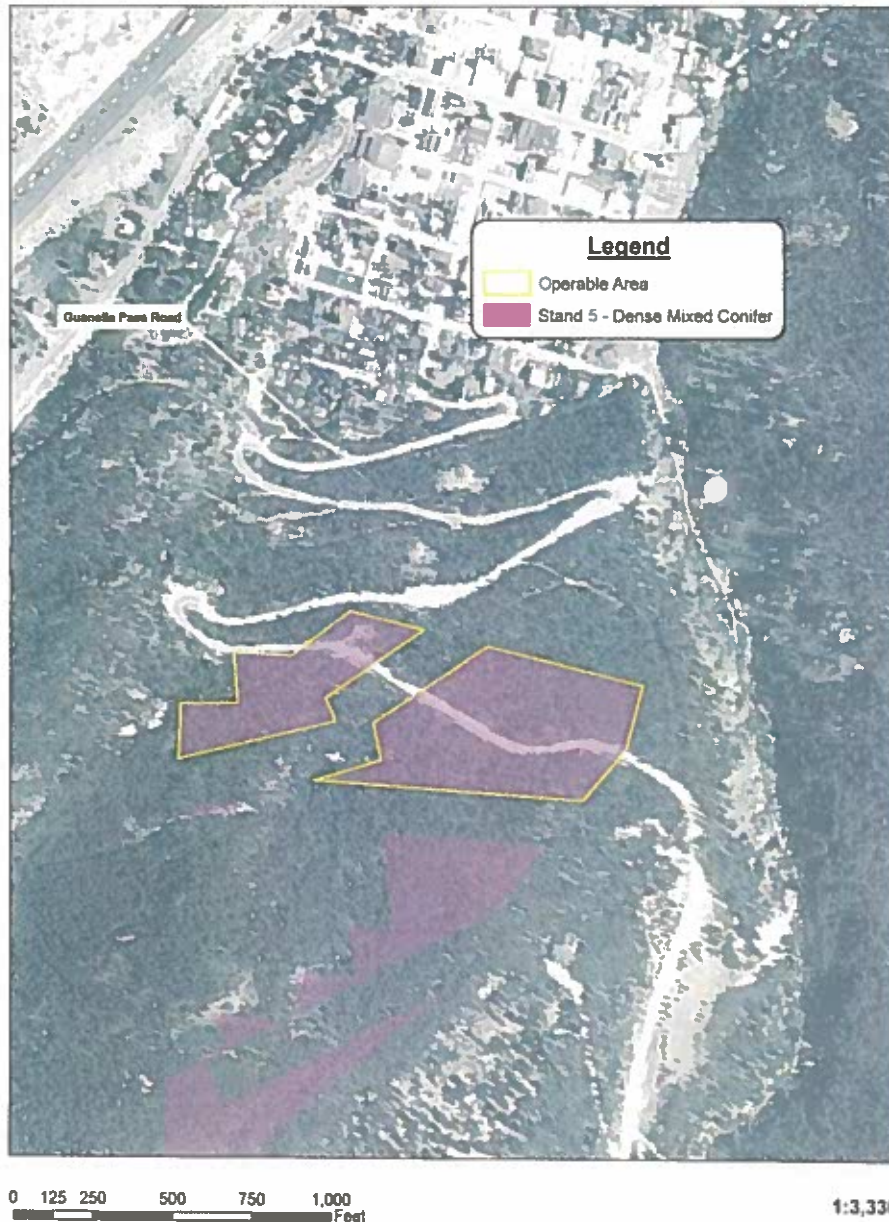


**Georgetown South Mitigation Unit**





**Figure 8**  
**Georgetown Open Space/Rec. Land**  
**Stand 5 Thinning Unit Map**



Georgetown South: CO State Forest Service Map Used in Planning

### **Recommended Treatment Priority 3: Mitigation for Georgetown East: slopes overlooking town on the east side**

The team selected the steep landscape overlooking the eastern side of Georgetown as the third priority for mitigation. The unit outline on the next page includes more acreage (60) than the state recommendation, which was limited to Georgetown Open Space lands. The area extends east to include lands which can be treated effectively in terms of recommended distances based on wildfire research and economics of such actions.

The recommendation is that the unit be analyzed by Clear Creek Fire Authority and a forester and treated wherever possible as it includes 33.21 acres in differing terrain. Treatment would be in line with the state recommendation: Some of the acres are in inoperable terrain.

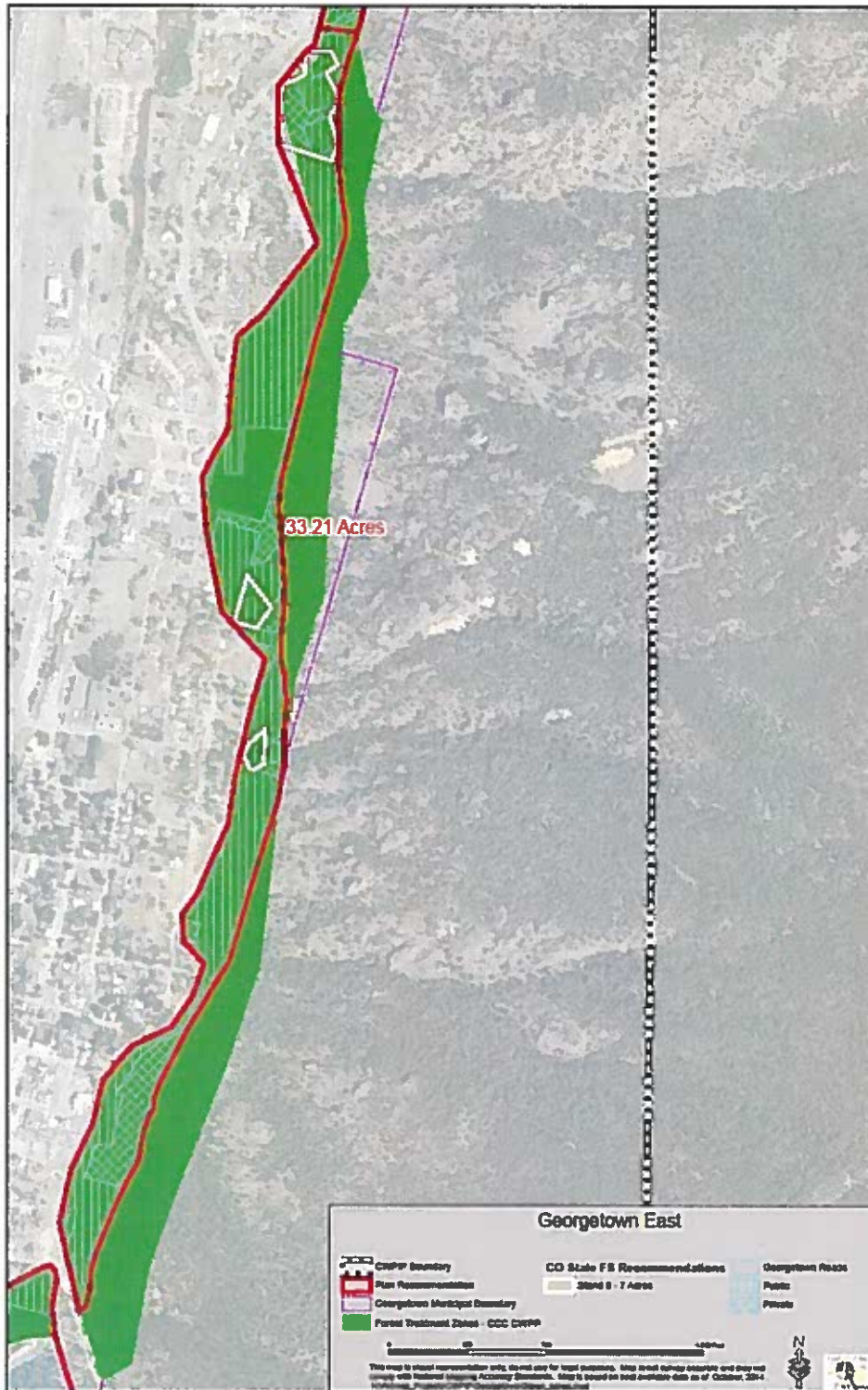
*"The portions of Stand 8 that border the town of Georgetown... should be thinned... thinning the overstory in these areas will focus less on basal area per acre and more on overstory crown spacing. Crowns spacing should be 10 to 15 feet... The majority of these areas are predominantly dense Douglas-fir with some ponderosa pine in the overstory and the occasional Rocky Mountain juniper..."*

