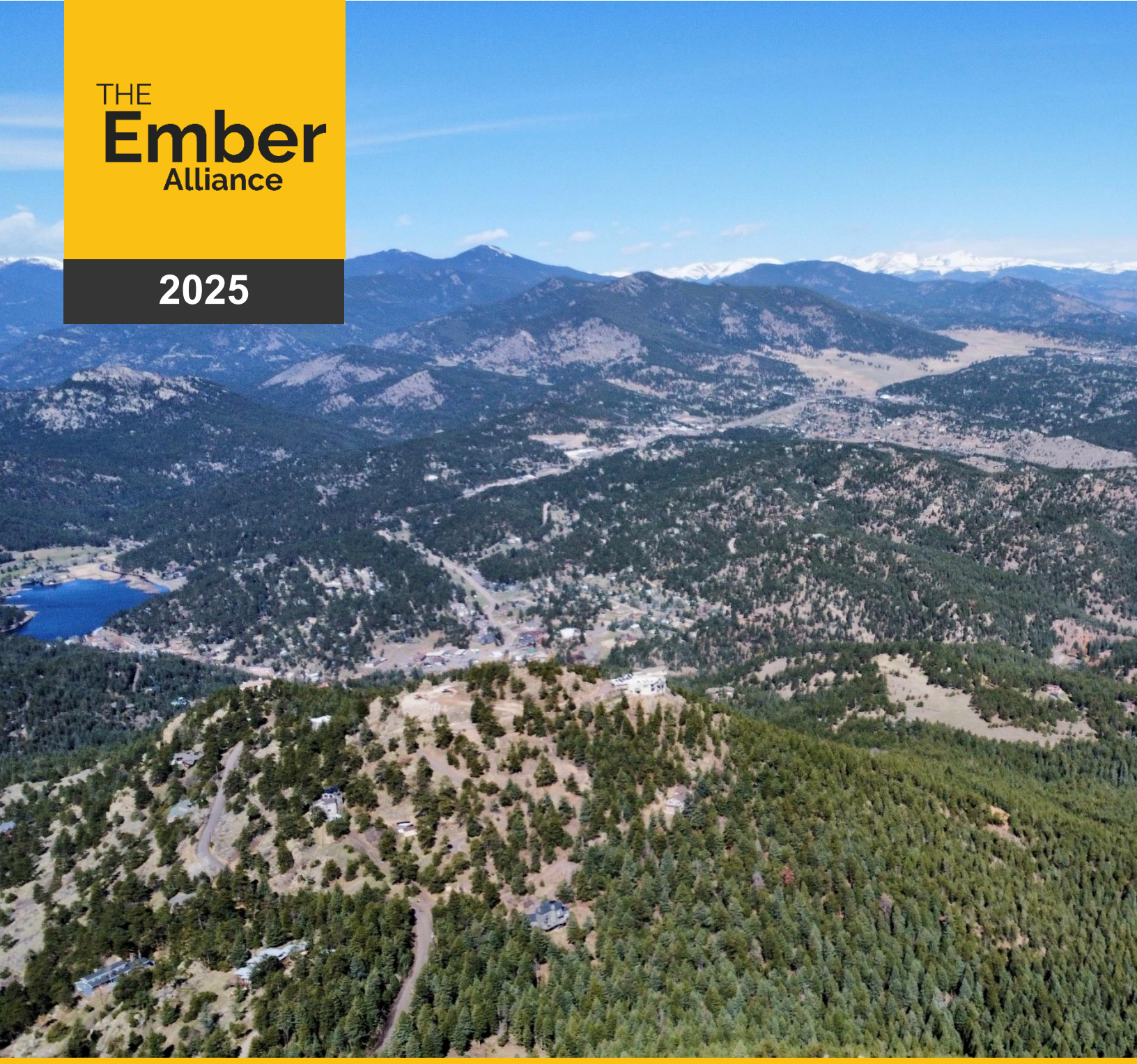
THE Ember Alliance

2025



EVERGREEN FIRE PROTECTION DISTRICT

JEFFERSON AND CLEAR CREEK COUNTIES, COLORADO

Community Wildfire Protection Plan

Evergreen
Fire Protection District
Community Wildfire Protection Plan
2025 Update

PREPARED FOR EVERGREEN FIRE/RESUCE

1802 BERGEN PKWY, EVERGREEN, COLORADO 80439

PREPARED BY THE EMBER ALLIANCE

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Cover photo credit: Keenan Prouty, Evergreen Fire/Rescue.

APPROVAL AND SIGNATURES

This Community Wildfire Protection Plan (CWPP) was developed in response to the Healthy Forest Restoration Act of 2003 and complies with CWPP standards set forth by the 2022 Colorado State Forest Service Minimum Standards for Developing CWPPs. The CWPP is a collaborative effort to guide our wildfire protection. Where possible, we intend to apply the recommended practices to improve our community and increase public safety.

The following individuals and organizations were engaged in developing the Evergreen Fire Protection District CWPP and approve the 2025 update:

John White, Supervisory Forester
Colorado State Forest Service

Signature: _____

Date: _____

Mike Weege, Fire Chief
Evergreen Fire/Rescue

Signature: _____

Date: _____

Name, Title
Jefferson County

Signature: _____

Date: _____

Name, Title
Clear Creek County

Signature: _____

Date: _____

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How to use this CWPP Document

This document is designed for everyone that lives, works, and manages land within and around the district. Different sections will be most helpful to different people; please use this guide to direct you to the resources most relevant to you.

I want to learn the basics about wildfire, my community, and CWPPs.	• Section 1.a to learn about CWPPs. • Section 2.f to learn about wildfire threats in the district. • Appendix A for an introduction to fire behavior.
I want to learn about protecting my home and family.	• Section 3.a to learn about the actions you can take, including detailed recommendations and research-backed guidance, for protecting your home and family. • Section 3.b to find detailed risk ratings and recommendations for your neighborhood.
I want to learn about community-led action.	• Sections 3.a, 3.b, and 4.d to learn about the actions communities can take together to better protect everyone. • Section 5.b to find all specific recommended actions for the community.
I want to learn about landscape-scale wildfire mitigation.	• Section 2.e, 2.f and 2.g to learn about fire history and treatment history in the district. • Section 4.b and 4.c to learn about priority projects for the district. • Sections 4.b, 4.c, and 4.d for general recommendations for stand-scale and roadside fuel treatments.
I want to learn about the science behind these recommendations.	• Appendix B to learn about modeling methodology for fire behavior and evacuation modeling, on-the-ground hazard assessments, and treatment prioritization. • Section 7 to see all referenced research and information.

Acronyms

APCD	Air Pollution Control Division
BLM	Bureau of Land Management
EFPD	Evergreen Fire Protection District
EFR	Evergreen Fire/Rescue
EMS	Emergency Medical Staff
FPD	Fire Protection District
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
COAL	Colorado All-Lands assessment by the US Forest Service
CPW	Colorado Parks & Wildlife
CSFS	Colorado State Forest Service
CWDG	Community Wildfire Defense Grant
CWPP	Community Wildfire Protection Plan
DFPC	Division of Fire Prevention and Control
DMP	Denver Mountain Parks
DNR	Department of Natural Resources
FEMA	Federal Emergency Management Agency
HVRAs	Highly Valued Resources & Assets
HIZ	Home Ignition Zone
HOA	Homeowner's Association
IIBHS	Insurance Institute for Business & Home Safety
IRPG	Incident Response Pocket Guide
ISO	Insurance Services Office
JCD	Jefferson County Conservation District
JCOS	Jefferson County Open Space
JCPH	Jefferson County Public Health
JCSO	Jefferson County Sheriff's Office
NFPA	National Fire Protection Association
NWCG	National Wildfire Coordinating Group
OEM	Office of Emergency Management
PBC	Pile Burn Cooperatives

PODs	Potential Operational Delineations
TEA	The Ember Alliance
USFS	U.S. Forest Service
WRCB	Wildfire Resiliency Code Board
WUI	Wildland-Urban Interface

Refer to the **Glossary** on page 351 for definitions of the words and phrases used throughout this document

1. Introduction

1.a. Purpose and Need for a CWPP

Community Wildfire Protection Plans (CWPPs) help communities assess local hazards and identify strategic investments to mitigate risk and promote preparedness (**Figure 1.a.1**). Assessments and discussions during the planning process assist fire protection districts with fire operations in the event of a wildfire and help residents and communities prioritize mitigation actions. These plans also assist with funding gaps for fuel mitigation projects since many grants require an approved CWPP.

> *"Our forests were designed to have fire naturally move through them. And we took that natural process away from our environment and then we built a whole bunch of houses in it at the end of narrow, windy roads and steep canyons. We have created an overgrown forest that now becomes far more susceptible to disease and infestation. That is creating a lot of die-off within our forest stands. With these unhealthy forests and our homes built right into the middle of them, we have created a very scary environment." – Jess Moore, EFR Wildland Project Coordinator*

The Evergreen Fire Protection District (EFPD) is a Special District organized under Colorado Revised Statutes Title 32 to provide fire protection for the community of Evergreen. EFPD is the managing special district and Evergreen Fire/Rescue (EFR) is the name used to encompass EFPD and the operating arm managed by the Fire Chief as directed by the district Board of Directors. For this CWPP, EFR will represent the entire department. The physical EFPD district will be referred to as "the district." The district encompasses 126 square miles and is located west of Denver in the foothills of Colorado's Front Range (**Figure 1.a.2**). The district is split between Clear Creek County and Jefferson County and is the ancestral lands of the Ute and Cheyenne First Nations.

***Figure 1.a.1**. Elements of a holistic and actionable CWPP.*

The 2025 CWPP is a robust update to the 2020 CWPP that takes advantage of recent advances in fire science and addresses changes to fire risk, home construction, and other characteristics of the community. The CWPP includes a wildfire risk analysis, prioritization of mitigation activities, and implementation recommendations. For the purpose of this CWPP, the district was divided into 26 plan units for comparing relative risk across the district and making specific recommendations to address wildfire risk and increase emergency preparedness (**Figure 1.a.3**).

This document is a tool for EFR, land managers, communities, homeowner's associations (HOAs), Community Wildfire Ambassadors, and residents to prioritize projects that will make the district a safer and more resilient community to wildfire. The objectives of this project are to:

- Produce a living, actionable CWPP based on analyses and community values across the district.
- Provide recommendations for individuals, communities, and agencies for reducing fire hazards, hardening homes, and increasing evacuation safety.
- Set the stage for planning and implementation by EFR, agency partners, HOAs, and residents to mitigate hazards and promote community preparedness.
- Provide clear, strategic, and prioritized projects for all levels of implementation.
- Provide information on individual and community wildfire history and risk, actions that can be taken to reduce it, and available services and programs.
- Engage community members during the CWPP process to ensure local needs and concerns are addressed.

Complex interactions among wildland fuels, weather, and topography determine how wildfires behave and spread. Many aspects of wildfires are predictable based on known scientific research on the physical processes driving fire. Much of the work in this CWPP is based on this scientific research and computer models of wildfire behavior. A basic understanding of fire behavior aids in interpreting the findings and recommendations reported herein. See **Appendix A. Introduction to Wildfire Behavior and Terminology** and the **Glossary** for key terms.

Photo credit: Keenan Prouty, EFR.

Why is the CWPP relevant to me?

Becoming a fire adapted community that can safely coexist with wildland fire takes a concerted, ongoing effort by everyone who lives, owns property, protects, or manages land in and around this community. Conditions in the district share some risk factors common to past catastrophic wildfires across the country. This CWPP provides recommendations for how to prepare your family to safely evacuate during a wildfire, how to mitigate your home ignition zone to give your house a chance to stand strong during wildfires, and how to protect the lives of firefighters engaged in protecting your community.

Even if you do not have a permanent home on your property, you can take steps to protect your assets, including the value of your property; areas that are heavily burned have less aesthetic and monetary value. More importantly, work you do to reduce fire risk on your property can amplify the work that your neighbors do on theirs, resulting in greater risk reduction for everyone. Removing trees from along roadways can increase the visibility of your property to firefighters, increase the accessibility of your property for fire engines, and reduce the chance that non-survivable conditions can develop and entrap residents and first responders during wildfires.

This CWPP is a call to action to do your part to continue making the district a beautiful and safe community. Land management partners and EFR are here to support your individual efforts, and they are committed to taking action to reduce wildfire risk and increase emergency preparedness for the benefit of this amazing community.

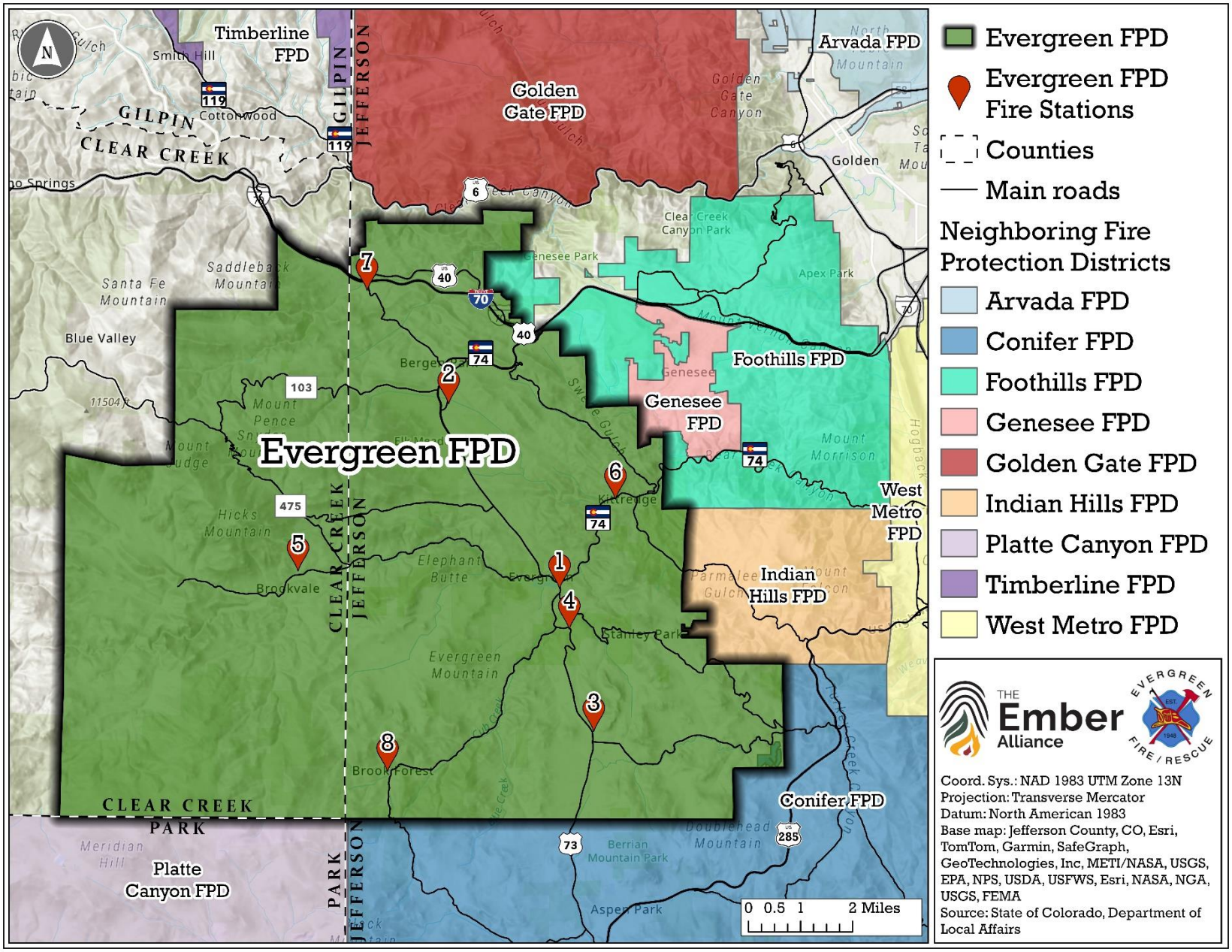


Figure 1.a.2. *Boundary of the district in Jefferson and Clear Creek Counties with EFR stations indicated as red pins. Source: Colorado Department of Local Affairs and OpenStreetMap.*

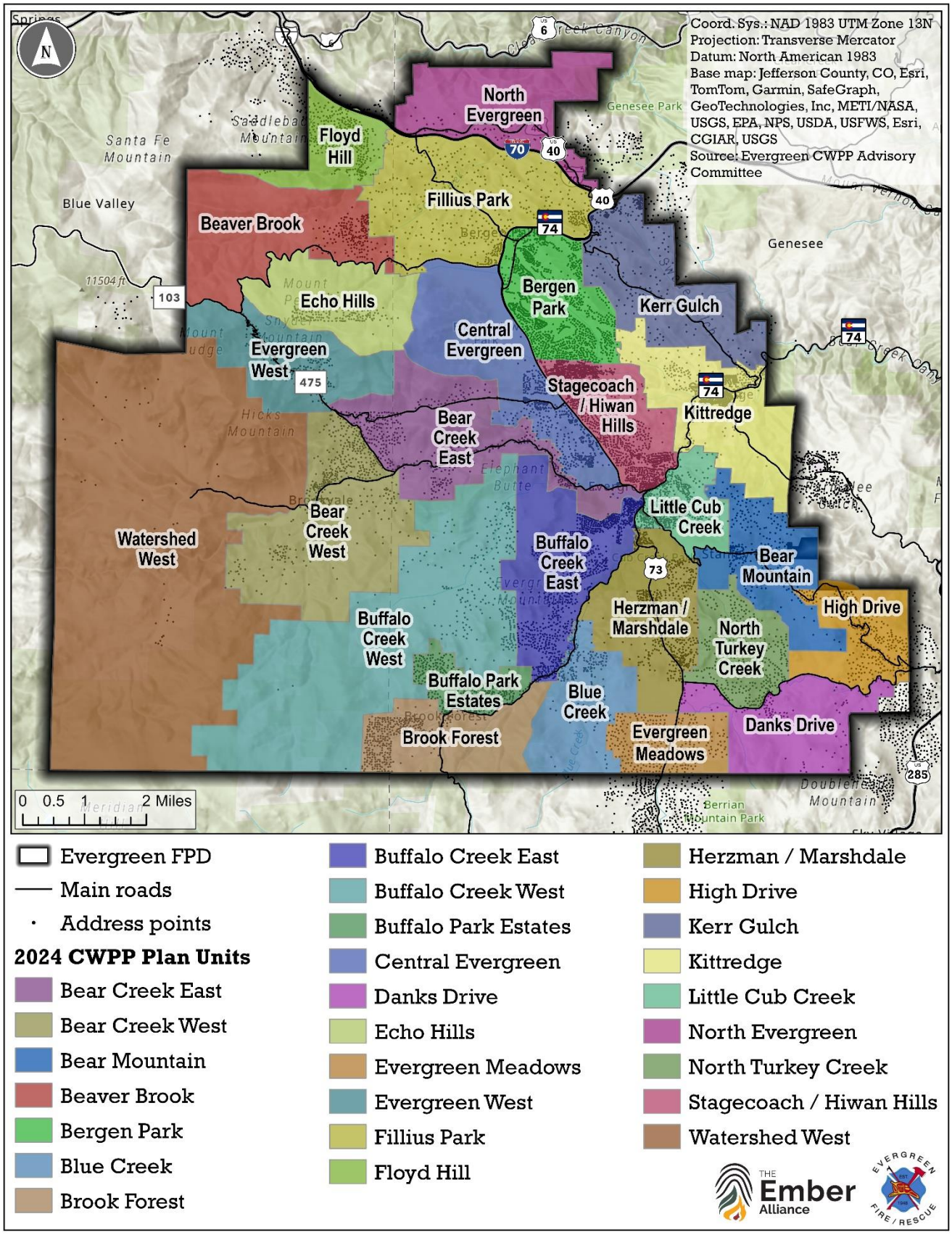


Figure 1.a.3. *The district was divided into 26 plan units for the CWPP to compare relative risk and make specific recommendations to address wildfire risk and increase emergency preparedness. Source: Evergreen CWPP Advisory Committee.*

1.b. Community and Partner Engagement

Collaboration is an essential part of CWPPs. Community engagement, partner commitment, and follow-through are what make a CWPP successful and effective. The Ember Alliance (TEA)—a Colorado nonprofit dedicated to fire management and community engagement—worked with EFR to write this CWPP. TEA and representatives from EFR engaged partners from across the district and neighboring districts to develop the recommendations set forth in this CWPP. They incorporated lessons learned from recent, challenging wildfire seasons in Colorado and considered valuable insights shared by community members and other partners.

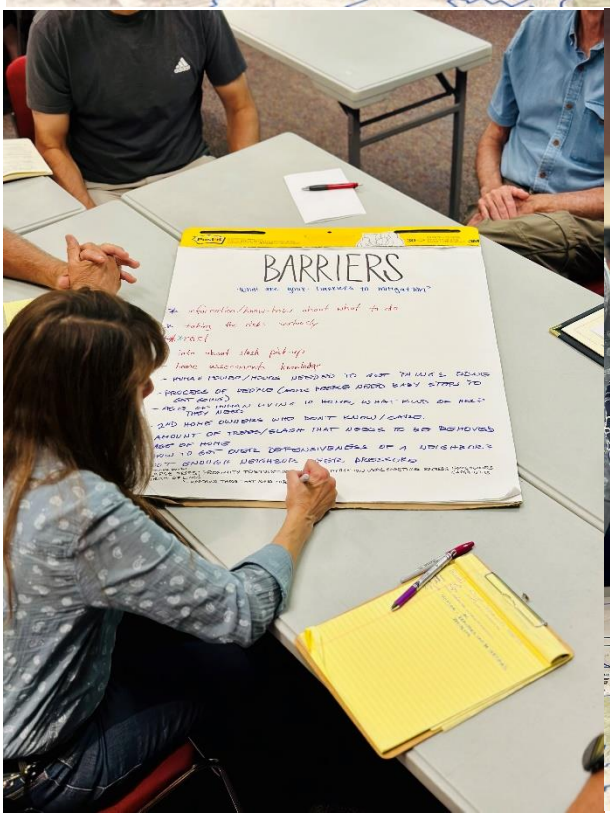
Recommendations in this CWPP also consider overlapping and related plans and prioritization processes in the area, including: 2024 Jefferson County CWPP Update, 2024 Clear Creek County CWPP Update, 2024 Evergreen Fire Protection District Master Plan, 2024 Evergreen Fire/Rescue History Book, 2022 Community Mitigation Assistance Team (CMAT) Report for Evergreen, 2022 Evergreen Fire/Rescue Community Risk Assessment, 2022 Jefferson County Open Space Forest Health Plan, Upper Clear Creek Watershed Association's 2021 Pre-Wildfire Planning Study, and 2020 Evergreen Fire Protection District CWPP.