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.**

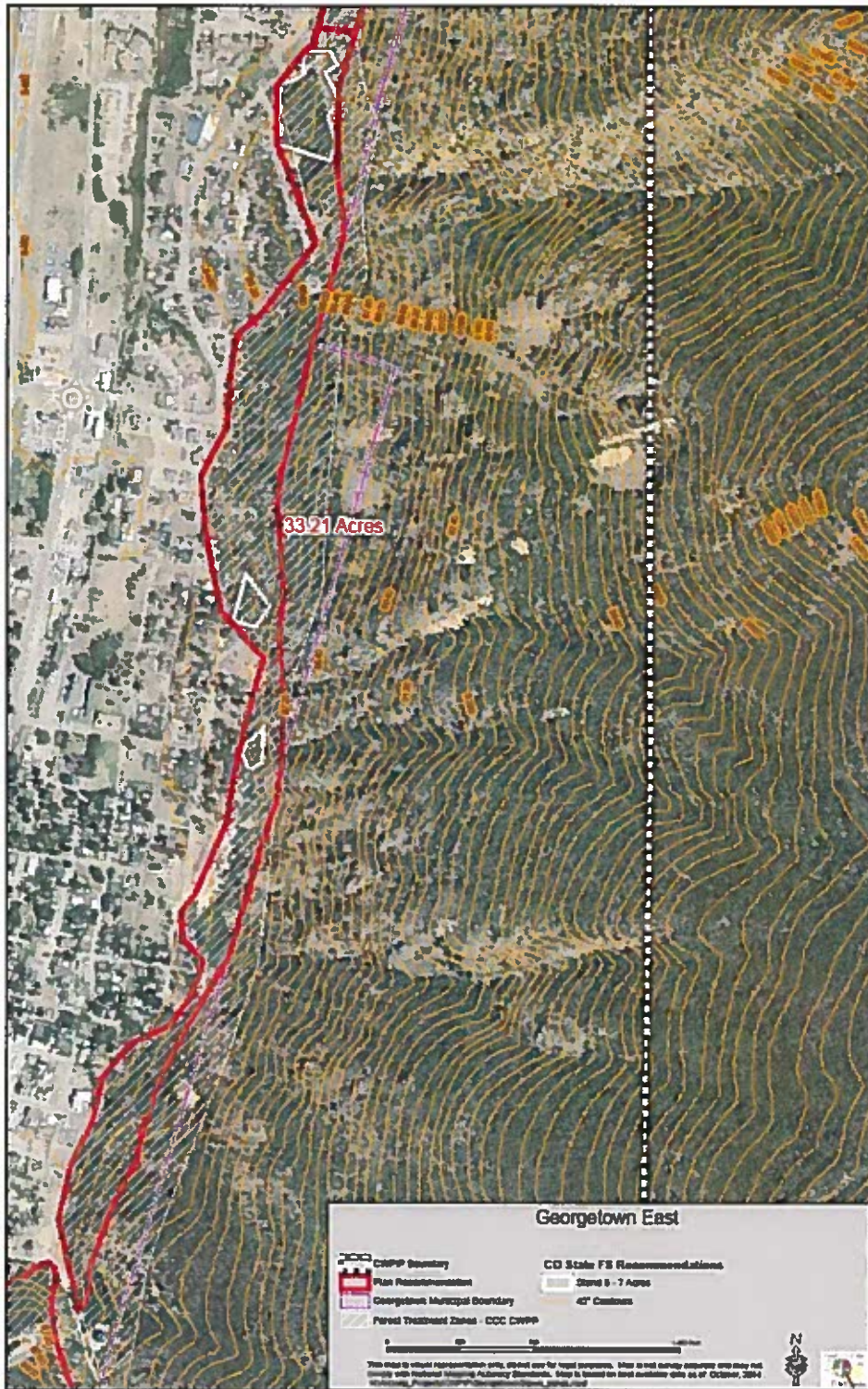
As noted in those publications, "... crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A 10-foot minimum spacing between the edges of tree crowns is recommended on level ground. "The minimum recommended fuelbreak width is approximately 300 feet for level ground. 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 27. 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 30 to 50 trees separated by 30-50 feet 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 \$2200/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.**

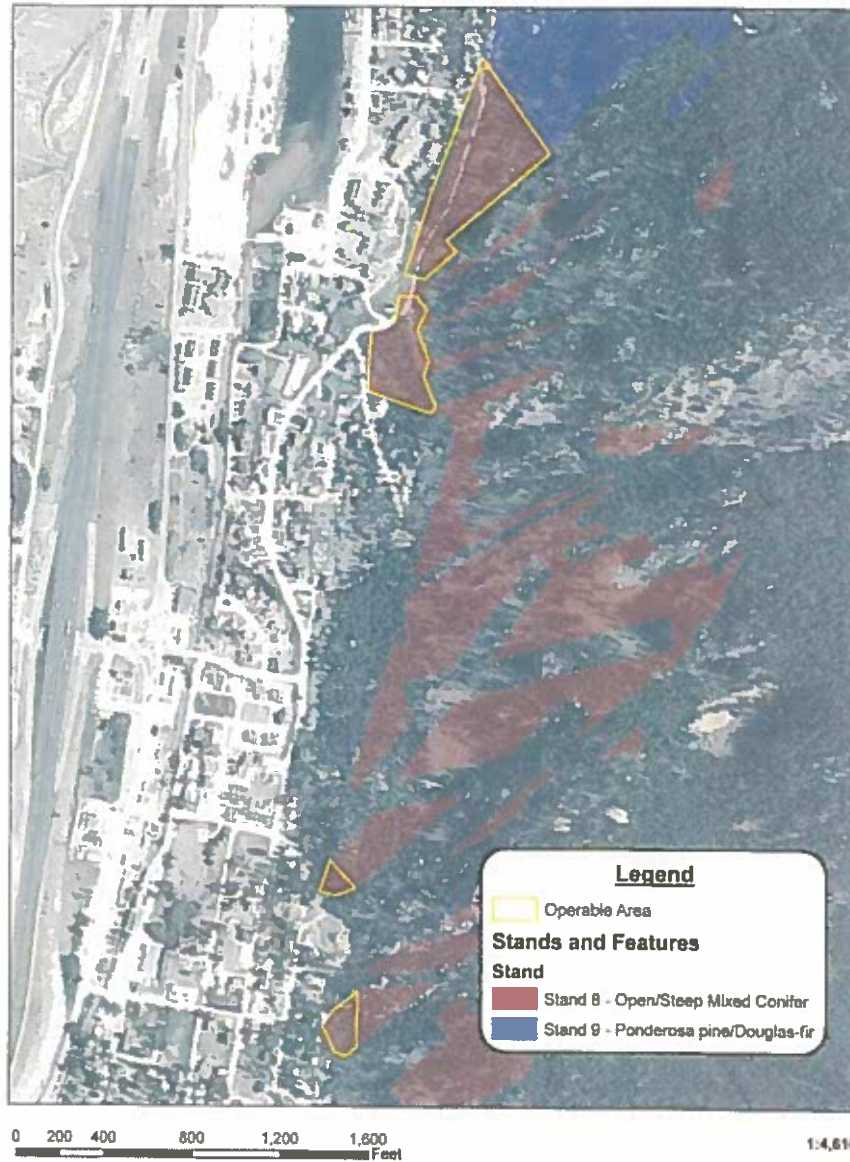


Georgetown East Mitigation Unit





**Figure 9**  
**Georgetown Open Space/Rec. Land**  
**Stand 8 Thinning Unit Map**



**Georgetown East: CO State Forest Service Map Used in Planning**

## **Recommended Treatment Priority 4: Mitigation for Silverdale Unit**

The team selected the Silverdale area next to the town water reservoir south of town as the fourth priority for mitigation. The unit outline on the next page includes 45 acres of Georgetown Open Space lands. This unit coincides with the state's recommended unit.

The recommendation is that the unit be analyzed by Clear Creek Fire Authority and a forester and treated wherever possible. Treatment would be in line with the state recommendation: As the state report states: *"Stand 2 has the highest potential of all the stands to be thinned throughout the entire stand. Of the 45 acres that comprise Stand 2, 43.8 acres are considered accessible. Generally, slopes of 30% or less and areas near existing roads are considered accessible. Some areas with steeper slopes that can still be hiked in are considered accessible, but only for operations with hand carried equipment..."*

*"The aspen in this stand are generally in decline and the aspen regeneration is in poor shape. Many lodgepole pines have had their original tops removed and now have stunted growth and poor form. Mountain pine beetle activity, old and recent, is evident in the pine species of this stand. Douglas-fir has entered and is entering the overstory crowding the pine and aspen..."*

*"Thinning in this stand should focus on improving the overall stand health by first targeting the problems outlined in the preceding paragraph... Reducing potential fire behavior and impacts will reduce potential erosion into Clear Creek."*

*"... Preferably the stand should be thinned from below to about 80 to 90 square feet of basal area per acre. Thinning to this standard will result in a removal of about 20% of the trees..."*

*"... Trees killed by insects or disease should also be removed..."*

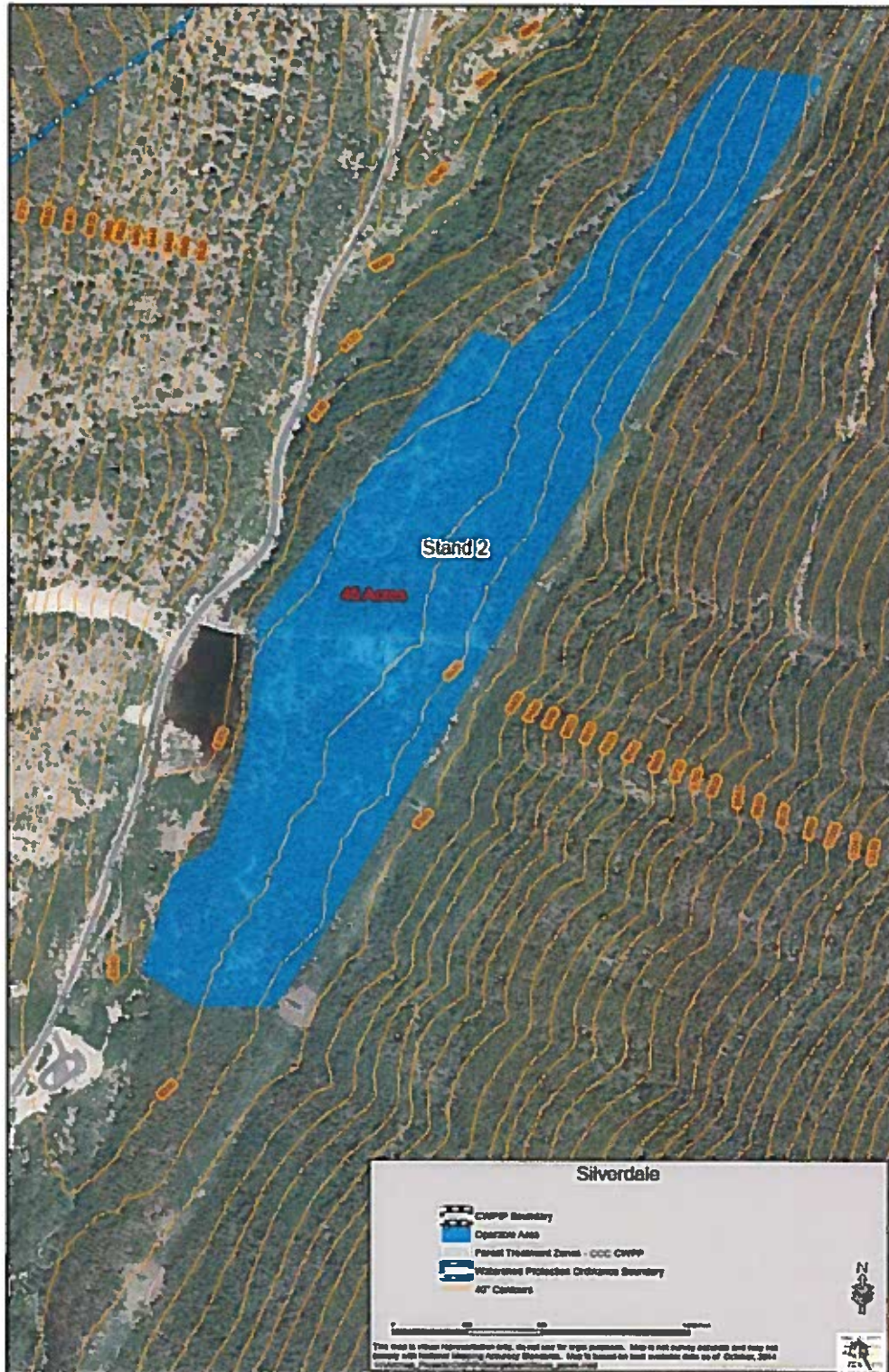
In areas of fuel break mitigation vegetation treatments could include such things as reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. **The CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities*, (Dennis, not dated) and *Lodgepole Pine Management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