TEA and EFR would like to thank the following partners for their time and effort in developing content, providing data and feedback, and contributing to planning implementation for this CWPP:

- Arapahoe Roosevelt National Forest
- Colorado State Forest Service
- Clear Creek County Sheriff's Office
- Clear Creek Fire Authority
- Clear Creek Ranger District
- Clear Creek Watershed & Forest Health Partnership
- Core Electric
- Denver Mountain Parks
- Evergreen Fire Protection District Community Wildfire Ambassadors
- Genesee Foundation
- Jefferson Conservation District
- Jefferson County Conservation District
- Jefferson County Open Space
- Jefferson County Sheriff's Office
- Teren, Inc.
- United States Forest Service
- Upper South Platte Partnership
- Xcel Energy

TEA and EFR conducted extensive community and partner engagement to gain a better understanding of the community's current knowledge of wildfires, assess their concerns and needs, and learn about ongoing mitigation work. Engagement included:

- Community kickoff meeting at EFR in fall of 2024 to introduce the CWPP process and encourage community participation.
- Community Ambassador interviews in winter of 2024 to gather vital input that was incorporated into recommendations and priorities for the 2025 CWPP update.
- Final community meeting at EFR in spring 2025 to share findings and recommendations from the CWPP update process.



Residents attended a Community Kickoff Meeting in September 2024 and participated in activities designed to collect community input on the CWPP process and plan (bottom left) and give feedback on plan unit boundaries (top, bottom right). Photo credit: Carrie McKenzie, EFR.

1.c. Accomplishments Since the Previous CWPP

Evergreen Fire Protection District

- EFR has continued progressively each year since the 2020 CWPP to expand capacity within wildland and mitigation. This includes creating and standing up a Wildland Division that recently filled the Division Chief position. As of 2024 the EFR Wildland Division has a Division Chief, a Wildland Project Coordinator, a Community Wildfire Ambassador Specialist (with volunteer Ambassadors throughout the community), two Mitigation Specialists, and a Wildland Captain that oversees the two Crew Foreman and ten seasonal crew members. In addition, the operational volunteer firefighters that hold wildland focus also now fall under the Wildland Division Chief to enhance training and communication.
- Since the 2020 CWPP, several approaches to home assessments have been completed. All approaches focus on a personalized experience for homeowners to discuss the mitigation work they can accomplish on their property to reduce risk. Since 2020 there have been over 2,500 touches into the community to assist homeowners in private property risk reduction, with over 1,700 of those touches being personalized home assessments.
- EFR offers community chipping as part of the fuels crew projects. This program has continued to see a steady increase in use and participation. This program has been enhanced with partnership of the Jeffco SLASH Program.
- In addition to community chipping, the EFR Fuels Crew has worked in partnership with Denver Mountain Parks to complete projects on Dedisse, FIllius, Cub Creek and Pence Parks within our district (with some project ongoing).
- Through successful Colorado Strategic Wildfire Action Program (COSWAP) Workforce grants, EFR in partnership with both private owners and Denver Mountain Parks has and continues to work successfully on projects to mitigate roadways such as Highway 103, Brook Forest Road, Armadillo Trail, and Highway 73.
- In 2023 and 2024, EFR also took on pilot projects within the community to address roadside mitigation along evacuation routes through the Buffalo Creek East plan unit and the (Witter Gulch) Evergreen West plan unit. Working with homeowners along these priority routes, homeowners were given a free home assessment, with vegetation marked along 30' from roadside and the EFR Fuels Crew following behind our Mitigation Specialist to implement the roadside mark.
- There were many other projects completed within the fire district through CSFS, JCD, JCOS and DMP.

Colorado State Forest Service

- CSFS has acquired funding and completed layout for the 76-acre Snowshoe project. They are currently working through the bid process. There is potential for a Snowshoe II project expanding out into the adjacent inoperable areas.
- CSFS completed forest management plans for Evans Ranch and Woodshaven Preserve.
- CSFS also completed 63 acres of treatment, has 105 acres under contract, and 170 acres laid out and ready for implementation.

Jefferson Conservation District

- JCD is working with Mt Blue Sky Outdoor Lab.

Jefferson County Open Space

- JCOS completed 34 acres of roadside fuelbreak treatment along Buffalo Park Road at Alderfer/Three Sisters Park in 2020.

- EFR and JCOS completed 18 acres of roadside fuelbreak treatment along Stagecoach Boulevard at Elk Meadow Park in 2020.
- JCOS completed 101 acres of fuelbreak treatment around the Evergreen Heights and Evergreen Park Estates neighborhoods at Alderfer/Three Sisters Park in 2021. This project utilized equipment purchased with a CSFS Forest Restoration & Wildfire Risk Mitigation (FRWRM) Capacity Building Grant.
- The Colorado Forest Restoration Institute (CFRI), Forest Stewards Guild, and JCOS completed the JCOS Forest Health Plan in 2022.
- JCOS completed 40 acres of wildfire mitigation and forest treatment at Elk Meadow Park in 2023.
- JCOS completed 260 acres of wildfire mitigation and forest treatment at Alderfer/Three Sisters Park in 2024. This project utilized funding provided by a FRWRM Grant.
- TeamWorks and JCOS completed 7 acres of wildfire mitigation at Alderfer/Three Sisters in 2024. This project utilized funding provided by a COSWAP Workforce Development Grant.
- JCOS completed 14 acres of mountain pine beetle mitigation at Elk Meadow Park in 2024.
- JCOS treated 272 acres at ELK Meadow Park. This work was funded by a COSWAP Landscape Resilience Investment Grant and the USFS State and Private Forestry Program.

Jefferson County Open Space performing forest management work at Flying J ranch in 2020. Photo credit: Anne Ludolph, Jefferson County Open Space.

2. Evergreen Fire Protection District: Background

2.a. General Description

In the foothills of the Front Range of the Rocky Mountains west of Denver, the district covers 126 square miles of Jefferson and Clear Creek Counties with elevations ranging from 7,000 feet to over 12,000 feet above sea level. The district is home to approximately 26,669 residents. Of these residents, approximately 21.3% are over the age of 65, 4.1% live below the poverty line, and 88.3% of residents own their home. (U.S. Census Bureau, 2021).

The district is bordered by Clear Creek Fire Authority, Elk Creek FPD, Inter-Canyon FPD, Indian Hills FPD, Platte Canyon FPD, Foothills FPD, and Genesee FPD. EFR often coordinates with these districts to provide mutual aid and respond to calls near the borders of the district. The district encompasses the Bear Creek Basin with headwaters on Mount Blue Sky (14,271 feet elevation).

The Arapaho-Roosevelt National Forest and the Mount Evans Wilderness Area lay to the west of the district. The Mount Evans State Wildlife Area, in the Southwestern portion of the district, and Bergen Peak State Wildlife Area, in the middle of the district, are the major State Lands in Evergreen. Other major landowners include Jefferson County Open Space (JCOS) and Denver Mountain Parks (DMP) with public recreation areas scattered throughout the district.

The community of Evergreen is unincorporated and governed by Jefferson and Clear Creek Counties. Local government services are provided by special districts, water and sanitation, parks, and recreation, and the EFPD. These special districts service the needs of the community that are typically provided by city governments.

Prior to Euro-American settlement, Indigenous peoples were in the area but there is little evidence of any permanent settlement. For example, the Conifer area was known as Ute Pass for transit to South Park. The area was difficult to access due to steep canyons with few easy routes into the Bear Creek Basin. Topography of the area was also a factor in Euro-American settlement.

The first settlement was in 1859 in Bergen Park. A toll road was established up Mount Vernon Canyon through Bergen Park then northwest into the gold fields of Clear Creek and Gilpin Counties. Thomas Bergen established a way station for pack trains, thus lending his name to the area.

The community grew in three general phases. In the first phase in the latter half of the 1800s, Homesteaders, who found very few mineral extraction opportunities, began establishing farms, ranches, and timber operations to support mining activities and the markets of Denver. The second phase began in 1911 when Denver started purchasing large tracts of property in the district and established Denver Mountain Parks. Roads were built to allow access and, as people began exploring the parks, they started purchasing lots for summer cabins. Multiple resorts were built, and Evergreen became a resort community with a few hundred people living in the area year-round and thousands in the summer.

In the mid 1930's, improved road networks allowed access to the Denver Metro Area and Evergreen's summer cabins were converted into year-round use for commuters. Many of these converted cabins still remain to this day. In the early 1950s, Evergreen's third phase of growth transformed the community into a suburb of Denver, as large tracts of land were platted for homes. In 1961, Hiwan Country Club was established and large expensive residential homes were built. As areas developed outside of the sanitation district, larger lots were needed to accommodate septic systems. Scattered throughout the district are very large homes (20,000+ square feet) on very large lots (20+ and many over 100 acres)—as an example of this, a replica of the Biltmore Estates can be found in Asheville, North Carolina. The size and complexity of fire protection of these larger homes and lots became difficult, with many of these homes lacking good apparatus and water supply access.

In the early 1970s, Jefferson County Open Space started purchasing additional large tracts of land to supplement Denver Mountain Parks areas. All of these lands have extensive trail networks that attract hundreds of visitors each day and more on weekends.

The district has many historic structures including ranches, schools, resorts, private residences, and a museum. The Hiwan Homestead Museum on Meadow Drive is a good example of early ranch homes and support buildings. Other ranch complexes that survive include Indian Creek Park, Evans Ranch, and Singing River Ranch. Historic schools include the Bendemeer and Buffalo Park schools. Many of the early resorts were either torn down or burned down, but a few remain, including Brook Forest Inn and Marshdale Lodge. There ae many private historical structures in the district including homes along Bear Creek in the Troutdale Estates subdivision.

In addition to these historic resources, the Evergreen Fire Protection District contains essential infrastructure and community assets (**Figure 2.a.1**). These include two post offices, twelve public or private schools, several assisted living / adult care facilities, and over ten childcare centers. Safety and security infrastructure in the district include the Jefferson County Sheriff's Office (JCSO) Mountain Precinct and eight strategically placed fire stations and five communication towers. There are several trailheads and campgrounds in and around the district that attract hundreds of visitors during the summer.

Approximately 21,156 acres of land (28%) in the district is publicly managed land. These lands are overseen by a variety of agencies, including the Bureau of Land Management (BLM), the U.S. Forest Service (USFS), the State Land Board, and Colorado Parks and Wildlife (CPW). JCOS and DMP operate parks and open spaces in the district as well. Many of the trails move between the parks and require cooperative management and planning to maintain (**Figure 2.a.2**).

Within the district, elevations range from 7,000 to over 12,00 feet above sea level. The district lies within the Bear Creek Basin in the South Platte Watershed. The landscape is dominated by mixed conifer and ponderosa pine stands, with smaller patches of lodgepole pine scattered throughout. Grasslands and Gambel oak shrubland are interspersed in the southern and central areas, and riparian zones and hardwood forests with willow, cottonwood, and aspen follow streams and rivers. Spruce-fir forests are found in isolated patches at higher elevations. (**Figure 2.a.3**). Black bear, elk, mountain lion, and mule deer are some of the large wildlife found in the district.

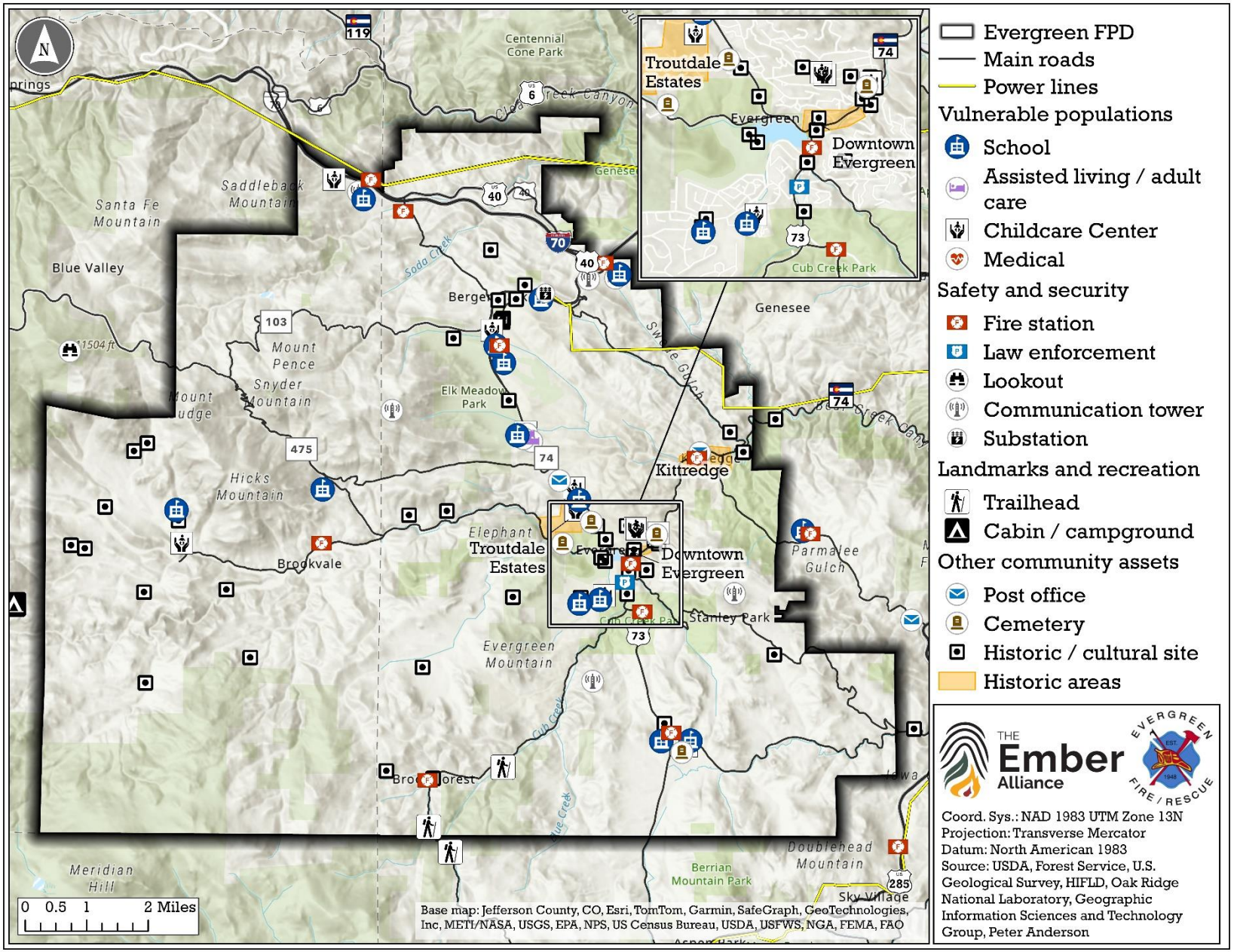


Figure 2.a.1. *Non-residential values within and around the district. Sources: USDA, Forest Service, U.S. Geological Survey, HIFLD, Oak Ridge National Laboratory, Geographic Information Sciences and Technology Group, and Peter Anderson.*

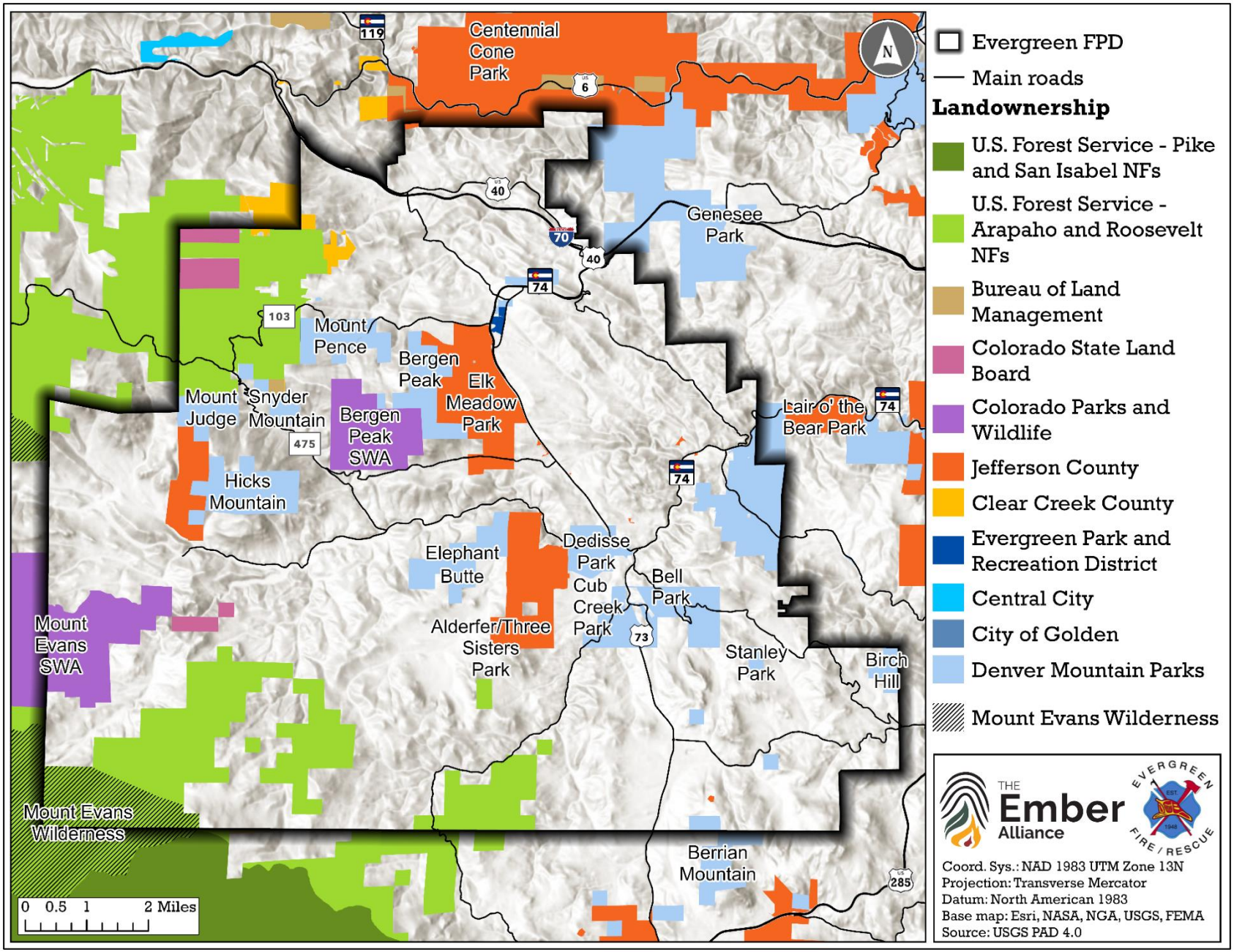


Figure 2.a.2. *Publicly owned land across the district. Source: U.S. Geological Survey Protected Area Database v4.0.*

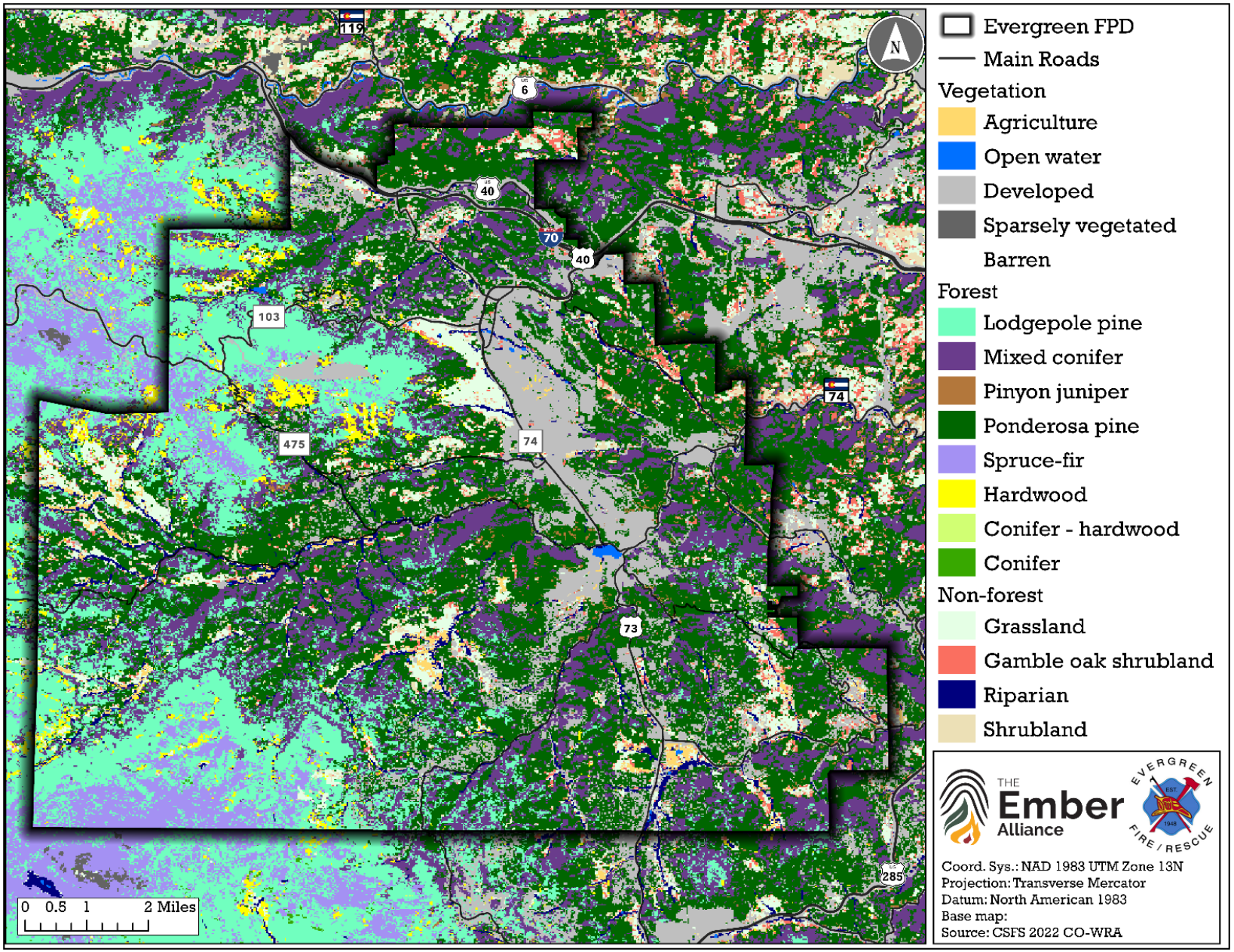


Figure 2.a.3. *Map of vegetation across the district. Major vegetation types include ponderosa pine, mixed conifer, and lodgepole pine. Source: Colorado State Forest Service, Colorado Wildfire Risk assessment.*

2.*b.* District Capacity

EFR is a combination fire department staffed by career firefighters, volunteer firefighters, administrative and maintenance staff, and Emergency Medical Staff (EMS).