As noted in those publications, "... crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A 10-foot minimum 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 27. 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 30 to 50 trees separated by 30-50 feet 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 \$2200/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.**

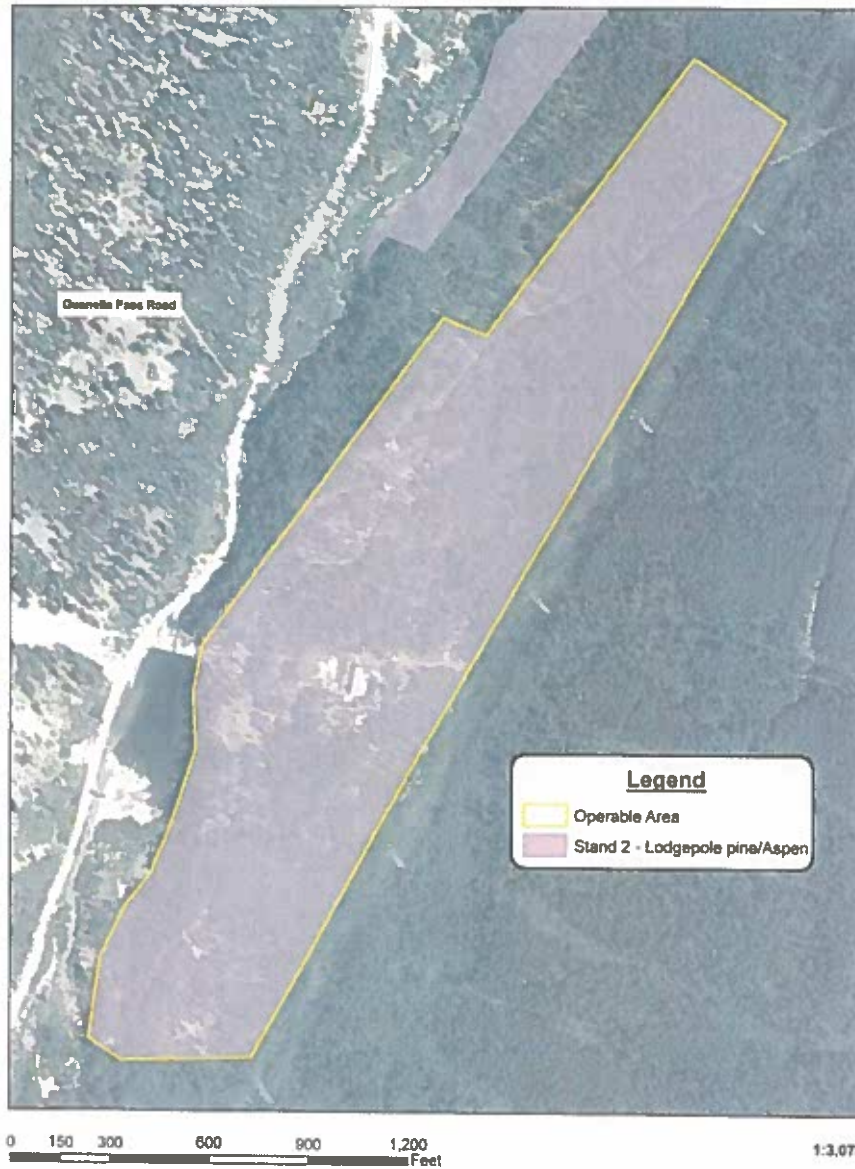


Silverdale Mitigation Unit





**Figure 7**  
**Georgetown Open Space/Rec. Land**  
**Stand 2 Thinning Unit Map**



**Silverdale Area: CO State Forest Service Map Used in Planning**

## **Recommended Treatment Priority 5: Mitigation for Georgetown North**

The team selected the steep landscape overlooking the eastern side of the north end of Georgetown as the fifth priority for mitigation. The unit outline on the next page includes 27,36 acres, including portions of the state's recommended unit 9 which was limited to Georgetown Open Space lands. Wildfire in this unit could involve all lands in the forested area.

The recommendation is that the unit be analyzed by Clear Creek Fire Authority and a forester and treated wherever possible. Treatment would be in line with the state recommendation: Some of the acres are in inoperable terrain.

*"The majority of the 52 acres in Stand 9 can be accessed from the Saxon Mountain Road. This stand is broken into a series of benches separated by steep draws and hillsides. Since access into and within this stand is made possible by the Saxon Mountain Road, a good portion of this stand, can be thinned.*

*"Stand 9 is a ponderosa pine and Douglas-fir mix... Reducing the threat of crown fires and increasing vigor in remaining trees will be the objectives in thinning this stand. Thus, this stand will be thinned to increase the overstory crown spacing to 10 to 15 feet..."*

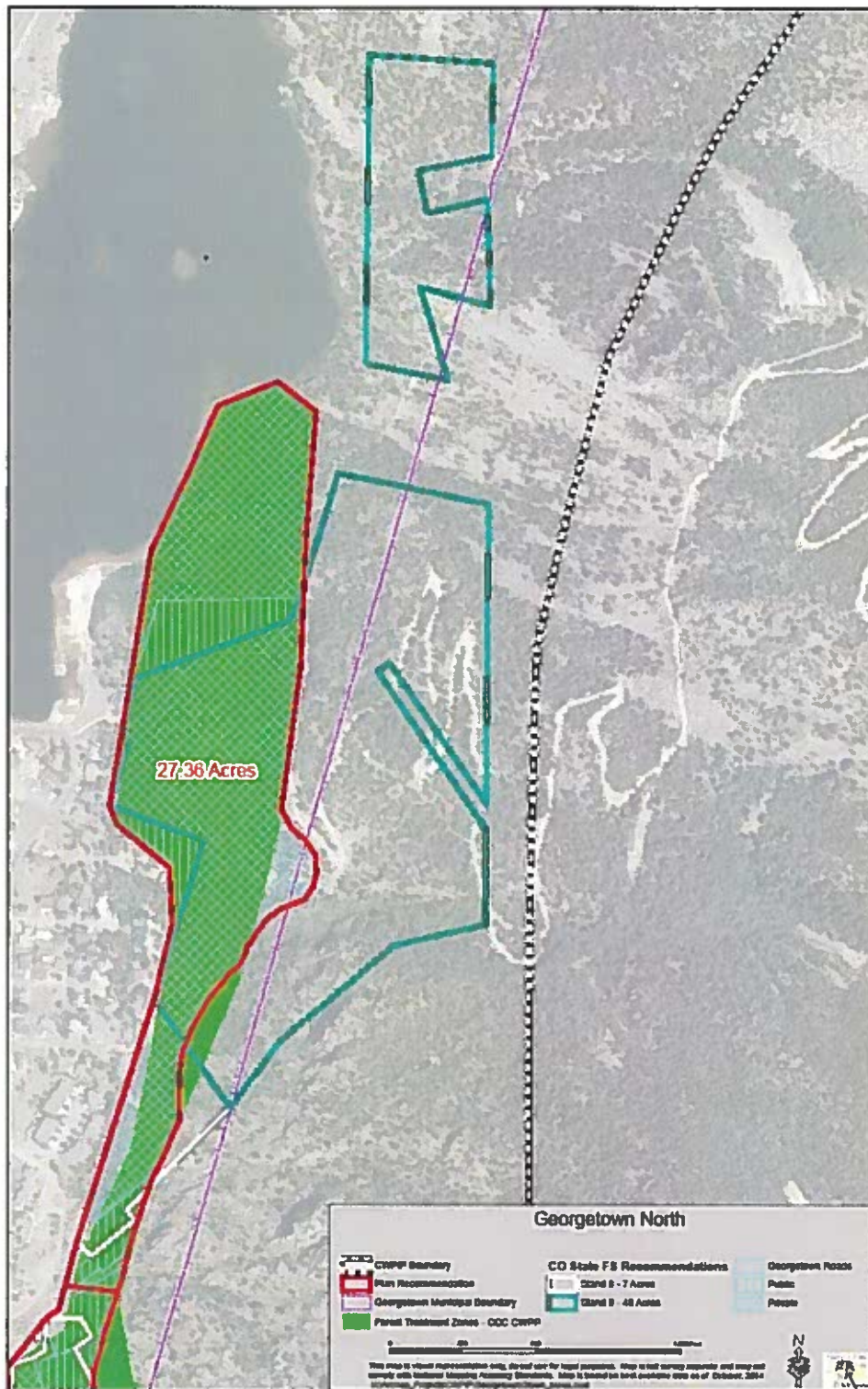
In areas of fuel break mitigation vegetation treatments could include such things as reducing biomass, thinning trees and shrubs, and/or removing ladder fuels. **The CSFS publications, *Fuelbreak Guidelines for Forested Subdivisions and Communities*, (Dennis, not dated) and *Lodgepole Pine Management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

As noted in those publications, "... crown separation is a more critical factor for fuelbreaks than a fixed tree density level. A 10-foot minimum 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 27. 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 30 to 50 trees separated by 30-50 feet 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 \$2200/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.**



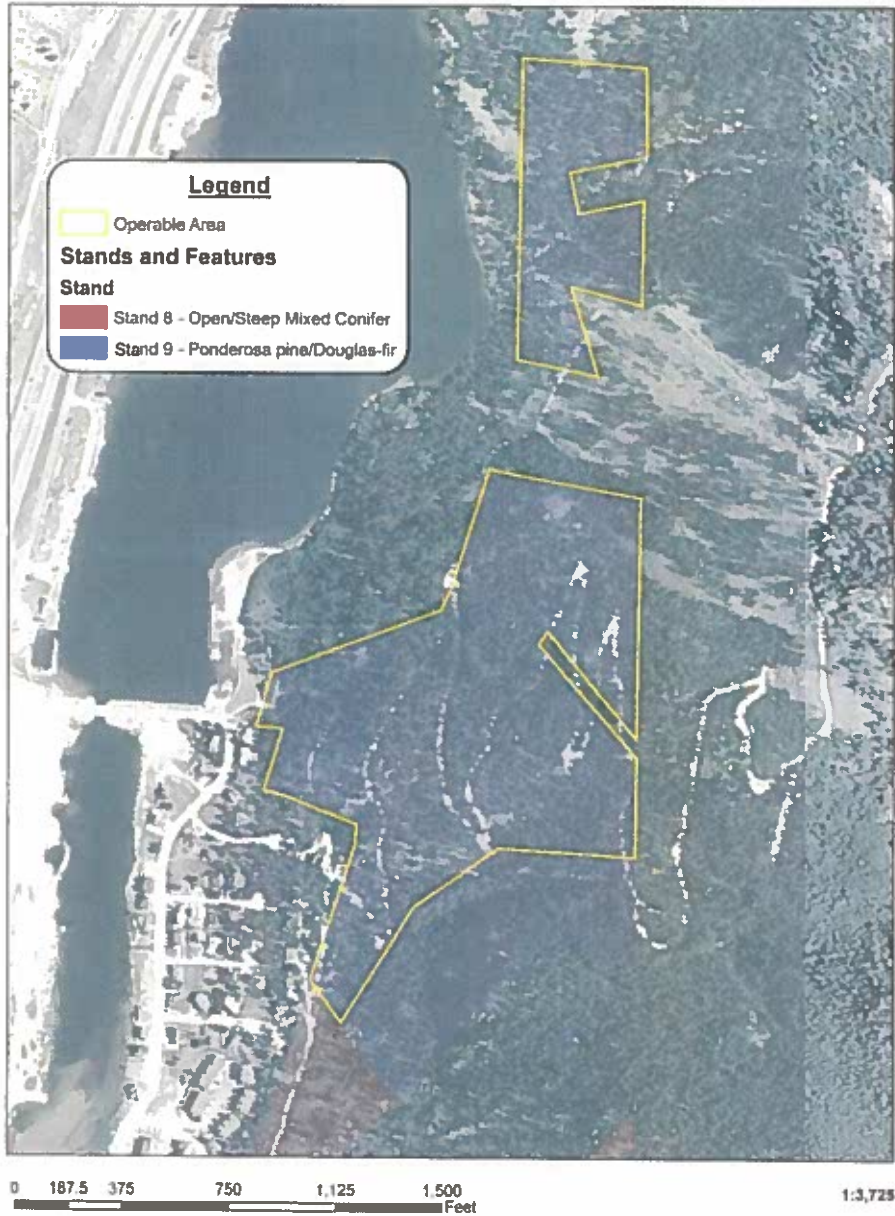
Georgetown North Mitigation Unit



Georgetown North Mitigation Unit



**Figure 10**  
**Georgetown Open Space/Rec. Land**  
**Stand 9 Thinning Unit Map**



**Georgetown North: CO State Forest Service Map Used in Planning**

## **Recommended Treatment Priority 6: Mitigation thinning on area roadways**

### **Roadways**

The CCC CWPP calls for shaded fuel breaks along “all forested secondary community access roads.” Mitigation will work to keep fire from encroaching over roadways to enable evacuation and ingress by emergency units.

While there is no significant forest encroachment along primary roadways or secondary neighborhood access, all 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 12.12 acres per mile.

Treatment would be in accordance with measures in the stewardship plan and the following:

- 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

## **Recommended Treatment Priority 7: Georgetown Watershed Area Mitigation of Georgetown Reservoir**

The Georgetown' watershed, primarily the reservoir and downstream, is the 4<sup>th</sup> priority recommendation for mitigation. These treatments would be beneficial to slow the spread of wildfire and mitigate its effects, protecting the area immediately surrounding the reservoir to avoid siltation into the reservoir, and protecting the roadway into the reservoir and the area downstream from the reservoir.

Section 7.2.7 of the CCC CWPP notes that: *"In the early strategic planning phases of the project, the county's watershed resources were identified as 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... 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.*

### **Georgetown 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 37. 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.