EFR maintains 8 fire stations distributed throughout the district, covering a majority of homes within the 5-mile Insurance Services Office (ISO) requirement. There are two main stations, Stations 1 and 2, concentrating the tower and rescue companies around the population center and the most likely use within the corridor of Evergreen Parkway and Hwy 73. Stations 1 and 2 also house water tenders and brush engines. Station 2 houses the second career ambulance. The remaining stations, with the exception of Station 4, are considered satellite stations housing only initial attack structural engines, brush engines, and water tenders. Station 4 is an EMS station housing ambulances and career staff. Station 2 is adjacent to the administration building, apparatus maintenance building, and burn building. As of October 2024, Station 2 has been assigned six career firefighters, two on shift 24/7, transitioning EFR from a volunteer to a combination fire department.

ISO has rated EFR as Class 3, 4, and 10W. ISO ratings range from 1 (highest) to 10 (lowest) and are provided to fire departments and insurance companies to reflect how prepared a community is for fires in terms of local fire department capacity, water supply, and other factors. The Class 3 rating is based on any property within 5 miles of a fire station AND within 1,000 feet of a hydrant to a 30,000-gallon cistern. Class 4 is any property beyond 1,000 feet from a hydrant or cistern but still within 5 miles of an EFR fire station, or a neighboring fire districts' station. The Class 10 W rating is for any property greater than 5 miles from an EFR fire station or a neighboring fire district's station.

Station 1 (Downtown) is considered high consequence and high probability for structure fires. The high probability is based on a history of commercial fires (1926 city block destroyed; 1997 Evergreen Hotel destroyed) and the high consequence is based on the economic impact and historic nature of the area. The areas surrounding downtown Evergreen were platted in the 1920's and commercial structures were constructed prior to county building codes. Many roads are steep and narrow with multiple switchbacks. Many of these neighborhoods have water systems that are old and unreliable. Most of these areas are difficult to access and evacuate. Station 1 is a seven-bay station with a small crew area. Apparatus: pump truck (high volume pump on a truck body to use at water supply locations); light rescue, Type S-1 water tender; Type 4 structural/wildland engine 4X4; Type 6 wildland engine.

Station 2 (Bergen Park) is considered low consequence and high probability, as the commercial structures generally have sprinkler systems and the homes are newer. This is the location of the administration building, apparatus maintenance building, burn building and fire station. The area has many commercial buildings including elderly housing, nursing care, and big box stores intermixed with multi-residential and residential units. Most of the structures were constructed using building codes and the larger commercial buildings are sprinklered. Apparatus: 85' tower; heavy rescue, Type 1 structural engine 4X4; medic unit; Type 6 wildland engine.

Station 3 (Marshdale) is considered low consequence and low probability, as there are few commercial structures, some historic structures, and homes are generally newer. Apparatus: Type 1 structural engine 4X4; Type T-2 water tender; (2) Type 6 wildland engines and Type 3 Wildland Urband Interface engine.

Station 4 (South Evergreen) is the EMS station for the southern part of the district. There are no firefighting resources at this station. Apparatus: medic units.

Station 5 (Upper Bear Creek) is considered low consequence and low probability, as there are very few commercial structures, some historic structures, and residences are newer, sparse, and spread over a larger area. The area has maintained its large acreage ownership where very large homes have been constructed. There are several historical homes and schools. Apparatus: Type 1 structural engine 4X4; Type T-2 water tender.

Station 6 (Kittredge) is considered of moderate consequence and low probability. There is an economic and historic component to the area with both older homes and newer homes. Apparatus: Type 4 structural engine 4X4; Type 7 wildland engine.

Station 7 (Floyd Hill) is considered low consequence and low probability, as there are few commercial buildings and newer homes. Apparatus: Type 1 structural engine 4X4; Type T-2 water tender; Type 6 wildland engine.

Station 8 (Brook Forest) is considered low consequence and low probability. There are few commercial structures and a historic component. Apparatus: Type 1 structual engine 4X4; Type T-2 water tender.

EFR Station 5. Photo credit: Keenan Prouty.

2.c. Wildland-Urban Interface

Every year, wildfires result in billions of dollars in fire suppression costs and destroy thousands of homes across the United States (Bayham et al., 2022; Higuera et al., 2023). Some of the most destructive, deadly, and expensive wildfires occurred in the past several years, partly due to construction of additional homes in the wildland-urban interface (WUI). Wildfire risk in the WUI is further exacerbated by severe fire weather perpetuated by climate change (Caton et al., 2016). Some nearby examples include the 2020 Cameron Peak Fire, which destroyed 469 structures; the 2020 East Troublesome Fire, which destroyed at least 366 structures; and the 2021 Marshall Fire, which destroyed over 1,000 structures. See **Appendix A** for a discussion about how wildfires can threaten and destroy homes.

The WUI is any area where the built environment meets wildfire-prone areas—places where wildland fire can move between natural vegetation and the built environment and result in negative impacts on the community (Mowry and Johnston, 2018). The built environment includes homes, businesses, infrastructure, services such as utilities, roadways, and geographic features that aid in wildfire suppression, such as roads or ridgetops (*Healthy Forest Restoration Act*, 2003). People that live and work in the WUI must be aware of the effect that wildland fires have on their lives.

WUI exists along a continuum of wildland to urban densities (**Figure 2.c.1**). The WUI is often subdivided into intermix, interface, and occluded types. Wildland-urban intermix refers to places where the built environment intermingles with wildland vegetation; wildland-urban interface refers to places where the built environment abuts large area of wildland vegetation; and occluded refers to places where wildland vegetation is surrounded by the built environment (Johnston, 2018).

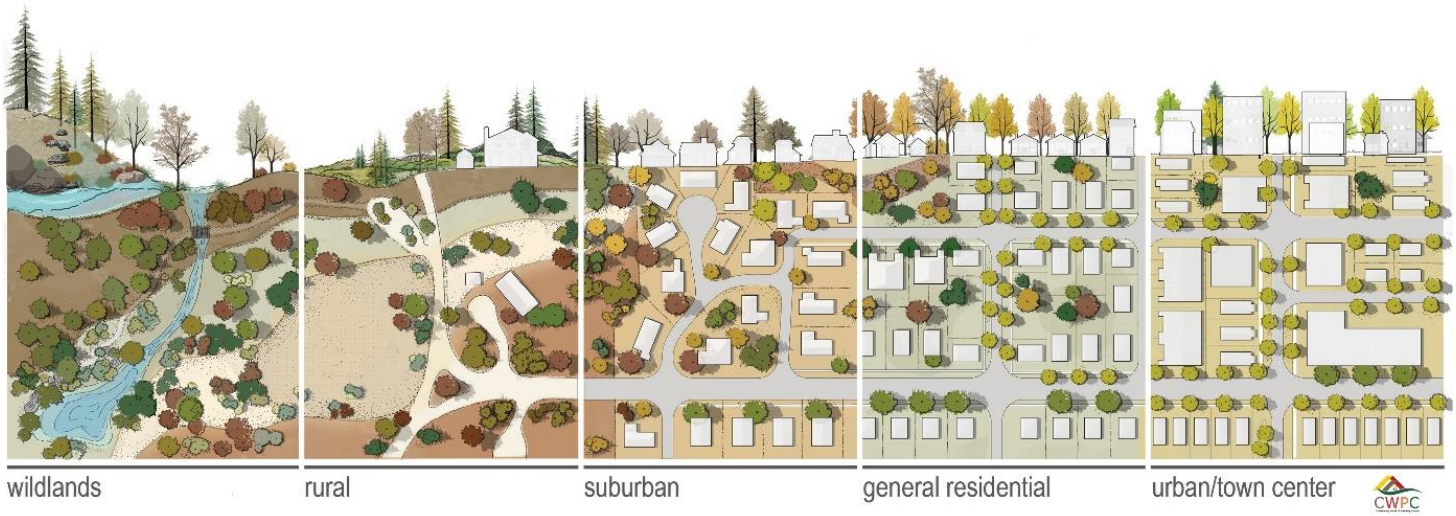


Figure 2.c.1*. The WUI exists along a continuum of wildland to urban. Source: Community Wildfire Planning Center.*

All residents of the district live in the WUI (**Figure 2.c.2**). The Evergreen CWPP WUI was delineated using potential operational delineations (PODs) to capture not just populated areas but also portions of the landscape where fires could originate and spread into the community (see **Figure 2.c.3** for a description of PODs). Proactive and strategic management along POD boundaries and within PODs can protect lives and property in the district, including protecting primary evacuation routes. Another justification to include PODs west of Evergreen in the WUI is the high surface drinking water importance of all watersheds in Clear Creek and Jefferson Counties that intersect the district. Mount Evans Wilderness was excluded from the WUI because very little vegetation management will occur in a Wilderness Area, and there are POD boundaries between the Wilderness Area and the district that could be used to slow or suppression wildfire spread towards the community (**Figure 2.c.2**). The Jefferson County 2024 CWPP used PODs with several slight modifications to delineate regional action areas and compare relative risk across the county. Using PODs to delineate the WUI in the district creates further strategic alignment with county-wide actions.

According to the 2020 Wildfire Risk to Communities analysis by the U.S. Forest Service, homes in the district and the surrounding areas have a higher risk of fire than 99% of the communities in the state of Colorado (USFS, 2021a). Over the past 50 years, immigration to the mountains west of Denver increased the number of occupied structures within this historically forested landscape. This population change increased not only the density and size of the WUI but also increased the risk of structure loss from wildfire and the likelihood of fire ignitions.

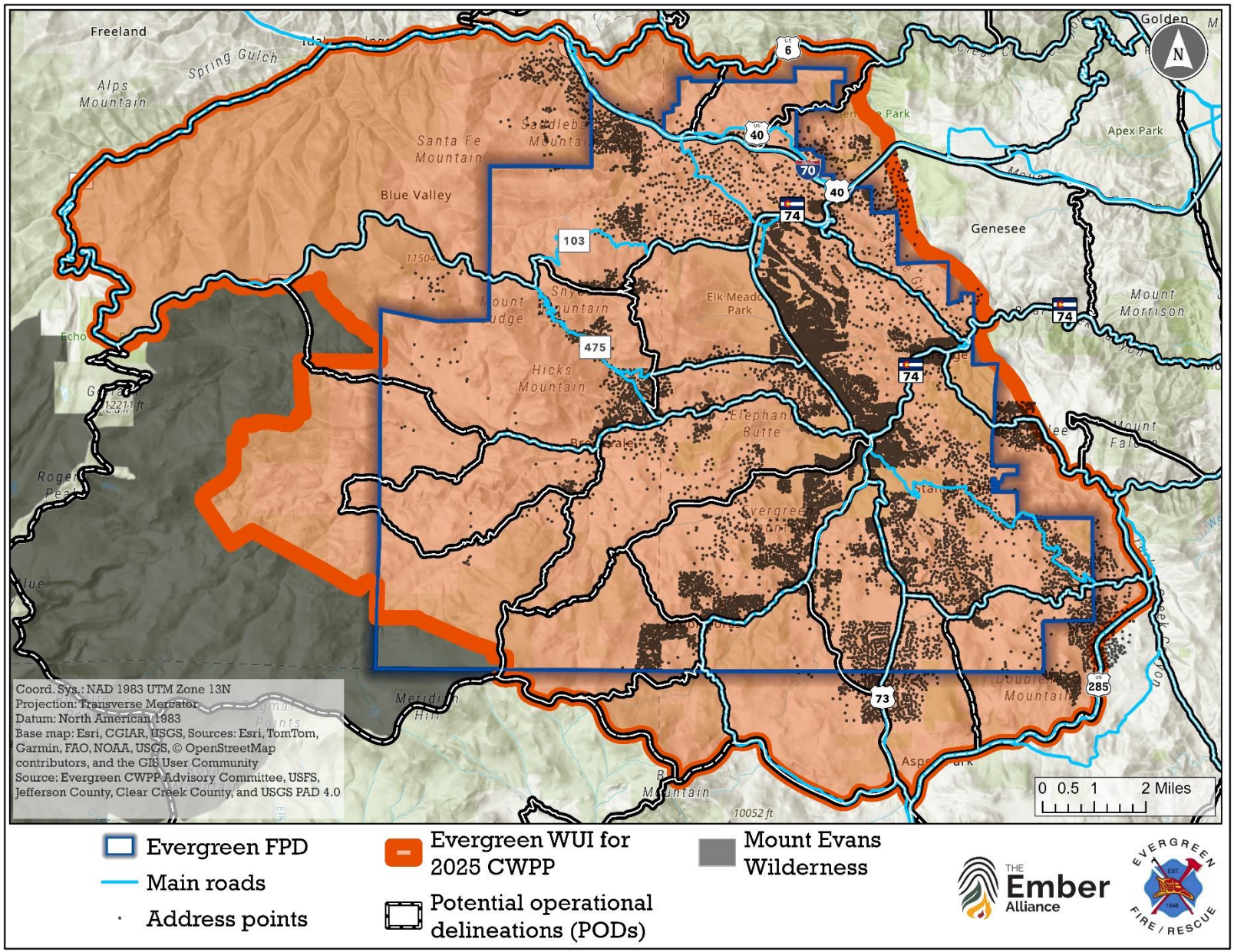


Figure 2.c.2. *All residents of the district live in the wildland-urban interface and/or intermix and are exposed to elevated wildfire risk. The WUI boundary for this CWPP includes all of the district, the surrounding landscape that could transmit wildland fire into the district, and the area along important evacuation routes (see methodology in **Appendix B**).*

Potential operational delineations (PODs) are collaboratively delineated fire management and planning units. Boundaries of PODs are called **potential control lines (PCLs)** that follow features such as roads, rivers, and ridgetops and can be used as tactical features during wildfires and for proactive landscape-scale management including prescribed burning.

Fire and fuel managers have delineated PODs across western Colorado. PODs often span multiple landownerships and serve as a useful tool for collaborative, cross-boundary prioritization and implementation of fuel treatments. POD boundaries and fuelbreaks are not synonymous, but it may be beneficial to design fuelbreak projects along POD boundaries (Thompson 2023).

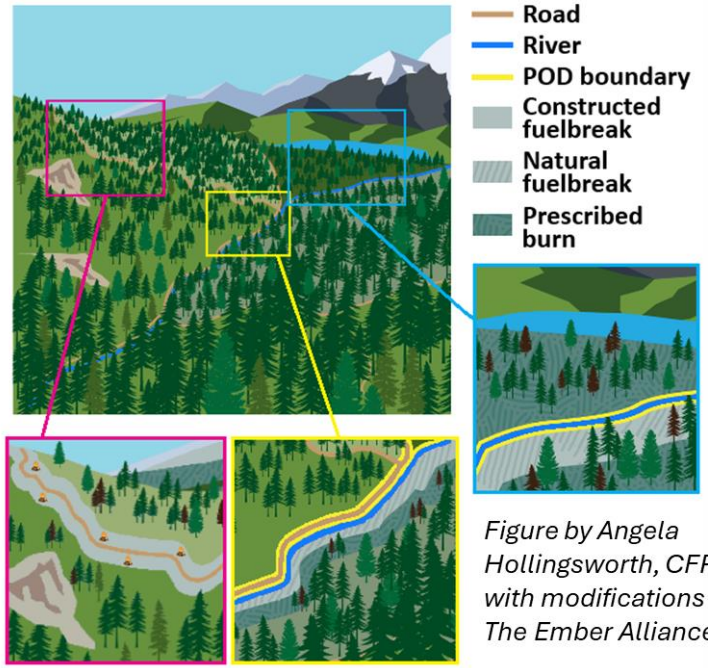


Figure by Angela Hollingsworth, CFRI, with modifications by The Ember Alliance.

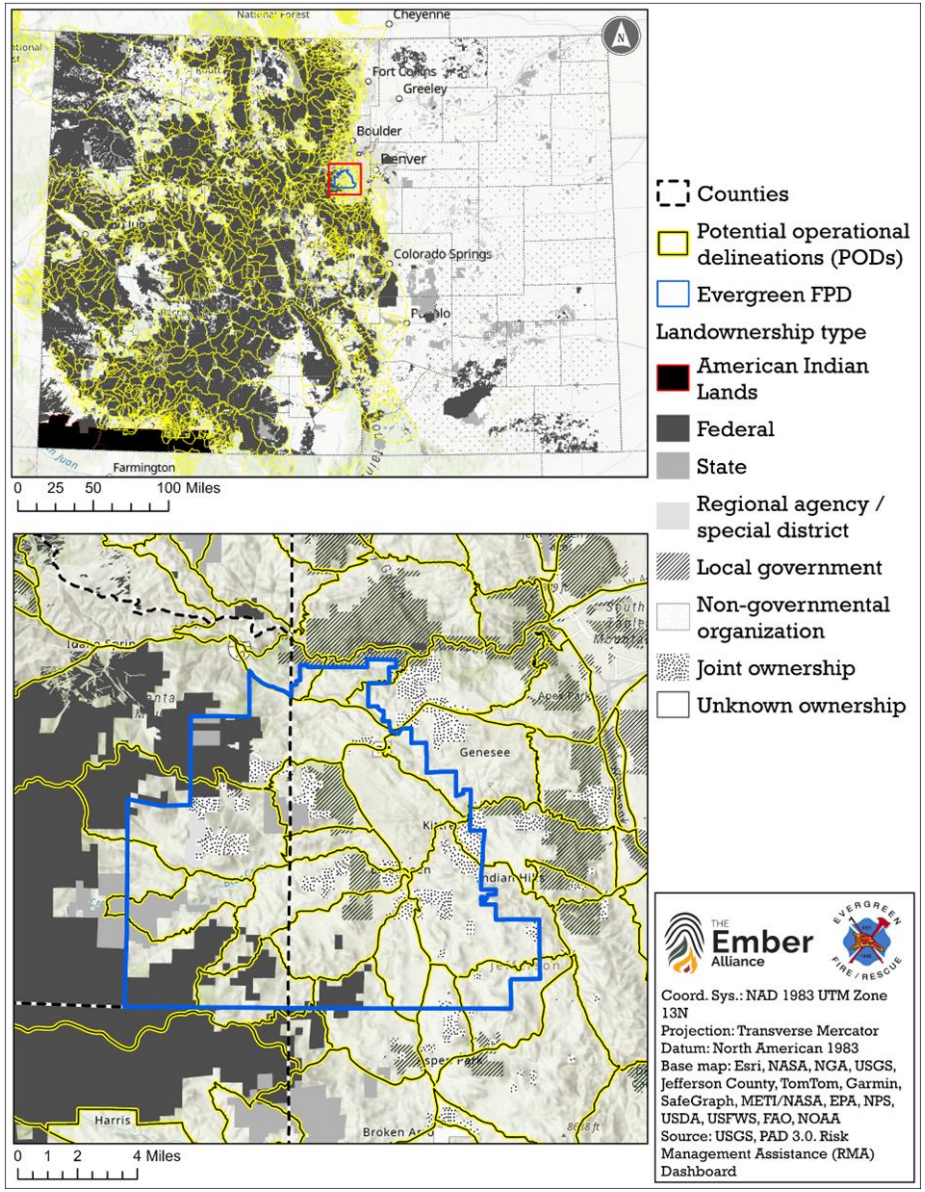


Figure 2.c.3. *Proactive and strategic management along POD boundaries and within PODs can protect lives, property, and assets in the district, including protecting primary evacuation routes and surface drinking water (see methodology in* ***Appendix B****).*

2.d. Firefighting in the WUI

One of the standard firefighter orders is to "fight fires aggressively, having provided for safety first" (NWCG, 2018a). Firefighters are committed to protecting lives and property, but firefighting is particularly perilous in the WUI. The firefighting community is committed to wildland firefighter safety, which can require them to cease structure protection when conditions are exceedingly dangerous, particularly around homes with inadequate defensible space, safety zones, and egress routes.