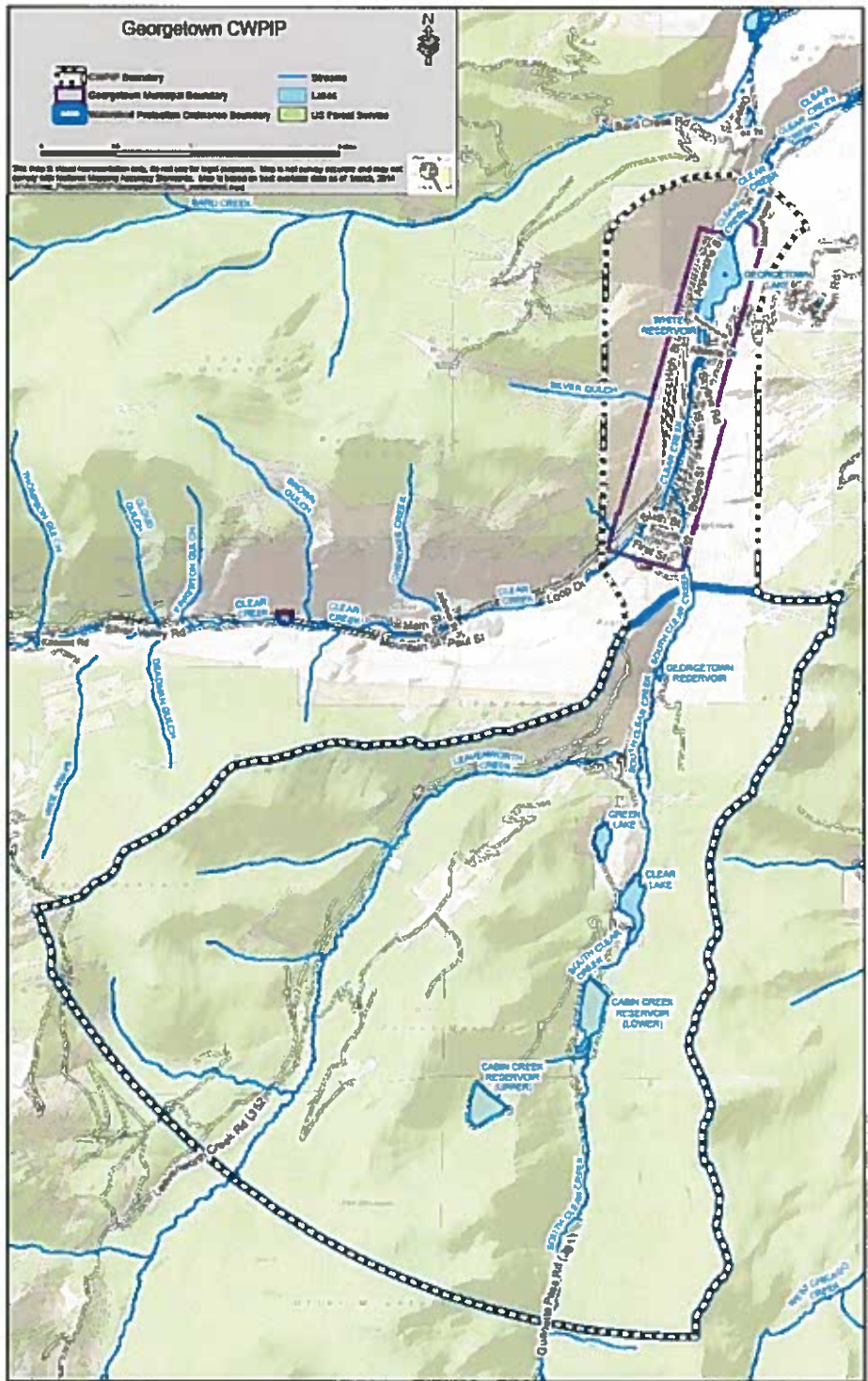


Dead, diseased, weakened, and malformed conifer trees would be removed. The harvesting of conifer trees would occur as necessary to achieve the desired density. Conifer trees would be limbed up approximately 10 feet from the ground and limbs removed. Ladder fuels, such as small trees and shrubs, are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

**Leavenworth Creek Road:** The team will combine with CCC and CCFA to review the Leavenworth Creek road to see if areas need to be thinned for effective evacuation and access.

**Green and Clear Lakes and Lower and Upper Cabin Creek Reservoirs:** Mitigation around Green and Clear lakes and both Lower and Upper Cabin Creek Reservoir appears to be good. The team supports continued efforts to keep areas immediately adjacent to these bodies of water clear and/or thinned to avoid hot burning fires from fostering siltation into them.

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 \$2500/acre. **The community team should consult with the Golden District of the Colorado State Forest Service advice on getting an up-to-date cost estimate when it begins the process to accomplish this project.**



**Georgetown Watershed Protection Area**



**Figure XX: Green Lake and Clear Lakes**



**Figure xx: Lower Cabin Creek Reservoir**



**Figure xx: Upper Cabin Creek Reservoir**

## **Recommended Treatment Priority 8 Power Transmission and Distribution Lines Mitigation Actions**

The Georgetown 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 their continued maintenance to provide protection for both electrical distribution and mitigation on potential wildfire affects as they might impact on the Georgetown area.

The recommendation is that the team and community should work with the transmission entities to improve and maintain utility line fuel breaks in accordance with industry standards to enhance the protection of these facilities during any wild fire event. The power and communication companies should be consulted to identify their standards and any unique protection methods recommended. The objective is to create a fire resistant landscape that accommodates power and communication transmission needs plus the protection of related infrastructure.

Mitigation should assure right-of-way around power lines is free of trees or limbs that may cause damage, cost, environment, practicality and capacity. The objective of this project is development of a fire resistant landscape that accommodates electrical power transmission needs.

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 an Xcel Energy company.

PSCo owns and maintains high voltage transmission lines that traverse through the Georgetown plan area from North to South along the West side of Interstate 70 crossing through Georgetown and South generally along South Clear Creek and Leavenworth Creek drainage areas.

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 Georgetown 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..."

## 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. An example would be the scheduling of an annual "Slash Day," taking place every first Saturday of October for instance."*

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 Georgetown 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.



*The Georgetown 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 representation from the included areas in and around Georgetown, the Georgetown council, Georgetown Historic District, 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 groups is very important. This representation could 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 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: newspaper; 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 Georgetown 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 CWPIP 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

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

## **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: Clear Creek County Wildfire Hazard Mitigation Requirements**

## APPENDIX A

### Websites and Publications for Assistance

Following is a listing of websites and publications available from the Colorado State Forest Service and elsewhere which provide guidance on a range of mitigation activities and grant opportunities which will aid communities in lessening the impact of wildfire. *Residents are encouraged to view these sites.*

The following publications can be viewed on the Colorado State Forest Service website page for Publications: <http://csfs.colostate.edu/pages/pub-csfs2.html> (or linked directly from below). If you need copies for events contact the CSFS to order (see website) or you may have to print them from the website.

**Funding Assistance:** <http://csfs.colostate.edu/pages/funding.html>

**Grant Opportunities:**

CO State Forest Service:

- Land Owner & Assistance Programs: <http://csfs.colostate.edu/pdfs/Landowner-CommunityFinancialAssistancePrograms-rev4-21-14.pdf>
- Natural Resource and Grant Assistance Database: <http://nrdb.csfs.colostate.edu/Home/Search>

Firewise: <http://www.firewise.org/>

**General Resources** (Ctrl + Click to follow to site)

[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 :

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

Creating Wildfire Defensible Zones: THIS IS A BASIC DEFENSIBLE SPACE DOCUMENT  
[http://csfs.colostate.edu/pdfs/FIRE2012\\_1\\_DspaceQuickGuide.pdf](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](http://csfs.colostate.edu/pdfs/2011_co_wildfire_brochure.pdf)  
Landowners Guide to Thinning: [http://csfs.colostate.edu/pdfs/landowner\\_g4thin\\_scr.pdf](http://csfs.colostate.edu/pdfs/landowner_g4thin_scr.pdf)  
Residential Fire Resistant Paint:

### **FireWise Construction**

Firewise Construction: Design and Materials by Peter Slack

Decks

Roofing Materials

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/>

**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](http://frontrangeroundtable.org/Home_Page.php)

**Healthy Forest Restoration Act –background and information:**

[http://en.wikipedia.org/wiki/Healthy\\_Forests\\_Initiative](http://en.wikipedia.org/wiki/Healthy_Forests_Initiative)

**Healthy Forest Restoration Act – official website:** <http://www.forestsandrangelands.gov/>

## 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.

### Clear Creek County CWPP

### Appendix D – Community Wildfire Hazard and Risk Assessments

**Community Survey Summaries and Hazard Ratings**

CLEAR CREEK COUNTY WUI	Forms of Access			Vegetation	Topography	Other Factors		Construction	Fire Protection			Score	Overall Hazard Rating
	Open Areas (1)	Road (High) (4)	Road Corridor (1)			Fire Service Access (8)	Other (1)		Fire Protection (1)	Fire Protection (2)	Fire Protection (3)		
Alvarado	1	1	0	1	7	1	1	1	1	1	1	67	MODERATE
Bakerville	2	2	2	3	10	1	1	1	1	1	1	90	HIGH
Bard Creek	2	2	2	3	10	1	1	1	1	1	1	87	MODERATE
Beaver Brook	3	3	3	4	10	2	2	2	2	2	2	116	MODERATE
Bendemeer Valley, etc. EPPD	0	0	0	0	0	0	0	0	0	0	0	54	HIGH
Berthoud Falls	1	1	1	1	10	1	1	1	1	1	1	90	HIGH
Birds Edge	2	2	2	3	10	1	1	1	1	1	1	90	MODERATE
Blue Valley	2	2	2	3	10	1	1	1	1	1	1	112	MODERATE
Brock Forks EPPD	2	2	2	3	10	1	1	1	1	1	1	113	MODERATE
Chicago Creek	1	1	1	1	10	1	1	1	1	1	1	103	MODERATE
Econo Hills EPPD	2	2	2	3	10	2	2	2	2	2	2	124	MODERATE
Empire	1	1	1	1	1	1	1	1	1	1	1	58	MODERATE
Evangelical West EPPD	2	2	2	3	10	1	1	1	1	1	1	103	MODERATE
Fall River	2	2	2	3	10	1	1	1	1	1	1	100	MODERATE
Floyd Hill EPPD	1	1	1	1	10	1	1	1	1	1	1	115	MODERATE
Floyd/Saddback	1	1	1	1	10	1	1	1	1	1	1	115	MODERATE
French Springs EPPD	2	2	2	3	10	1	1	1	1	1	1	98	MODERATE
Georgetown	3	3	3	4	1	1	1	1	1	1	1	83	MODERATE
Hoffman Gulch	2	2	2	3	10	1	1	1	1	1	1	121	MODERATE
Henderson Mine	2	2	2	3	10	1	1	1	1	1	1	43	MODERATE
Herman Gulch	2	2	2	3	10	1	1	1	1	1	1	113	MODERATE
Hossen Valley	2	2	2	3	10	1	1	1	1	1	1	97	MODERATE
Idaho Springs	1	1	1	1	1	1	1	1	1	1	1	58	MODERATE
Uma Bear	2	2	2	3	10	1	1	1	1	1	1	103	MODERATE
Lower 103	1	1	1	1	1	1	1	1	1	1	1	53	MODERATE
Lower Fall River	1	1	1	1	1	1	1	1	1	1	1	90	MODERATE
Lower Mill Creek	2	2	2	3	10	1	1	1	1	1	1	83	MODERATE
Lower Soda Creek	1	1	1	1	1	1	1	1	1	1	1	76	MODERATE
Middle 103	1	1	1	1	1	1	1	1	1	1	1	87	MODERATE
Montana Park	2	2	2	3	10	1	1	1	1	1	1	102	MODERATE
Mountain Lane	2	2	2	3	10	1	1	1	1	1	1	103	MODERATE
Peaceful Valley	2	2	2	3	10	1	1	1	1	1	1	86	MODERATE
Pine Slope	1	1	1	1	1	1	1	1	1	1	1	83	MODERATE
Pine Valley Estates EPPD	0	0	0	0	0	0	0	0	0	0	0	55	MODERATE
Silver Lakes	0	0	0	0	0	0	0	0	0	0	0	64	MODERATE
Silver Pump	1	1	1	1	1	1	1	1	1	1	1	61	MODERATE
Silver Valley	0	0	0	0	0	0	0	0	0	0	0	86	MODERATE
Soda Creek	2	2	2	3	10	1	1	1	1	1	1	97	MODERATE
South Spring	2	2	2	3	10	1	1	1	1	1	1	114	MODERATE
Square Mountain	2	2	2	3	10	1	1	1	1	1	1	114	MODERATE
Stevens Gulch	2	2	2	3	10	1	1	1	1	1	1	113	MODERATE
St. Marys/Alice	2	2	2	3	10	1	1	1	1	1	1	123	MODERATE
Trail Creek	2	2	2	3	10	1	1	1	1	1	1	113	MODERATE
Upper Fall River	2	2	2	3	10	1	1	1	1	1	1	88	MODERATE
Upper Mill Creek	2	2	2	3	10	1	1	1	1	1	1	103	MODERATE
Ute Creek	2	2	2	3	10	1	1	1	1	1	1	103	MODERATE
Virginia Canyon	1	1	1	1	1	1	1	1	1	1	1	84	MODERATE
Yoni Gulch	3	3	3	4	1	1	1	1	1	1	1	82	MODERATE

## 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. 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".
  - 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.
  - 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](http://www.uphelp.org/pdfs/Wheretogoforhelp.pdf)

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

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.*



## APPENDIX D Wildfire Action Planning

### **Code Red**

### **Smart 911**

**The Ready, Set, Go! Program (RSG):** [www.wildlandfireRSG.org](http://www.wildlandfireRSG.org)

### **CodeRed:**

**CodeRED: 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 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.

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 should display the agency's name and a call-back number. The e911 system works with all 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 e911 calls.

### **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:**

<https://cne.coderedweb.com/Default.aspx?groupid=qx19iUOfYVZj2Ov9A12syQ%3d%3d>.