High-intensity, fast-moving wildfires in the WUI can quickly overwhelm firefighting resources when homes begin igniting each other (Caton and others 2016). Additionally, wildfires threaten public safety and evacuation, compounding the importance of taking actions that contribute to the safety of everyone in the community. Firefighters are often forced to perform structure triage to effectively allocate limited resources during an incident, and more importantly, to protect the lives of firefighters. The Incident Response Pocket Guide (IRPG), which is carried by all firefighters certified under the National Wildfire Coordinating Group, explicitly states, "**Do not** commit to stay and protect a structure unless a safety zone for firefighters and equipment has been identified at the structure during size-up and triage" (NWCG, 2018a). The IRPG outlines four categories of structure triage:

1. Defensible – prep and hold.
2. Defensible – stand alone.
3. Non-defensible – prep and leave.
4. Non-defensible – rescue drive-by.

Do not count on firefighters staying to defend your home—your home should be able to stand strong on its own during a wildfire. There are never enough firefighters to stay and defend every single home during large incidents. Section **Mitigate the Home Ignition Zone** of this CWPP provides recommendations for how residents can increase the chance of their homes standing strong during wildfires and enhance the safety of wildland firefighters.

Defensible space allowed firefighters to protect this home during the 2016 Cold Springs Fire near Nederland, CO. Photo credit: Wildfire Partners.

2.e. Fire History Along the Colorado Front Range

Wildfires burning heavily influenced Colorado's Front Range before the era of fire suppression. Whether started by Indigenous peoples or naturally, frequent, low-severity fires were common in grasslands, shrublands, and ponderosa pine and dry mixed-conifer forests before European settlement in the 1850's, and other forest types, particularly lodgepole and subalpine forests at higher elevations, experienced infrequent but high-severity wildfires (**Figure 2.e.1**). Some plant species evolved adaptations to wildfire, for example, the heat from wildfires opening the cones of lodgepole pine or mortality from wildfire triggering resprouting in Gambel oak and aspen. Some wildlife benefit from recently burned ecosystems with lower tree densities and a greater abundance of understory plants (Kalies et al., 2012; Pilliod et al., 2006).

Ponderosa pine forests with mixtures of Douglas-fir, Gamble oak, Rocky Mountain juniper, and aspen were fire-adapted ecosystems and very resilient to wildfires. Low- to mixed-severity fires occurred every 7 to 50 years, creating a mosaic of widely spaced trees and small tree clumps interwoven with grasslands and shrublands, particularly on drier south-facing slopes. North-facing slopes often supported denser forest stands (Addington et al., 2018). Frequent fires killed many tree seedlings and saplings, thereby preventing the accumulation of ladder fuels and reducing the potential for surface fires to transition into crown fires. Fire spread was more rapid through understory grasses but released far less heat, so many larger trees survived unscathed. Occasionally, dense clumps of trees experienced mortality from passive crown fires or active crown fires over several hundred acres, further increasing the diversity of habitat in these ecosystems. Ponderosa pine ecosystems with fewer trees support more abundant and species-diverse understories of grasses, forbs, and shrubs and provide habitat for a variety of wildlife that prefer more open forest structure (Kalies et al., 2012; Matonis and Binkley, 2018; Pilliod et al., 2006).

Mixed-conifer forests with an abundance of Douglas-fir and variable mixture of ponderosa pine, lodgepole pine, Englemann spruce, Colorado blue spruce, subalpine fir, and aspen experienced wildfires every 20 to >100 years. These forests burned less frequently due to cooler, moister conditions at higher elevations, particularly on north-facing slopes, and they had higher tree densities than ponderosa pine ecosystems (Addington et al., 2018). High-severity wildfire could kill patches of trees and create a mosaic landscape with recently burned forests and dense unburned forests.

Lodgepole pine forests are part of fire-adapted ecosystems that are resilient after infrequent, stand-replacing wildfires. Research on historical conditions in lodgepole pine forests suggest they experienced high-severity wildfires every couple of centuries in northern Colorado and southern Wyoming (Higuera et al., 2021). Lodgepoles grow dense and tall, which leaves little light that reaches the understory. They have relatively high canopy base height because they drop their lower branches as they grow and few ladder fuels exist in the understory, meaning they typically burn with high-severity crown fires. They have serotinous cones that open after the heat of a wildfire, creating a dense seedbed that will grow into a new even-aged stand and replace the burned previous stand. Young stands that are in recovery and regeneration stages after wildfires do not have the resources to regenerate after a second wildfire event, so frequent stand-replacing fires are detrimental to this ecosystem (Dennis et al., 2009; Turner et al., 2019). Fires are becoming more common in high elevation lodgepole pine and wet mixed-conifer forests due to climate change (Higuera et al., 2021).

Wildfire behavior is vastly different today than it was over a century ago in many ecosystems along the Colorado Front Range. As the initial farming, ranching, and logging activities of Euro-American settlers subsided in the region and government-mandated fire suppression began in the late 1800's, forests filled in with trees (Addington et al., 2018). Tree densities in lower-elevation forests along the Colorado Front Range average 4.5 times higher today than they were in the mid-1800s, and tree densities in mid-elevation forests average 2.3 times higher today (Battaglia et al., 2018). Although many residents consider dense forest as "natural," these conditions are vastly different from the fire-adapted and fire-resilient ecosystems that existed before.

Large wildland fire history since 1970 is very limited within the district, with only two wildfires of any significance, Blue Bell and Elephant Butte. To get a complete idea of wildfire history, the focus needs to be larger than the district alone. **Figure 2.e.2** shows wildfires in areas surrounding the district from 1970 onward. These fires are a good illustration of the type and size of potential significant wildfires that can occur within the district.

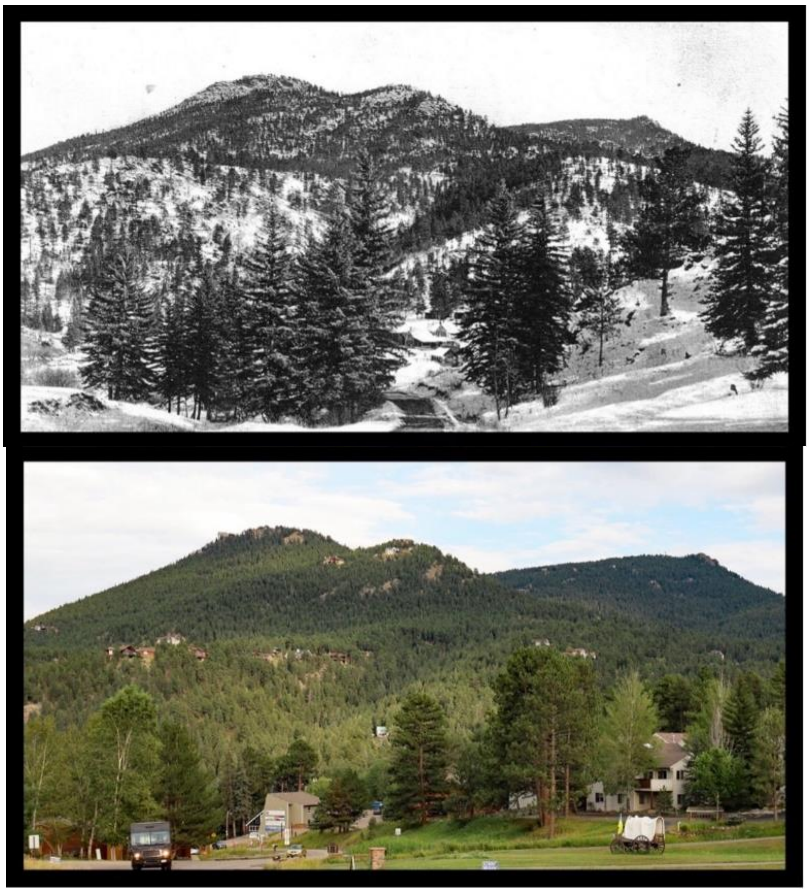
There have been 54 wildfires over the last 54 years starting with the Murphy Gulch fire in October 1978, west of Johns Manville World Headquarters, and ending with the most recent Quarry fire in 2024, just a handful of miles south of the district.

Within the Front Range there have been many large catastrophic wildfires. The first large wildfire was the Hayman fire in 2002, and for over 20 years this remained the most destructive wildfire in the area, and the state, until the Cameron Peak and East Troublesome fires in 2020. In 2024 alone, the Front Range had three large fires: the Alexander Mountain and Stone Canyon fires in Boulder County and the Quarry fire in Jefferson County.

Prior to 1970 there were 33 wildfires reported on the Front Range. The first recorded fire killed three miners in Coal Creek Canyon in 1859. When Europeans settled the area they generally had no idea they were in a fire prone environment. They were, unfortunately, poor stewards of fire on the landscape and started many wildfires with carelessness that led to the destruction of whole cities and burning of many hillsides. The fire history on the Front Range has been extensive, with lives lost and many structures destroyed.

A combination of dense wildland vegetation, extreme heat and high winds, unplanned ignitions, and housing developments in the WUI can create catastrophic wildfire scenarios (Haas et al., 2015). Climate change is making high-severity wildfires more frequent, intense, and larger in extent (Parks et al., 2016). Many catastrophic wildfires in Colorado's history have occurred on dry and windy days, resulting in rapidly spreading fires that outpace the ability of firefighters to respond. On the Front Range, wind can gust over 60 miles/hour, which makes wildfire suppression nearly impossible (Haas et al., 2015).

Wildland firefighters suppress a vast majority of ignitions in the district before they exceed 0.25 acres in size, but fires can escape the initial capacity of firefighters under high, dry, and windy conditions. Human-caused ignitions predominate in the district, with the most human- and lightning-caused ignitions occurring in June and July.



These two photos show the increase in ponderosa pine density within the district. The photo on the left was taken in the mid-1890s and shows the tree density prior to any development. Sources: Evergreen Area Historical Society (top), Tom Meyers, 2024, Evergreen Volunteer Turnout (bottom).

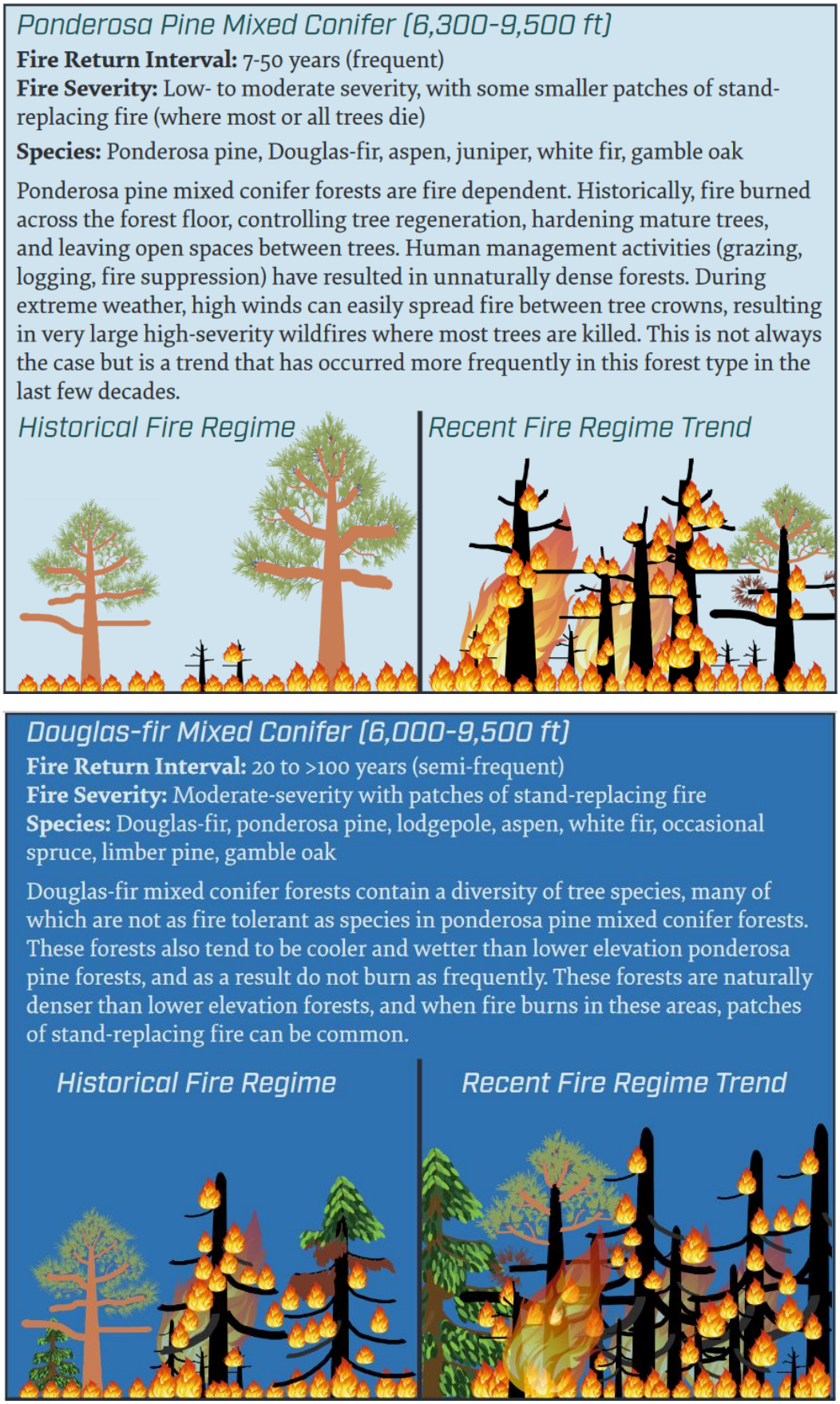


Figure 2.e.1. *Fire behavior has changed for many ecosystems along the Front Range of Colorado, partially due to the suppression of wildfires for over a century. Source: Colorado Forest Restoration Institute.*

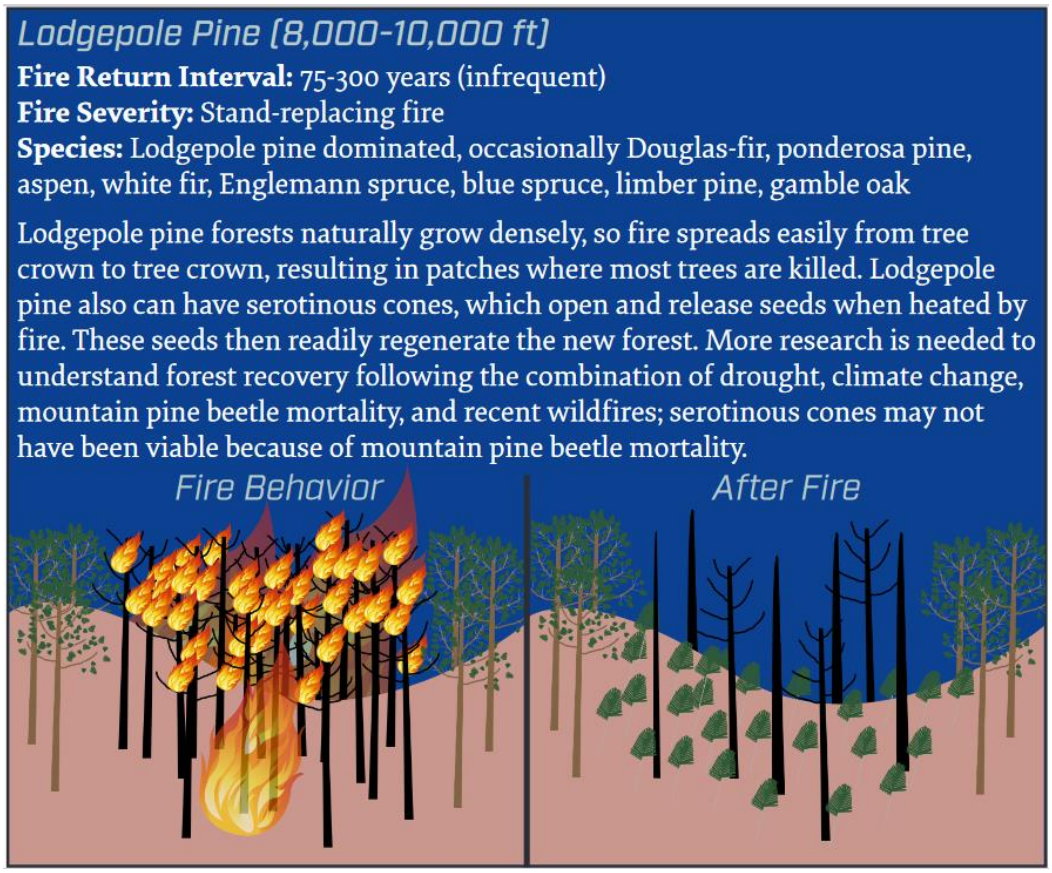


***Figure 2.e.1**. (Continued). Other forests experienced more infrequent but high-severity wildfires in the past, and this fire behavior persists today. Source: Colorado Forest Restoration Institute.*

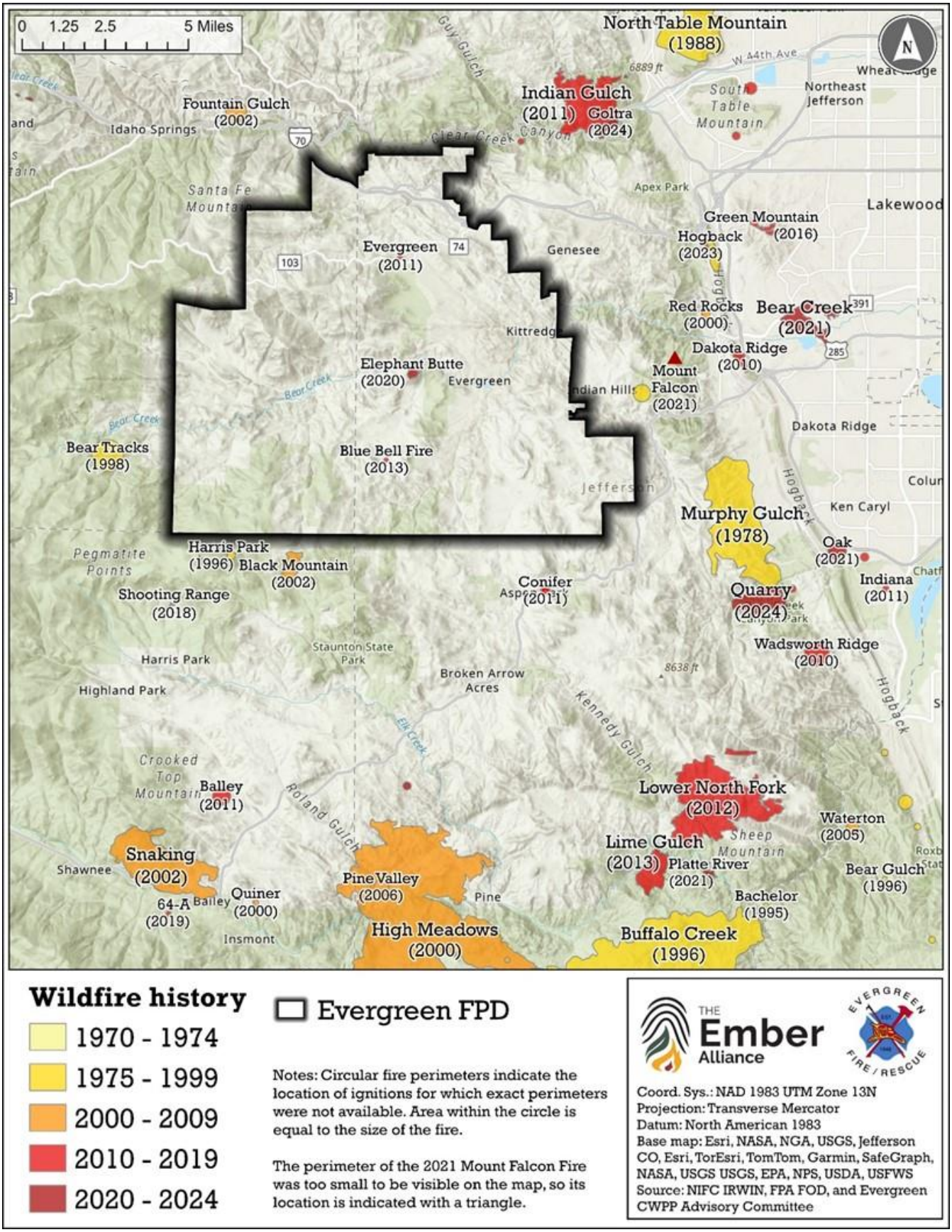


Figure 2.e.2. *Many significant wildfires have burned around the district. Whiles fires within the district have been small to date, there is a significant potential for large fire growth under hot, dry, and windy conditions. Source: National Interagency Fire Center, Fire Program Analysis fire-occurrence database, and Evergreen CWPP Advisory Committee.*

2.f. Potential for Extreme Fire Behavior and Exposure in the District

Many neighborhoods in the district could experience extreme fire behavior that could put the lives of residents, visitors, and firefighters at risk. Steep slopes, dense forests, limited road access in and out of neighborhoods, and flammable building material contribute to this dangerous situation. **There is an immediate need for this community to undertake proactive measures to mitigate wildfire risk to protect lives and property. Implementing recommendations in this CWPP will go a long way towards helping the district become a fire adapted community.**

Potential Fire Behavior

Topography and fuel conditions are highly variable across the district (**Figure 2.f.1**), and this variation, plus alignment between wind patterns and topography, help explain the patterns of potential fire behavior across the landscape. If wind is pushing wildfire up a steep slope, it can result in more extreme fire behavior than if a fire is backing down the leeward side of a slope. Northwest facing slopes are likely to have dense forest conditions and a greater quantity of fuel available to burn if conditions are dry enough. However, south facing slopes are usually drier than north-facing slopes, and grasses present in moderately dense forests and shrublands can dry out very quickly on hot days and support rapidly moving fires with high flame lengths.

Under extreme fire weather conditions—hot, dry, and windy conditions — almost 80% percent of the district could experience high to extreme fire behavior (**Figure 2.f.2**). High to extreme fire behavior includes ember production that ignites additional fires away from the main fire and the movement of high-intensity fire from treetop to treetop. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase. Fire growth could be extensive across the district if wildland firefighters cannot engage due to dangerous conditions from extreme fire behavior and if wildland fire moves rapidly through shrublands and grasslands. Wildfires burning on hot, dry, and windy days, conditions typical of red flag days, could spread across large portions of Evergreen if extreme fire behavior prohibits rapid fire suppression. Potential fire growth and spread are strongly affected by the initial location of a fire ignition, wind speed and direction, topography, and fuels in the pathway of the fire. Under extreme fire weather conditions fueling fires with long flame lengths and abundant ember production, fires could even spread across major roads in Evergreen. (**Figure 2.f.3**).

Important Considerations about Fire Behavior Predictions

Fire behavior models can provide reasonable estimates of relative wildfire behavior across a landscape. However, wildfire behavior is complex, and models are a simplification of reality. Models also struggle to capture impacts of structures on wildfire spread and home-to-home ignitions. It is recommended to use fire behavior analyses at a landscape scale to assess relative risk across the entire district.

Exceptionally hot, dry, and windy conditions are increasingly common due to climate change and could result in even more extreme fire behavior across the district than predicted by this analysis.

See **Appendix B** for details on fire behavior modeling used for this CWPP.

The greatest potential for extreme fire behavior within the district is concentrated in the western and southern edges of the district, where there are dense forests on steep slopes with lots of ladder fuels. The central parts of the district are expected to have more moderate fire behavior due to lower fuel densities and flatter terrain, where fires are more likely to burn as creeping surface fires. Open grassy areas and sparsely vegetated regions across the district could experience fast-moving surface fires, particularly during high-wind events. The mix of forest types and housing developments in the district poses additional risks, as homes and other structures can act as additional fuel sources, intensifying fire behavior and contributing to ember cast and potential structure-to-structure ignition

Figure 2.f.1. *Fuel loads are variable across the district, ranging from dense forests with abundant ladder fuels (top) to open forests with moderately spaced trees and few ladder fuels (bottom). Fuel type and fuel loads greatly influence fire behavior, intensity, and rate of spread. Photo credit: Anne Ludolph, Jefferson County Open Space.*

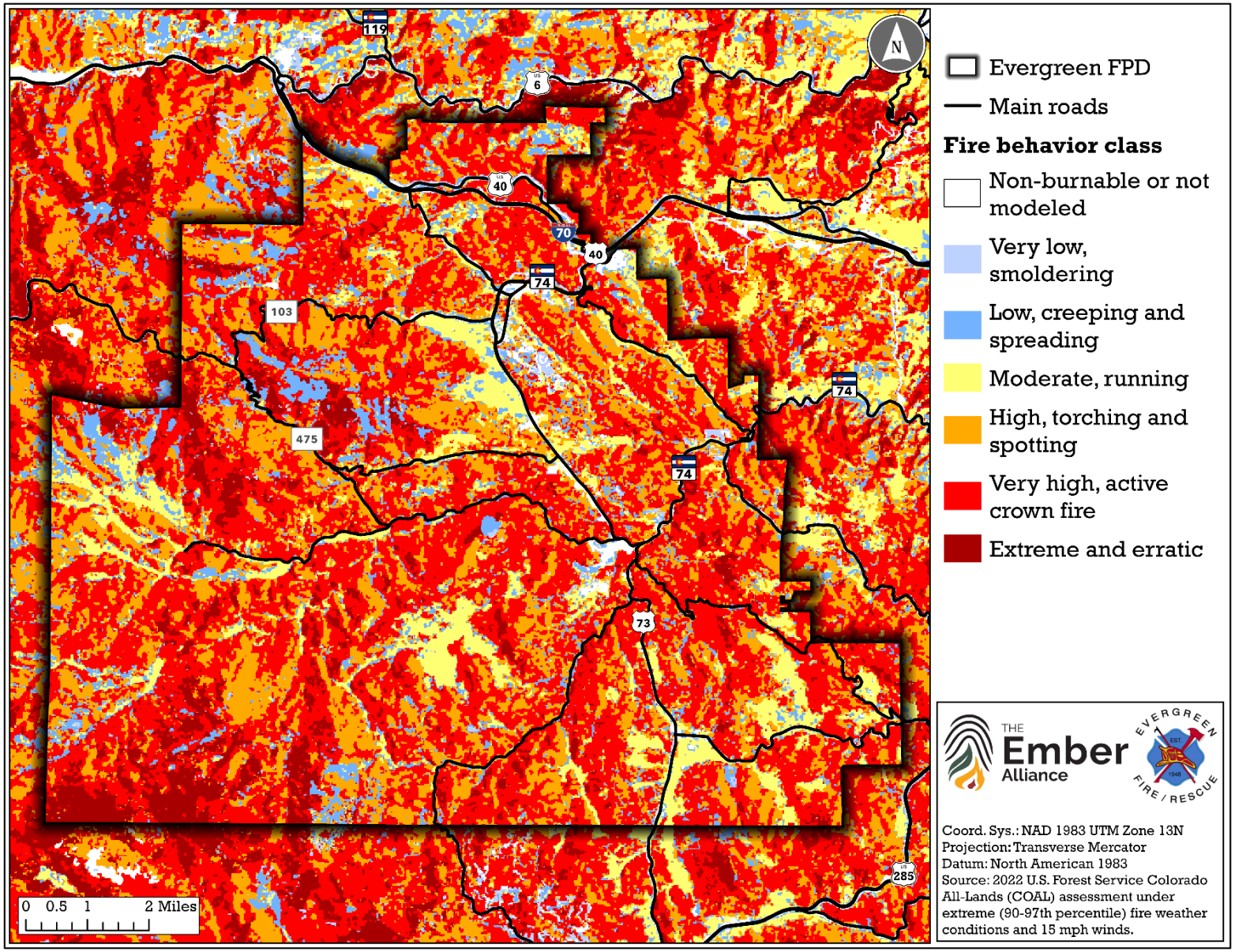


Figure 2.f.2. *Under extreme fire weather conditions—conditions typical of a summer day in the district—80% percent of the district could experience high to extreme fire behavior. High to extreme fire behavior is more likely to produce embers that ignite additional fires away from the main fire and ignite homes. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase. Source: 2022 U.S. Forest Service Colorado All-Lands (COAL) assessment. See* ***Appendix B*** *for a description of fire behavior modeling for this CWPP.*

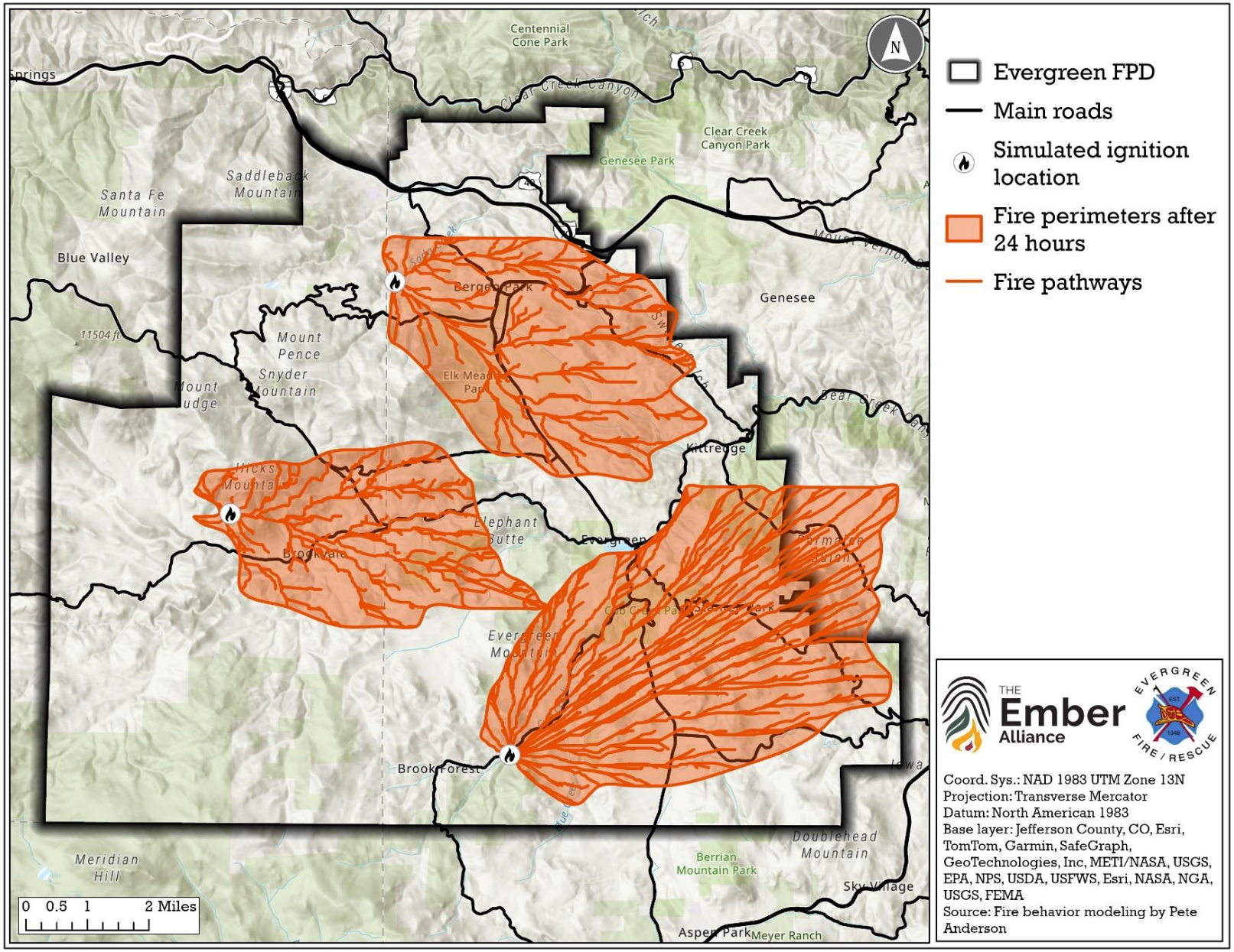


Figure 2.f.3. *Simulated fire pathways and final fire perimeters after 24 hours of unsuppressed fire spread based on fire behavior modeling using FARSITE. Weather conditions for the simulations were hot, dry, and windy—conditions typical on days with red flag warnings. Simulations were run with different predominate wind directions. Source: Pete Anderson.*

Likelihood of Wildfire

Wildfire risk is composed of hazard (potential intensity of wildfire and likelihood of wildfire) and vulnerability (exposure of highly valued resources and their susceptibility to damage). Burn probability is the annual probability of any location burning due to a wildfire. According to the 2022 Colorado All Lands (COAL) wildfire assessment from the U.S. Forest Service, the district has some of the highest burn probability in the state of Colorado.

High burn probabilities occur in much of the district due to the potential for rapid rates of fire spread across steep, complex terrain covered in dense coniferous forests or areas with abundant ladder fuels. These characteristics make much of the district highly susceptible to wildfire under extreme fire weather conditions (**Figure 2.f.4**). Lower burn probabilities are predicted east of major roads, like Highway 74, due to the potential for major roads to serve as fuel breaks under moderate fire weather conditions.

Another metric of the likelihood of wildfires is the frequency of days with weather conducive to large-scale fire growth. The district frequently experiences days with weather conducive to large-scale fire growth. Factors such as low humidity, high temperatures, steep terrain, and strong winds contribute to this risk. For instance, the Elephant Butte Fire in 2020 burned 51 acres near Evergreen. Days with red flag warnings indicate severe fire weather and require extra vigilance by fire departments and residents. Hot, dry, and windy conditions on red flag days can lead to exceptionally fast fire growth and high fire intensity that exceeds the ability of firefighters to quickly suppress the blaze. The occurrence of red flag warnings is highly variable from year to year due to regional weather patterns and weather anomalies such as El Niño and La Niña. On average, the district experiences 16 days per year of weather conditions that qualify as red flag warnings, with annual counts up to 37 days. Climate change could result in about 7 to 8 more days of very high fire danger and almost 7 times more area burned every year by 2050, depending on emissions and future conditions (**Figure 2.f.5**).

Take Away Message

Parts of the district are at high risk for large, high-severity wildfires due to dense forest conditions, dry and hot weather, and strong, gusty winds. Increasing drought and warming temperatures exacerbate wildfire risk in the area. **Proactive work by the district, partners, and residents is imperative to protect lives and property.**

Extreme fire behavior during the 2020 Elephant Butte Fire. Photo credit: Jason Hamburg, Jefferson County Open Space.

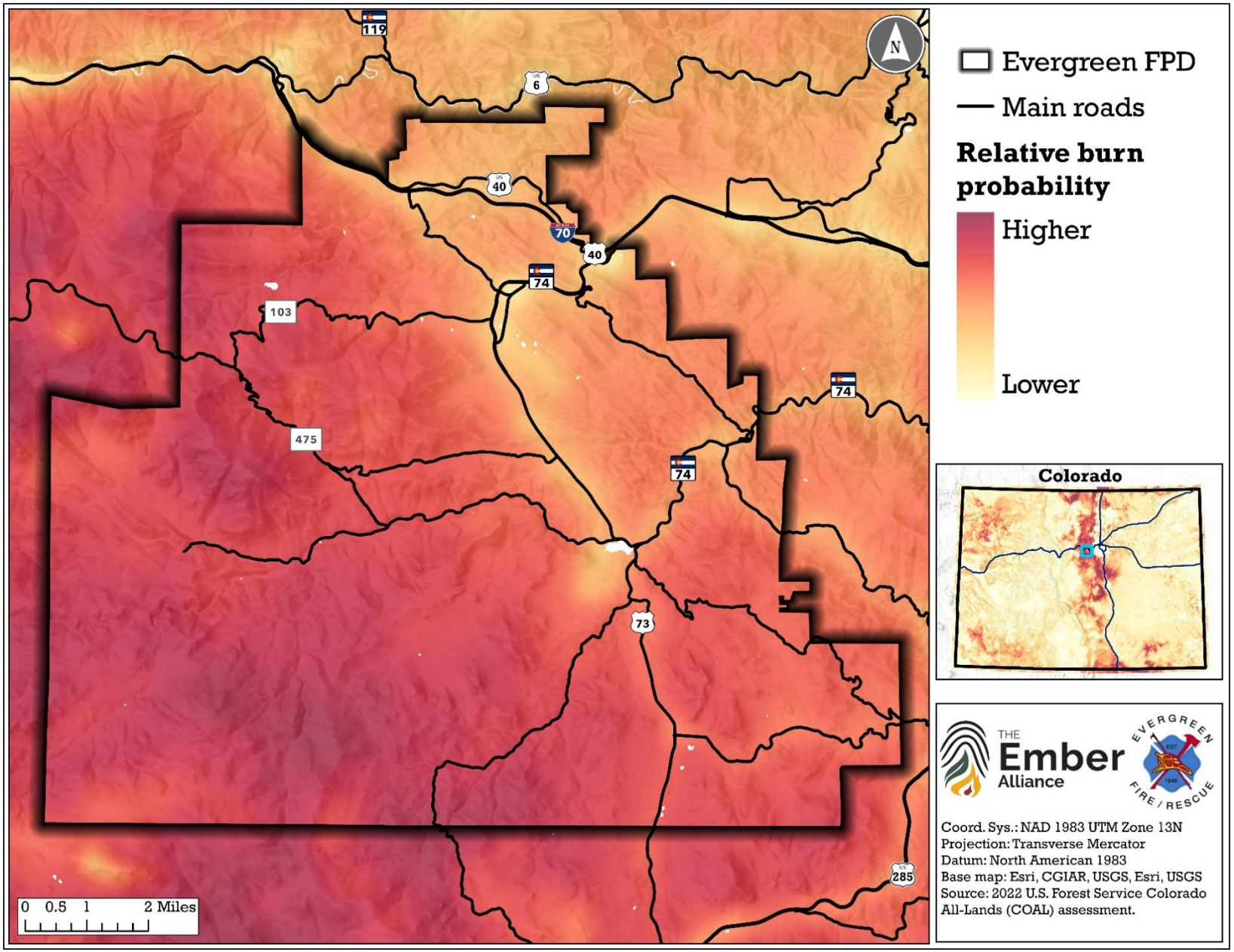


Figure 2.f.4. *Most of the district falls into the high burn probability category relative to the state of Colorado. Source: U.S. Forest Service Colorado All-Lands (COAL) assessment. See* ***Appendix B*** *for a description of fire behavior modeling for this CWPP.*

FIRE WEATHER DANGER IN EVERGREEN FPD

During Red Flag Warnings, all residents need to follow fire restrictions and be prepared to evacuate in the case of a wildfire.

RED FLAG CRITERIA

Red Flag Warnings issued by the National Weather Service to indicate that warm temperatures, very low humidity, and stronger winds are expected to result in elevated fire danger in the next 24-48 hours.

EFPD falls within the Denver/Boulder Forecast Office, which has two options for Red Flag criteria:

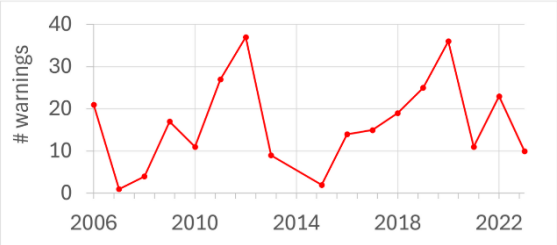
Option 1	Option 2
Relative humidity <= 15% Wind gusts >= 25 mph Dry fuels	Widely scattered dry thunderstorms Dry fuels

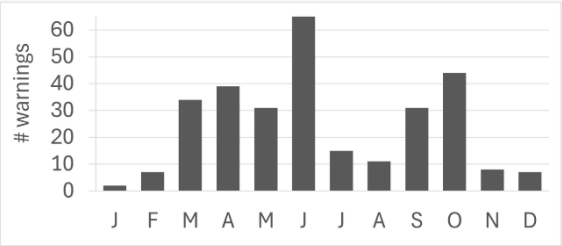
Many large wildfires around EFPD occurred during Red Flag Warnings:

2000 High Meadows
2002 Hayman
2006 Rocky Flats
2011 Indian Gulch
2012 Lower North Fork
2021 Bear Creek

WARNINGS FROM 2000-2024

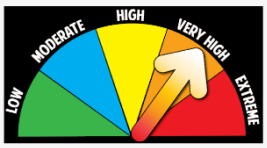
The National Weather Service issued on average 16 Red Flag Warnings/year for the fire weather zones that intersect EFPD, with as many as 37 in 2012 and 36 in 2020. Red Flag conditions most often occurred in June.





CLIMATE CHANGE MEANS MORE FIRE DANGER AHEAD

Hotter and dryer conditions due to climate change could result in 7 to 8 more days of very high fire danger and about 7x more area burned every year by 2050.



National Fire Danger Ratings are separate from Red Flag Warnings but use similar indicators of severe fire weather.

BE INFORMED ABOUT FIRE RESTRICTIONS

Permissible activities are limited during fire restrictions to protect the community.
Jefferson County: https://www.jeffco.us/511/Fire-Restrictions-Bans
Clear Creek County: https://www.clearcreekfire.com/recreation
EFR: https://www.evergreenfirerescue.com/wildland/todays_fire_danger_.php

THE Ember Alliance

Sources: Historic Red Flag Warnings for from Iowa Environmental Mesonet at Iowa State University. Future fire danger from https://climatetoolbox.org.

Figure 2.f.5. *The district experiences on average 16 red flag warnings per year, and climate change could further increase the number of days with high fire weather danger by 5 days by 2050. Source: Weather.gov, DRI.edu, ClimateCentral.org. Infographic by The Ember Alliance.*

Potential Consequences to the Community

There is a high potential for wildfire to negatively impact life safety, homes, businesses, and other highly valued resources and assets (HVRAs) in the district. According to the risk assessment for the 2024 Jefferson County CWPP, regional action areas that overlap with the district have some of the highest relative risk to homes and other HVRAs in the county.

High to extreme fire behavior can create non-survivable conditions along roadways, which is of particular concern in the district where there are few points of egress for an evacuation. Under extreme fire weather conditions, 78% of the roads in the district could experience non-survivable conditions under extreme fire weather conditions (**Figure 2.f.6**). Evacuation preparedness is of the utmost importance for residents in neighborhoods with hazardous conditions along roadways (see **Evacuation Preparedness**).

On days with extreme fire weather conditions, 71% of homes could experience damaging radiant heat from burning vegetation, and 100% of homes within the district could be exposed to embers from burning vegetation, regardless of vegetation in the immediate vicinity of the home (**Figure 2.f.7**). Homes serve as an additional source of fuel that could produce high-intensity flames, emit embers, and initiate home-to-home ignitions. Areas with an elevated risk of home-to-home ignitions include portions of Pine Valley, Echo Hills, Bergen Park, Stagecoach, Hiwan Hills, downtown Evergreen, Rosedale, Brookvale, Upper Bear Creek, Brook Forest, Buffalo Creek East, Marshdale, and downtown Kittredge (**Figure 2.f.8**). This CWPP outlines home hardening practices that residents and business owners can complete to reduce the risk of embers penetrating their homes.

While it is always a good idea to invest in defensible space and home hardening for residents in the WUI, it is equally important to understand the limitations these steps have in certain environments. Relying on those actions or expecting the fire department to be able to protect your home and family is naïve in these extreme danger scenarios. Major coordinated action across the community is needed to make conditions safer for everyone.