### **Smart 911:**

Smart911 is a free service that allows citizens across the U.S. to create a Safety Profile for their household that includes any information they want 9-1-1 to have in the event of an emergency. Then, when anyone in that household dials 9-1-1 from a phone associated with their Safety Profile, their profile is immediately displayed to the 9-1-1 call taker providing additional information that can be used to facilitate the proper response to the proper location. At a time when seconds count, being about to provide 9-1-1 with all details that could impact response the second an emergency call is placed could be the difference between life and death. It is on the

internet at: <https://www.smart911.com/>. 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 stresses that when firefighters encourage residents to take personal responsibility for preparing their property and family for wildland fire, residents become an active part of the solution to the problem of increasing fire losses.

### **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:

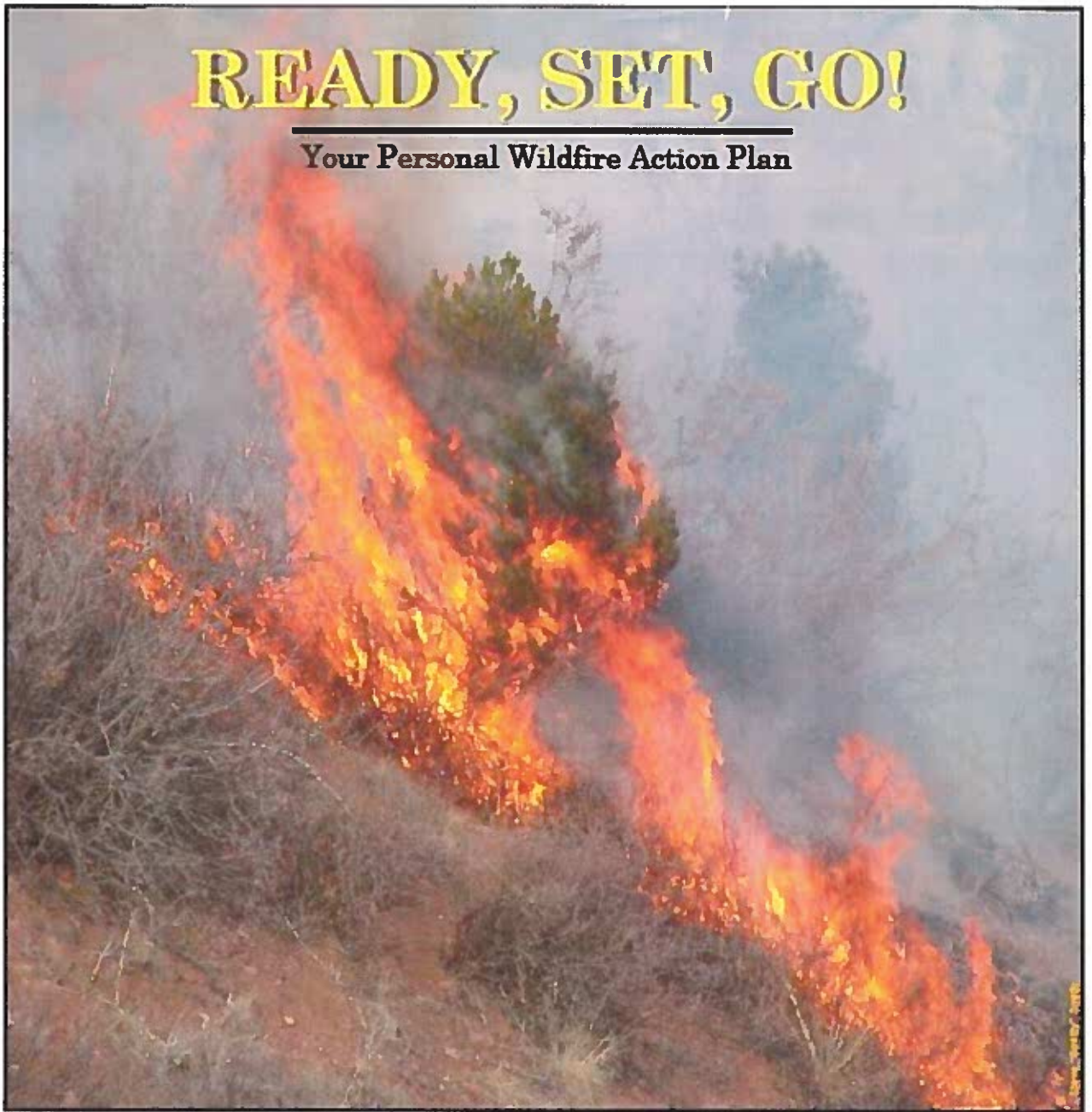
- **Ready** – Preparing for the Fire Threat: Be Ready, Be Firewise. Take personal responsibility and prepare long before the threat of a wildfire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home 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](http://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.

The RSG Program provides tools through its website, [www.wildlandfireRSG.org](http://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**

# 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 resistant 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:

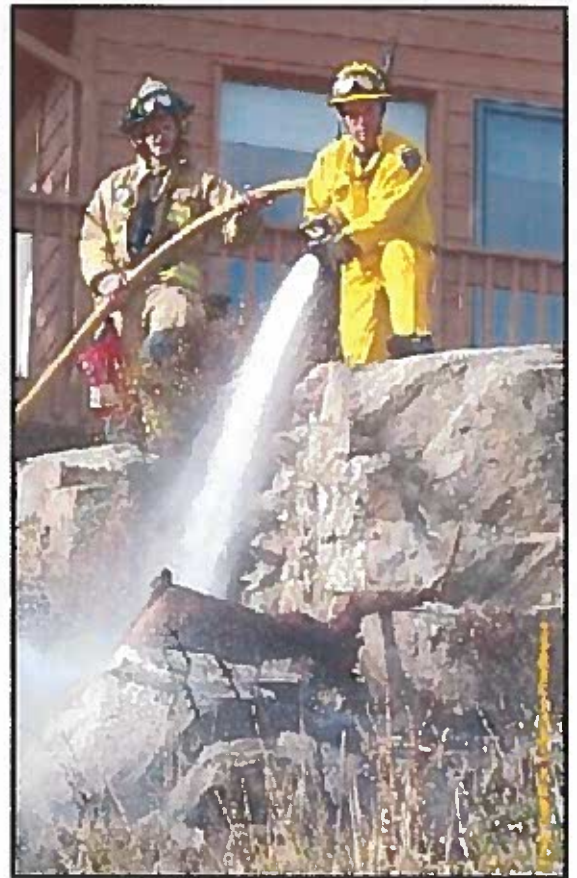
**Pikes Peak Wildfire Prevention Partners**

## Living in the Wildland Urban Interface and the Ember Zone

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

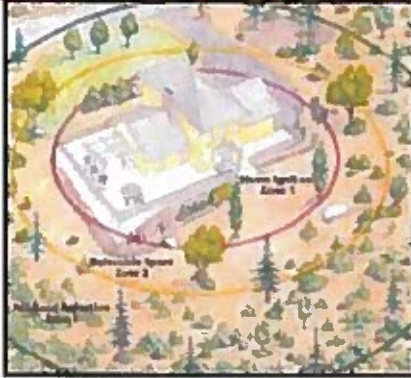
### Defensible space works!

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.