Several non-residential highly valued resources could also be exposed to damaging wildfire, including ranches, schools, resorts, private residences, and a museum. The Hiwan Homestead Museum on Meadow Drive is a good example of early ranch homes and support buildings. Other ranch complexes that survive include Indian Creek Park, Evans Ranch, and Singing River Ranch. Historic schools include the Bendemeer and Buffalo Park schools. Many of the early resorts were either torn down or burned down, but a few remain including Brook Forest Inn and Marshdale Lodge. There are many private historical structures in the district including homes along Bear Creek in the Troutdale Estates subdivision. Additional values at risk include critical infrastructure such as communication towers, fire stations, medical facilities, post offices, childcare centers, cemeteries, and assisted living facilities (**Appendix B**). Fuel treatments and other recommendations in this CWPP seek to reduce this exposure and protect critical resources in the district.

Impacts of wildfires do not end once the flames are extinguished. Intense rainfall events can result in flash floods, erosion, sediment delivery and debris flows the first few years following a wildfire (Neary et al., 2005). It is very possible that a large storm in the years following a high-intensity wildfire in the district could result in high to extreme sedimentation.

Erosion and sedimentation are natural processes that shape streams, transport soil and nutrients across a landscape, and create diversity in streams and riparian habitats (Prettyman, 2018). However, extreme post-fire sediment delivery and debris flows can damage and destroy homes, community assets, infrastructure, fisheries, and riparian vegetation. For example, changes to soil and vegetation brought about by the 2010 Fourmile Canyon fire exacerbated the degree of flooding experienced in Fourmile Canyon in mid-September 2013, flooding that resulted in the destruction of roads, bridges, and homes. The potential for post-fire sediment delivery and damage to values at risk can be mitigated through activities to improve stream health and resilience, strategic fuel treatments to reduce fire hazards, and pre-planning for emergency response.

Potential Benefits of Wildfire

Keep in mind that not all wildfire is damaging and destructive. Many ecosystems along the Colorado Front Range have been shaped by wildfire for centuries and some ecosystems are dependent upon frequent, low-intensity

fires. Wildfire creates important habitat for wildlife by removing trees and promoting the growth of a diversity of grasses and forbs. Areas burned by wildfires can serve as fuel breaks for decades afterwards and reduce the potential for damaging wildfire both in the burned area and surrounding landscape.

According to an analysis by the U.S. Forest Service as part of the Colorado All-Lands risk assessment, wildfire and/or broadcast prescribed burning could benefit portions of the district by restoring ecological conditions and reducing fuel loads (Napoli et al., 2022b). Beneficial fire (positive expected net value change) is more likely in areas without homes, where expected fire behavior is low to moderate, and where ecosystems are more likely to benefit from wildfire (**Figure 2.f.9**). Ponderosa pine ecosystems are very likely to benefit from lower-severity fire but could experience negative impacts from wildfires with higher-severity conditions. Lodgepole pine ecosystems are likely to benefit from higher-severity fire behavior due to their adaptation to stand-replacing wildfire with serotinous cones.

The analysis presented in **Figure 2.f.9** comes from a quantitative assessment of wildfire risk to highly valued resources and assets (HVRAs) across Colorado based on potential fire intensity, likelihood of wildfire, and the exposure, relative importance, and sensitivity of HVRAs to different types of fire behavior. Expected net value change is calculated by multiplying (1) flame length probability for each flame length class multiplied by (2) the potential impact of each flame length class on each HVRA (positive or negative impact) by (3) the relative importance of each HVRA and by the burn probability at each location. Expected net value change for each flame length class and each HVRA are then added together.

Expected net value change is positive where the overall impact of wildfire is expected to benefit HVRAs present at a location, and expected net value change is negative where the overall impact is expected to degrade HVRAs. The impact of wildfire might be negative to some HVRAs co-located in area where wildfire benefits other HVRAs, and if the potential positive benefits are greater than the potential negative impacts, and if the relative importance of the HVRA that could benefit from wildfire is greater than the relative importance of the HVRA that could be degraded by wildfire, then the expected net value change will be positive. Areas where HVRAs are more sensitive to wildfire (i.e., the HVRA can experience negative impacts even when expected flame lengths are shorter), areas where the likelihood of longer flame lengths are greater, and areas with higher burn probabilities are more likely to have a negative expected net value change.

Various interagency representatives and additional fire and resource staff participated in a virtual fire effects workshop in July 2021 to define the sensitivity of each HVRA to different types of fire behavior (also known as response functions). U.S. Forest Service line officers, area fire management officers, and interagency representatives reviewed and adjusted relative importance values proposed by Pyrologix, LLC. Categories of HVRAs for the 2022 COAL were people and property (53% relative importance), infrastructure (32%), drinking water (10%), and ecosystem function (5%). A list of sub-HVRAs and maps of and quantitative response functions for each sub-HVRA are provided in (Napoli et al., 2022b).

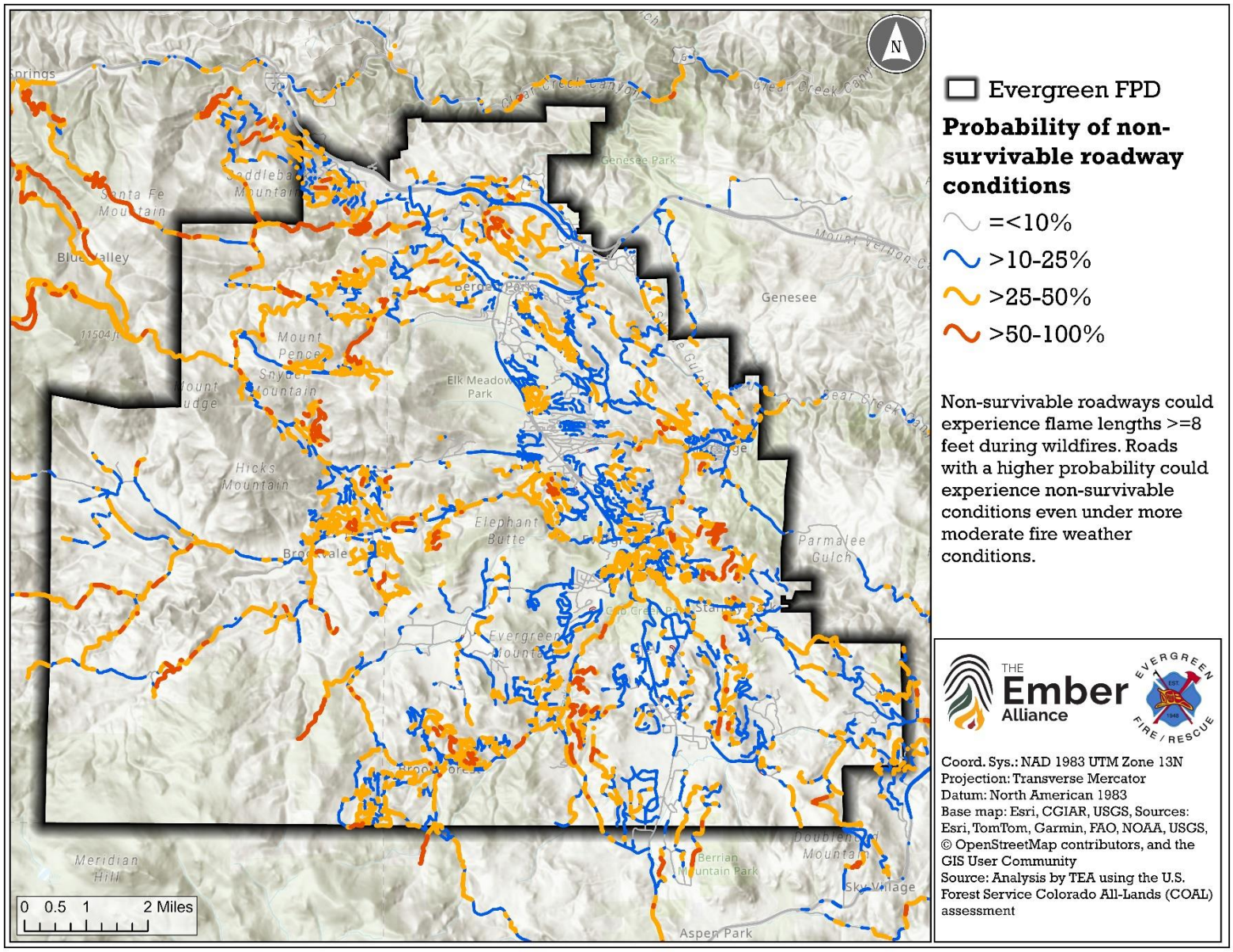


Figure 2.f.6. *Under extreme fire weather conditions, 78% of roads in the district could experience potentially non-survivable conditions during wildfires (defined as >10% probability of flame lengths over 8 feet). Roadways with a higher probability of non-survivable conditions are likely to experience >8-foot flame lengths under even moderate fire weather conditions, and those with a lower probability are only likely to experience >8-foot flame lengths under extreme fire weather conditions. Source: Analysis by The Ember Alliance using the U.S. Forest Service Colorado All Lands (COAL) dataset.*

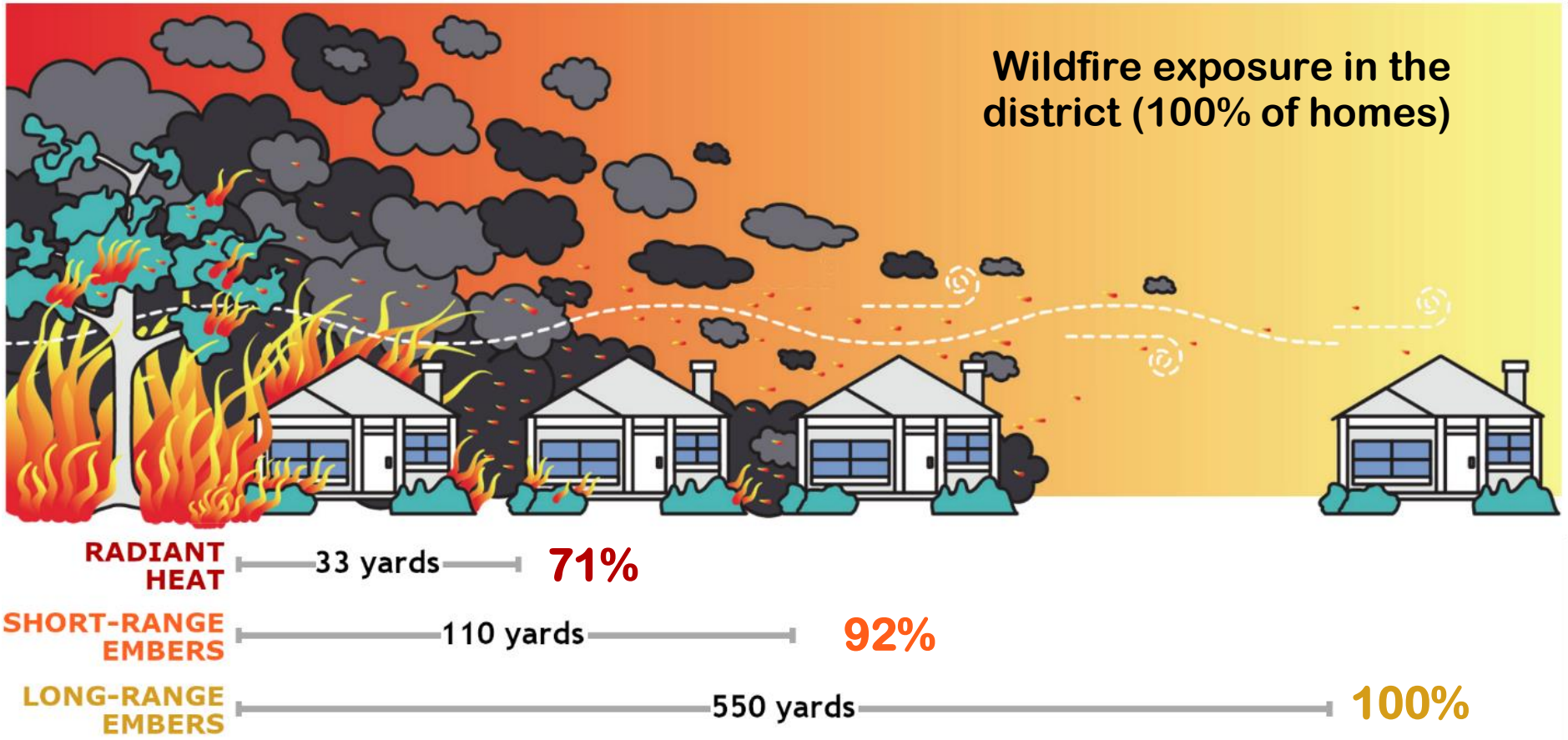


Figure 2.f.7. *Percentage of homes and campers in the district with different types of exposure to wildfire under extreme fire weather conditions. Radiant heat from burning vegetation can ignite nearby homes, and embers emitted from burning vegetation or other homes can travel long distances and ignite vegetation and homes away from the main fire. Analysis based on research by Beverly et al., (2010) (see* ***Appendix B*** *for details). Image modified from Reducing Brushfires Risks by the Victorian Auditor-General's Office.*

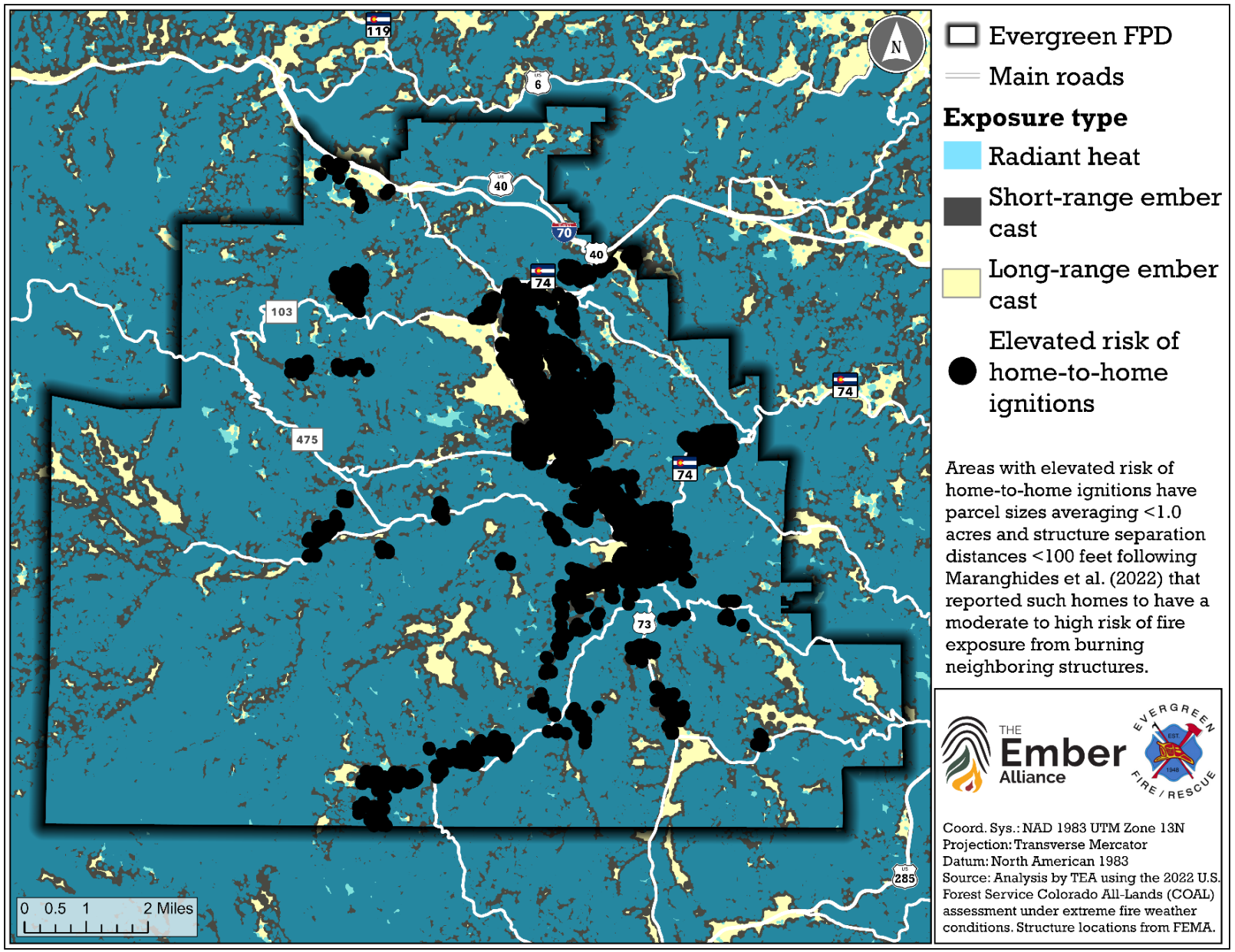


Figure 2.f.8. *Embers from burning vegetation could be transported to every portion of the district. There are several locations with an elevated risk of home-to-home ignitions due to their density and proximity. Burning structures can produce high-intensity flames and emit embers that ignite nearby structures Source: Analysis by The Ember Alliance using the U.S. Forest Service Colorado All Lands (COAL) dataset and structure locations from FEMA. See* ***Appendix B*** *for methodology.*

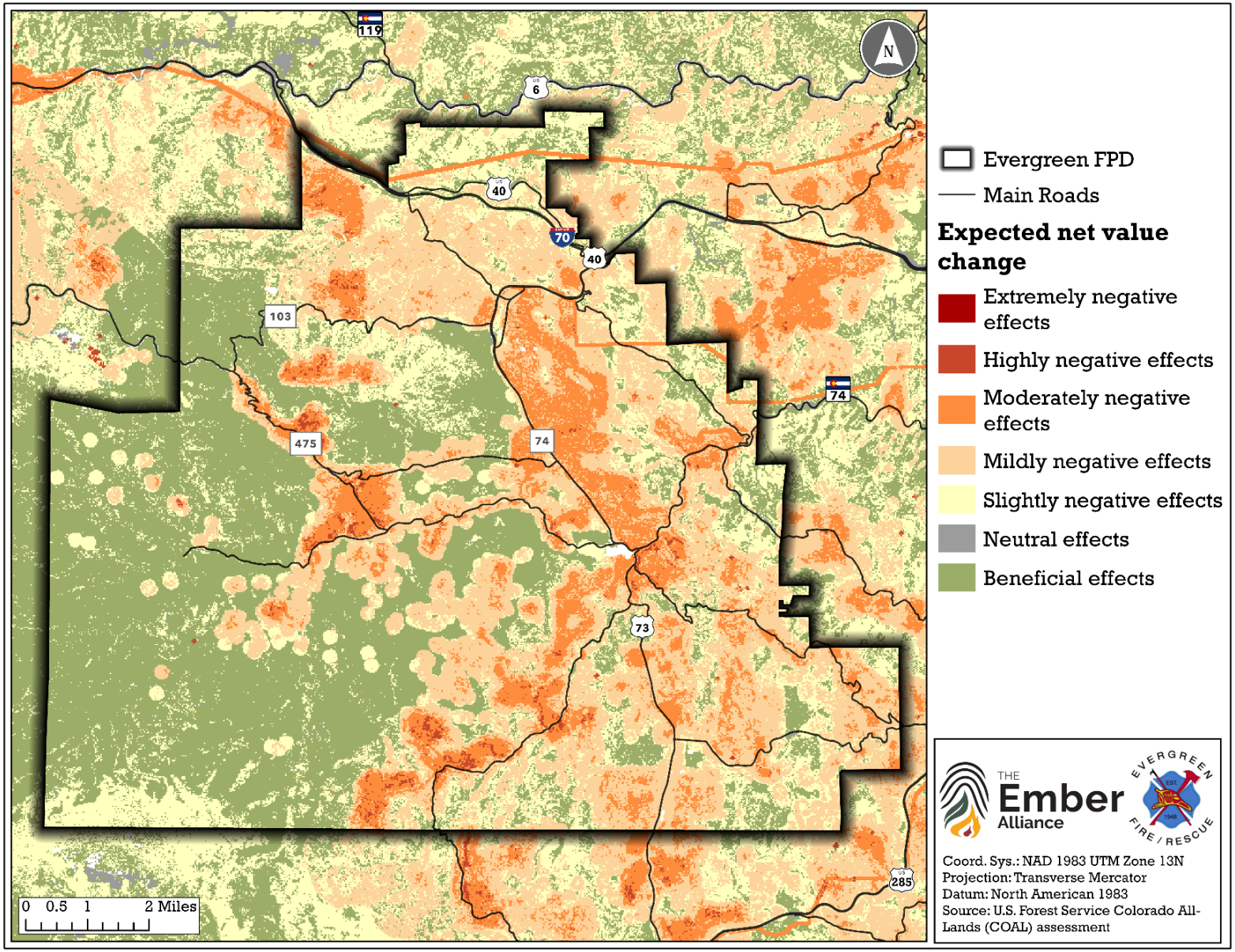
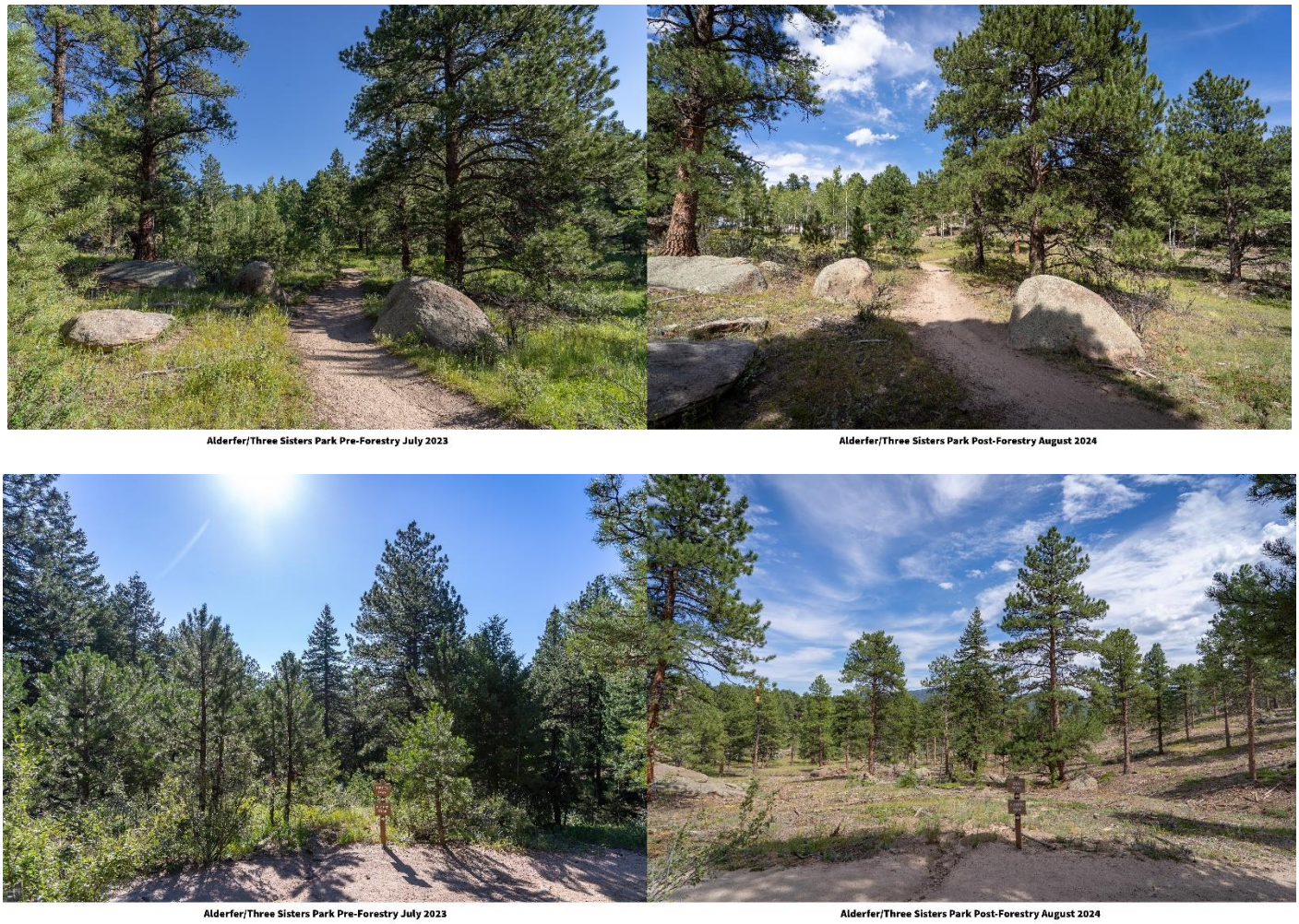


Figure 2.f.9. *According to an analysis by the U.S. Forest Service for the state of Colorado, wildfire and/or broadcast prescribed burning could benefit portions of the district by restoring ecological conditions and reducing fuel loads. Beneficial fire is more likely in areas without homes and where expected fire behavior is moderate. The analysis considered potential fire behavior, likelihood of wildfire, exposure of values at risk, relative importance of values, and sensitivity of values to different types of fire behavior. Source: U.S. Forest Service Colorado All Lands (COAL) dataset. See* ***Appendix B*** *for methodology.*

2.g. Fuel Treatment History in and Around the District

Fuel treatments reduce the amount of fuel in strategic locations, reducing fire risk to nearby communities and creating tactical opportunities for wildland firefighters to engage with wildland fires. Fuel treatments were important tactical features during the Cameron Peak Fire because they reduced the potential for extreme fire behavior in strategic locations (Avitt 2021). Fuel treatments can also create healthy, resilient forest conditions with abundant understory plants, improved wildlife habitat, and lower the risk of high-severity wildfires. The effectiveness of fuel treatments is influenced by a variety of factors, including the intensity, quality, and extent of treatment, location of treatments, maintenance of treatments, weather conditions and fire behavior, and actions of firefighters (Agee et al., 2000; Jain et al., 2021). Fuel treatment methods include tree thinning, pruning, pile burning, broadcast prescribed burning, and fuel mastication (See **Fuel Treatments and Ecological Resilience** for a description of fuel treatment methods including the benefits of prescribed fire).



In 2023, Jefferson County Open Space removed trees to create a healthy, resilient forest with abundant understory plants and a lower chance of high-severity wildfires. Photo credit: Anne Ludolph, Jefferson County Open Space.

Public land managers and private residents in and around the district have conducted fuel treatments on about 4,463 acres since 2000 to reduce wildfire risk and create healthy ecosystems (**Figure 2.g.1**). Some of these acres have been treated more than once, for example, some areas were thinned and then experienced a prescribed burn. These treatments include thinning, pile burning, and broadcast burning. Thinning efforts, often involving hand thinning, chipping, mulching, and lop-and-scatter techniques, have reduced tree density and ladder fuels to lower the risk of crown fires. Prescribed burning mimics naturally occurring wildfire, can treat hundreds of acres at a time, removes surface fuel, and is relatively cost-effective (Hartsough et al., 2008; Hunter et al., 2007). Prescribed burns can reduce property damage during wildfires because they are so effective at reducing fuel loads (Loomis et al., 2019).

Fuel treatments have been conducted collaboratively by federal and local agencies, including Jefferson County Open Space, the U.S. Forest Service, Denver Mountain Parks, Jefferson Conservation District, Colorado State Forest Service, and partners such as the Evergreen Fire Protection District and The Ember Alliance. These efforts are concentrated in areas such as Genesee Park, Pence Mountain, Harris Park, and other locations throughout the district to protect communities and critical infrastructure while promoting healthier forest ecosystems.

The Colorado State Forest Service, US Forest Service, Jefferson County Open Space, and partners safely conducted broadcast prescribed burns on 724 acres and pile burns on 110 acres of the Bergen Peak State Wildlife Area, Elk Meadow Park, Cub Creek Park, and Arapaho and Roosevelt National Forests between 2000-2024. With proper planning and implementation, qualified firefighters can safely conduct appropriate broadcast prescribed burning in the WUI (Hunter et al., 2007).

An essential component of this CWPP was identifying locations for additional fuel treatments to protect the community. **Section 4** outlines these priority locations and the land management agency leading these efforts in the coming years.

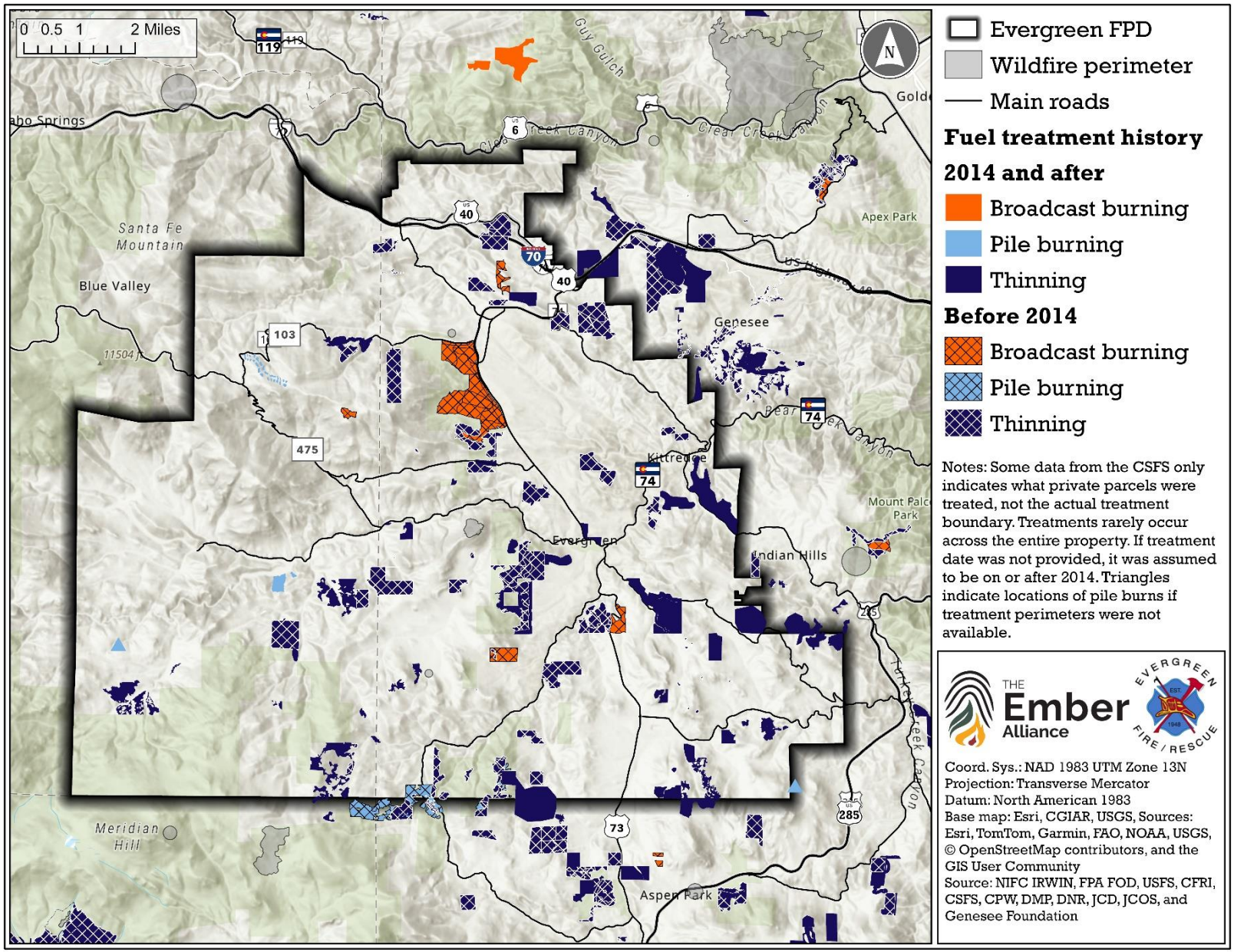


Figure 2.g.1. *Locations of forest management treatments and wildfires in and around the district. Some data from the CSFS only indicates what private parcels were treated, not the actual treatment boundary. Treatments rarely occur across the entire property. Source: National Interagency Fire Center, Fire Program Analysis fire-occurrence database, USFS, CFRI, CSFS, CPW, DMP, JCD, JCOS, and Genesee Foundation.*

3. Becoming a Fire Adapted Community

It is recommended that EFR, HOAs, and residents embrace the concept of Fire Adapted Communities (FAC), which is defined by the National Wildfire Coordinating Group (NWCG) as "a human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire." This concept can guide residents, fire practitioners, and communities through a holistic approach to become more resilient to fire (**Figure 3.1**).

Your community's CWPP sets the stage for fire adaptation, and the next step is on-the-ground action and an ongoing commitment to risk mitigation at all levels of the community, from individuals to neighborhoods and HOAs, to EFR, land managers, and other partners. This section of the CWPP includes recommendations and resources for mitigating wildfire risk and enhancing emergency preparedness. EFR and public land managers have an important role to play in implementing the recommendations in this CWPP, and they have made commitments to take on-the-ground action as outlined in **Section 4.**

Individual homeowners, neighborhoods, and HOAs also have a vital role to play in addressing shared wildfire risk. Action and community-building centered around mitigation have reduced wildfire risk and increased community resilience across the mountain west. Mitigation work by residents can spur mitigation by their neighbors (Brenkert-Smith et al., 2013). The cumulative impact of linked defensible space across private properties can improve the likelihood of home survival and protect firefighters during wildfire events (Jolley, 2018; Knapp et al., 2021).

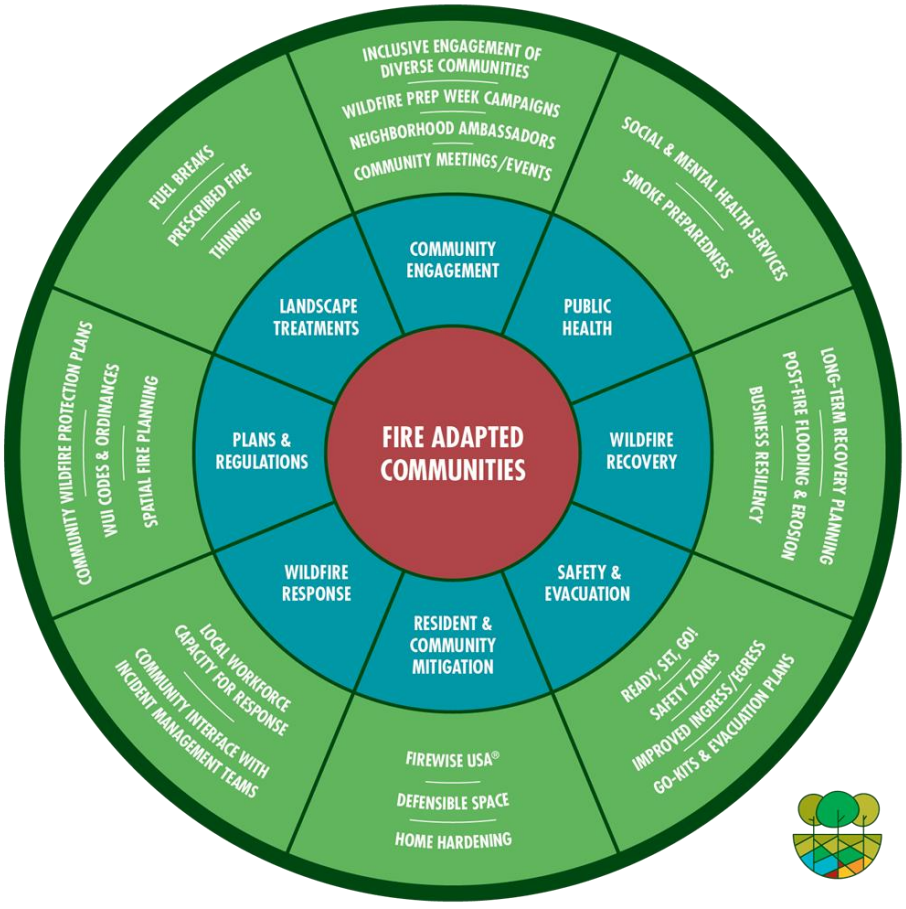


Figure 3.1. *The Fire Adapted Communities graphic provides specific programs and activities that communities can take to reduce their wildfire risk and increase their resilience Source: [Fire Adapted Community Learning Network](#).*

3.a. Recommendations for Residents

Mitigate the Home Ignition Zone

During catastrophic wildfires, property loss happens mostly due to conditions in the **home ignition zone** (HIZ). The home ignition zone includes your home and other structures (e.g., sheds and garages) and the area within 100 feet of each structure. Firefighter intervention, adequate defensible space, and home hardening measures are common factors for homes that stand strong during major wildfires (IIBHS, 2019; Knapp et al., 2021; Maranghides et al., 2022).

It is important for residents to work together as a community to mitigate shared wildfire risk in the HIZ. Structure-to-structure ignition is a major concern in high-density WUI neighborhoods and can cause substantial property loss. For example, 99% of the 848 structures that were exposed to direct flame contact during the 2021 Marshall Fire were within 100 feet of another structure, and 78% were within 30 feet (Holstrom et al., 2023). Neighbors can increase their homes' chances of survival during a wildfire if they work together to reduce hazards in their overlapping defensible space.

Defensible space is the area around a building where vegetation, debris, and other types of combustible fuels have been treated, cleared, or reduced to slow the spread of fire and reduce exposure to radiant heat and direct flame. It is encouraged that residents develop defensible space so their homes can stand strong during a wildfire without relying upon limited firefighter resources.

Home hardening is the practice of making a home less likely to ignite from the heat or direct contact with flames or embers. It is important to remember that embers can ignite homes even when the flaming front of a wildfire is far away. Home hardening involves reducing structural ignitability by changing building materials, installation techniques, and structural characteristics of a home. Home hardening measures are particularly important for WUI homes; 50 to 90% of homes ignite due to embers rather than radiant heat during wildfires (Gropp, 2019; Holstrom et al., 2023; Johnston, 2018).

You can increase the likelihood that your home will stand strong during a wildfire and help protect the safety of firefighters by creating defensible space, replacing or altering building materials to make your home less susceptible to ignition, and increasing firefighter access along your driveway.

Wildfire Risk Reduction Requirements in the district

In January 2020, Jefferson County approved new building construction regulations for homes above 6,400 feet in elevation, and the Jefferson County Department of Development and Transportation provides a list of approved building materials to help address the high potential for home loss in the WUI.

In December 1995, Jefferson County updated their zoning resolution and land development regulations to create new standards for properties in the Wildfire Hazard Overlay Zone District, which is that area of the County generally above 6,400 feet in elevation. The Zoning Resolution required that building permits for new homes and additions over 400 square feet create defensible space. The Land Development Regulation required a wildfire hazard mitigation plan for new subdivisions.

In January and October 2022, Jefferson County revised their zoning resolution to modify the name of the Wildfire Hazard Overlay District to the Wildland Urban Interface (WUI) Overlay District, require all new structures, additions to structures and driveways create defensible space at the time of building permit, and modify landscaping standards.

In April 2024, Clear Creek County adopted wildfire hazard mitigation codes to establish minimum standards for design and construction of buildings.

New construction and replacement construction that require a building permit must comply with building standards in the respective county. Building, development, and WUI codes are updated regularly, please check with your local county department for the most up to date information.

Home Ignition Zones 1-3

Completely eliminating fuels immediately adjacent to the home and reducing fuels beyond creates a buffer between your home and grass, trees, and shrubs that could ignite during a wildland fire. Mitigation in the HIZ can slow the spread of wildfire, prevent direct flame contact, and reduce the chance that embers will ignite material on or near your home (Hakes et al., 2017). Substantially reducing vegetation within the HIZ and removing vegetation that overhangs decks and roofs can reduce structure loss, especially for homes on slopes (Syphard et al., 2014).

The home ignition zone is divided into three zones around a home or other structure, and recommended practices vary among zones. The Colorado State Forest Service (CSFS) defines zone 1 as 0 to 5 feet from the home (HIZ1), zone 2 as 5 to 30 feet from the home (HIZ2), and zone 3 as 30 to 100 feet from the home (HIZ3)(**Figure 3.a.1**). Some organizations call zone 1 the "noncombustible zone" and zone 2 the "lean, clean, and green zone".

Do not count on firefighters staying to defend your home—your home should be able to stand strong on its own during a wildfire. There are never enough firefighters to stay and defend every single home during large incidents. Properties that are not defensible will often not receive firefighter resources due to unsafe conditions and the higher likelihood of home loss regardless of firefighter intervention.

Property owners should mitigate conditions in the HIZ around each building on their property, including campers/RVs, detached garages, storage buildings, barns, and other structures. RVs are highly flammable and can emit embers that might ignite nearby homes and vegetation. Removing all vegetation under and around campers in HIZ1 is crucial. Campers/RVs, boats, detached garages, storage buildings, barns, and other large structures should be placed at least 50 feet away from primary structures to prevent structure-to-structure fire spread (Maranghides et al., 2022).

A 2021 study from the University of Colorado-Boulder showed that homeowners living in the WUI in Bailey, CO typically underestimated the level of risk their home faces due to wildfire, and tended to overestimate the amount of work done to protect their property (Simpkins, 2021). Make sure you are informed about best practices for protecting your home. See **Table 3.a.1** and the CSFS publication The Home Ignition Zone for recommendations. **Home Ignition Zone 3 Recommendations by Vegetation Type** includes specific HIZ3 recommendations.

Some homes in the district have exemplary defensible space with mowed grass near structures, trees limbed and not overhanging roofs, and non-flammable barriers within home ignition zone 1. Photo credit: Keenan Prouty, EFR.

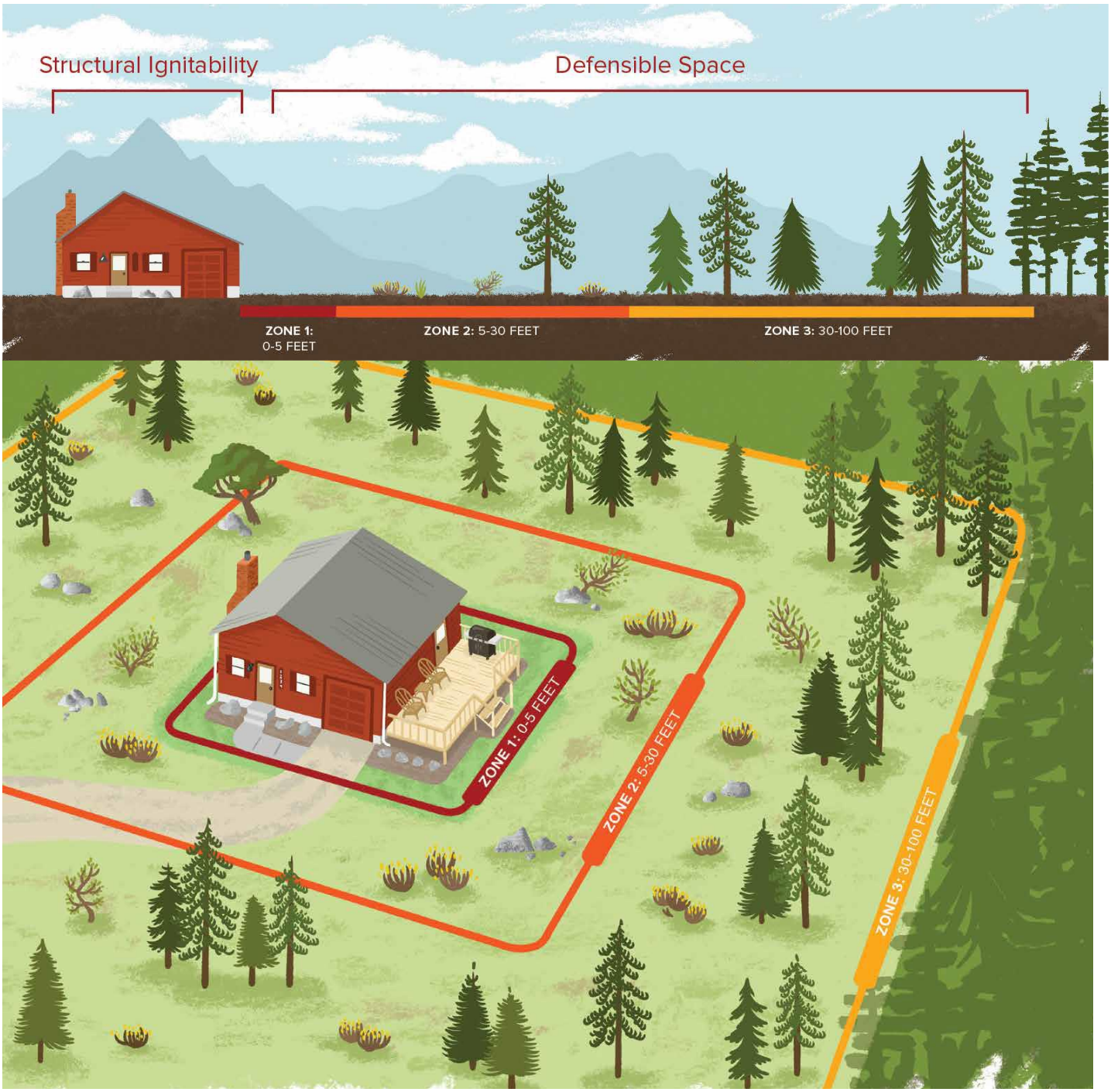


Figure 3.a.1. *Home ignition zones recommended by the Colorado State Forest Service. Using ignition-resistant building materials and removing burnable fuel around primary structures, outbuildings such as sheds, and campers/RVs is crucial for increasing your home's chance of standing strong during a wildfire and creating safer conditions for wildland firefighters. Source: Colorado State Forest Service 2021, The Home Ignition Zone.*

Table 3.a.1. *Home ignition zone recommendations based on the CSFS publication The Home Ignition Zone. Specific measures will depend on the placement and condition of your property.* ***Home Ignition Zone 3 Recommendations by Vegetation Type*** *includes specific HIZ3 recommendations.*

Zone 1: 0 to 5 feet from your home – the noncombustible zone.
Goal: Prevent flames from coming into direct contact with your home.
• Create a noncombustible border 5 feet around your home. Remove all vegetation and replace flammable wood chips or mulch with alternatives like dirt, stone, flagstone, concrete, or gravel. Research shows that the worst materials to use in zone 1 are shredded rubber, pine needles, and shredded western red cedar due to their high flammability (Quarles and Smith, 2011). • Remove branches that hang over your roof and drop needles onto your roof and remove all fuels within 10 feet of the chimney. • Remove combustible materials (dry vegetation, wooden picnic tables, juniper shrubs, etc.) from underneath, on top of, or within 5 feet of decks, overhangs, windows, and doors. • Annually remove dead or dry leaves, pine needles, and dead plants within 5 feet of your home and off your deck, roof, and gutters. Raking material farther than feet from structures will not significantly reduce the likelihood of ignition. • Move firewood or other combustible materials to zone 3. • Do not use space under decks for storage.

Zone 2: 5 to 30 feet from your home – the lean, clean, and green zone.
Goal: Slow the movement of flames approaching your home and lower the fire intensity.
• Maintain and mow grasses to 4 inches tall or less. If you are unable to irrigate, replace dry grasses with low-flammability plants that are more drought tolerant and less flammable. • Remove any accumulated surface fuels such as logs, branches, slash, and mulch. • Remove all common junipers because they are highly flammable and tend to hold a layer of flammable material beneath them. Landscape with plants that have more fire-resistant attributes, like short-statures, deciduous leaves, and higher moisture content. See low-flammability plants from Colorado State University Cooperative Extension for suggestions. • Remove enough trees to create at least 10 feet* of space between crowns. Measure from the outermost branch of one tree to the nearest branch on the next tree. Create even more space between trees if your home is on a slope (**Table** 3.a.2). See **Figure** 3.a.2 for how to measure crown spacing. • Favor the retention of aspen trees because this species naturally has high fuel moisture, no low branches, and smooth bark, making them less likely to ignite than conifer trees. • Remove ladder fuels under remaining trees. This is any vegetation that can bring fire from the ground up into taller fuels. • Remove limbs so branches do not hang below 6 feet above the ground, ideally not below 10 feet above the ground. See **Figure** 3.a.2 for a depiction of how to measure limb height. • Keep spacing between shrubs at least 2-3 times their height. • Relocate wood piles and propane tanks to zone 3. • Remove stressed, diseased, dead, or dying trees and shrubs. This reduces the amount of vegetation available to burn and improves forest health. • Keep shrubs at least 10 feet* away from the edge of tree branches.

Zone 3: 30 to 100 feet from your home – if you live on a slope, this zone should be larger due to the greater potential for extreme fire behavior.

Goal: Slow movement of flames, move fire to the ground, and reduce ember production.

- Store firewood and propane tanks at least 30 feet away and uphill from your home and away from flammable vegetation. Store even farther away if your home is on a slope.
- Move campers/RVs, boats, detached garages, storage buildings, barns, and other large structures at least 50 feet away from your home.
- Mow or trim grasses to a maximum height of 6 inches. Grasses can be taller in zone 3 than zone 2 because of the greater distance from your home, but shorter grass is always better for reducing potential flame lengths and therefore radiant heat exposure.
- Remove enough trees to create at least 6- to 10-foot spacing* between the outermost branches of remaining trees. Create even more space between trees if your home is on a slope (**Table** 3.a.2). See **Figure** 3.a.2 for a depiction of how to measure crown spacing.
- Favor the retention of aspen trees because this species naturally has high fuel moisture, no low branches, and smooth bark, making them less likely to ignite than conifer trees.
- Remove limbs so branches do not hang below 6 feet above the ground, ideally not below 10 feet above the ground. See **Figure** 3.a.2 for a depiction of how to measure limb height.
- Remove shrubs and saplings that can serve as ladder fuels.
- Remove heavy accumulations of dead trees, branches, and piles of fallen leaves, needles, twigs, pinecones, and small branches. Thin trees to increase spacing and remove ladder fuels to reduce the likelihood of torching, crown fires, and ember production.
- Consult with a qualified forester to develop a plan to manage your property to achieve fuel reduction and other goals, such as creating wildlife habitat. The Colorado State Forest Service's Golden Field Office provides a list of Forest Ag contractors on their website to help homeowners can find local, reliable private contractors for mitigation work they cannot complete themselves.

*Spacing recommendations are a general guideline and should be increased for properties on steeper slopes. Reach out to EFR, CSFS, JCD, or other forestry professionals to develop a plan for mitigating wildfire risk on your property.

Aspen trees naturally have high fuel moisture, no low branches, and smooth bark, making them less likely to ignite than conifer trees. Retaining small groups of aspen trees is acceptable in zone 2—just remember to rake up dry leaves that fall onto your roof or on the ground within 5 feet of your home. Photo credit: Fire Adapted Colorado.

Table 3.a.2. *Minimum recommended spacing between tree crowns and shrubs is greater for properties on steeper slopes due to the exacerbating impact of slope on fire behavior (Dennis, 2003).*

Percent slope	Min. spacing between tree crowns	Min. spacing between shrubs
0 to 10 %	10 feet	2.5 x shrub height
11 to 20%	15 feet	3 x shrub height
21 to 40%	20 feet	4 x shrub height
>40%	30 feet	6 x shrub height

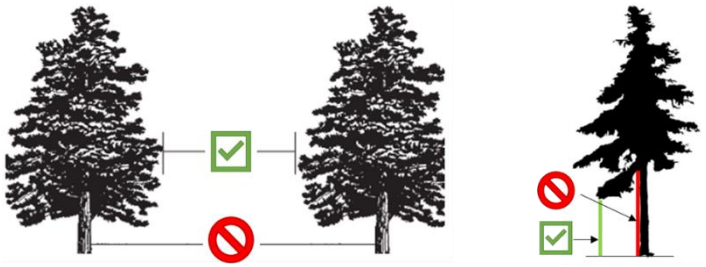


Figure 3.a.2. *Spacing between tree crowns is measured from the edge of tree crown to tree crown, NOT from tree stem to tree stem (left). Height of limbs above the ground is measured from the ground to the lowest point of the limb, NOT from where the limb attaches to the tree (right).*

Some homeowners in the WUI are concerned that removing trees will destroy the forest and reduce the aesthetic and monetary value of their property. In fact, many dense ponderosa pine forests are unhealthy and greatly diverged from historical conditions that were maintained by frequent wildfires (**Figure 2.e.1**). The reality is that nothing will decrease the aesthetic and monetary value of your home as much as a high-severity wildfire burning all the vegetation in the community, even if your home survives the fire. Forest management can look messy and destructive in the first years following treatment; however, grasses, shrubs, and wildflowers will respond to increased light availability after tree removal and create beautiful ecosystems with lower fire risk. It might even be said that the more trees you cut, the more trees you save from wildfire.

Many property owners enjoy their land even more after conducting effective fuel treatments. Removing trees can open incredible views of mountains, rivers, and rock formations, and wildlife are often attracted to forests with lower tree densities and a greater abundance of understory plants. Reducing fuel loads and increasing the spacing between trees increases the chance that your home and your neighbors' homes will stand strong during a wildfire, and most importantly, it increases the safety of wildland firefighters working to protect your community**.**

Grasses, shrubs, and wildflowers quickly respond to increased light availability after tree removal, resulting in beautiful ecosystems with lower fire risk and more high-quality wildlife habitat. The yellow star in each photo indicates the same tree. Photo credit: Jefferson Conservation District.

Linked Defensible Space

The home ignition zone of individual homes can overlap that of their neighbors, so wildfire hazards on one property can threaten adjacent properties. Structures that are on fire can emit significant radiant heat and embers and endanger homes and structures near them**.** Nearly all structures in the district (93%) share a HIZ with at least one neighboring structure, and 13% share a HIZ with 11 or more structures (**Figure 3.a.3**). When structures are closely spaced and have overlapping HIZs, there is a greater potential for structure-to-structure ignitions, especially if structures are not mitigated or hardened (Syphard et al., 2012). Mitigating HIZs for all structures, not just primary homes but also secondary structures such as garages and sheds, is critical for reducing the potential for wildfires to become urban conflagrations with structure-to-structure fire spread that can quickly outpace the ability of wildland and structural firefighters to respond (Maranghides et al., 2022).

Neighbors can increase their homes' chances of survival during a wildfire if they work together to create linked defensible space. Linked defensible space that expands beyond HIZ 3 and onto surrounding land can be thought of as **neighborhood reduced fuel zones** that create safer conditions and better tactical opportunities for wildland firefighters. According to James White, the former Rocky Mountain Region Cooperative Fire Specialist, "Broadcast burning, mechanical thinning, and other treatments are proven to mitigate wildfire risk, but they are even more effective when we work together to integrate treatments across the landscape, across borders and ownerships" (Avitt, 2021). Defensible space projects that span ownership boundaries are better candidates for grant funding due to their strategic value. Potential neighborhood reduced fuel zones are displayed in maps for each plan in **Section 3.b.**

How can you help inspire your neighbors to act? Start by creating defensible space and hardening your own home. Then try the ideas below:

- ✓ Get a home assessment from EFR and discuss the learnings with your neighbors.
- ✓ Invite your neighbors over for a friendly conversation about the risk assessment in the CWPIPs. Review resources about defensible space together, discuss each other's concerns and values, and develop joint solutions to address shared risk.
- ✓ Follow and share guidance from Rotary Wildfire Ready and CSFS Live Wildfire Ready to help educate your community about the benefits of defensible space and home hardening.
- ✓ Join your plan unit's Community Wildfire Ambassador Program (see **Community Wildfire Ambassador Program**).
- ✓ Help organize walking tours in your neighborhood to visit the property of residents with exemplary defensible space. Witnessing the type of work that can be done, and seeing that a mitigated property can still be aesthetically pleasing, can encourage others to follow suit.
- ✓ Apply for grants that support fuels mitigation for multi-homeowner projects (see **Section 3.e. Funding Opportunities**).

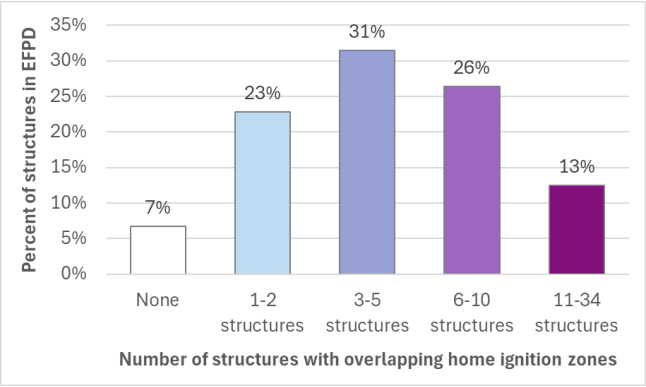
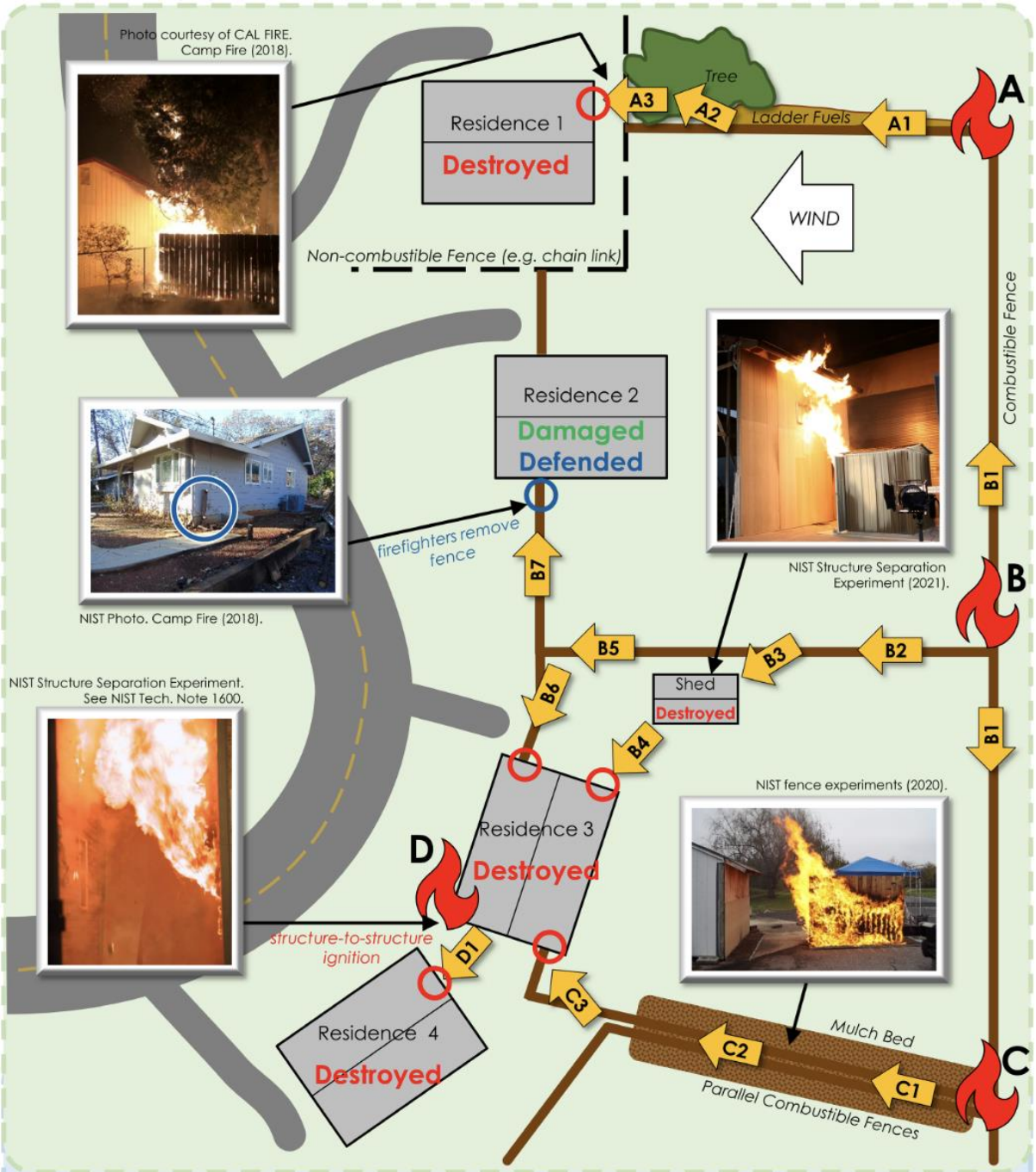


Figure 3.a.3 *Almost all structures (93%) within the district share an overlapping HIZ with at least one other structure, opening them up to a higher risk of igniting from radiant heat or short-range embers from nearby structures.*



Embers can bring fire into communities. Once fire has started, fire spreads along multiple pathways:

A: Spot fire ignites fence, burning along ladder fuels (*A1*) to larger vegetation (A2), and ignites Residence 1 on adjacent parcel (*A3*).

B: Fence ignition propagates fire on multiple parcels (*B1, B2*). Fence ignites shed (B3). Exposures from shed and fence ignite Residence 3 (*B4, B6*).

Fence ignites Residence 2 (*B7*). Defensive actions save Residence 2.

C: Parallel fences on adjacent parcels exponentially intensify fire exposure (*C1, C2*) which ignites Residence 3 (C3).

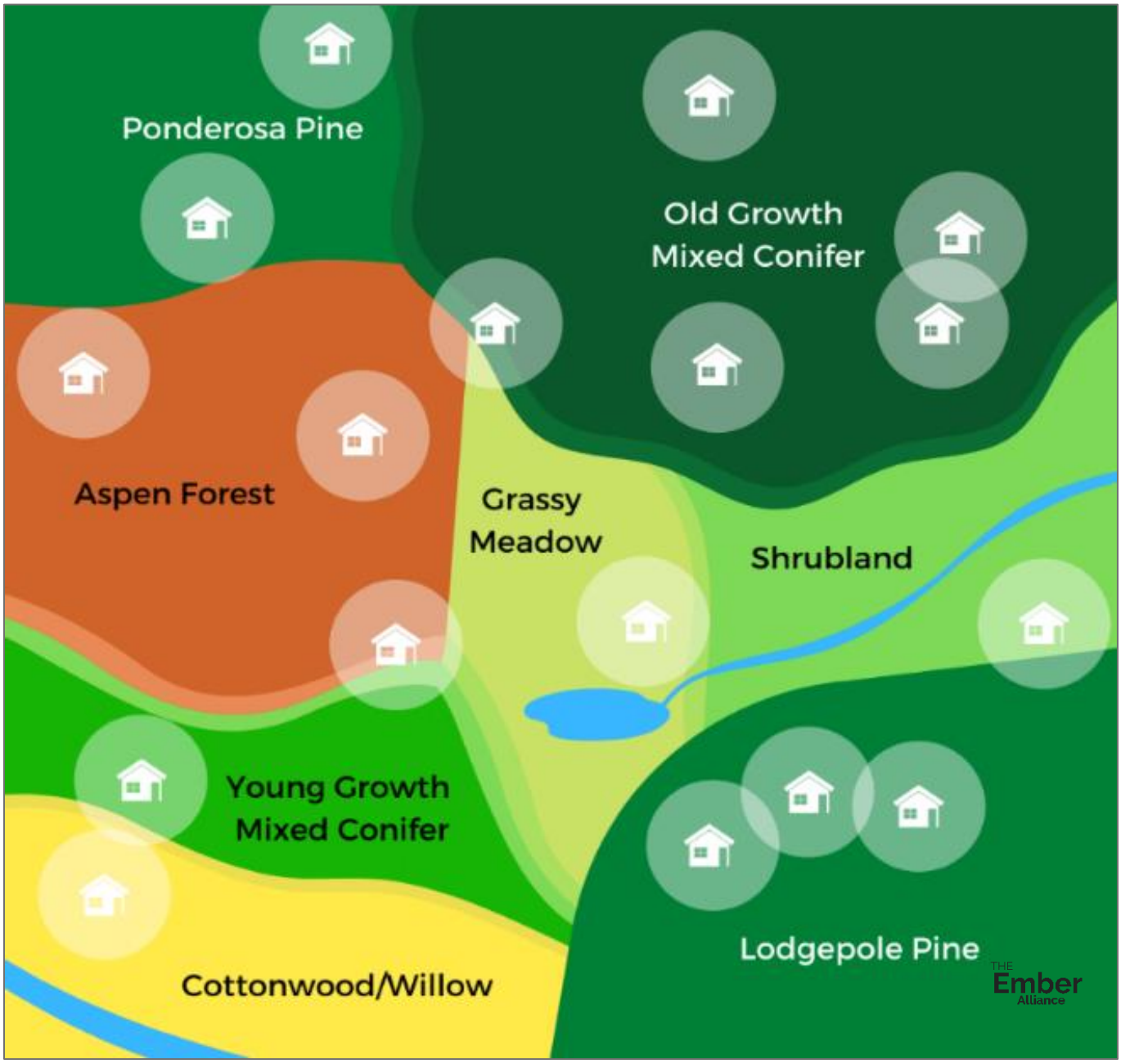
D: The exposure from burning Residence 3 ignites Residence 4 (*D1*).

Fire spread along pathways in a community can affect neighbors even if individuals have completed home hardening and defensible space for their own property. This type of fire spread can lead to urban conflagrations that outpace ability of firefighters to respond. Source: National Institute of Standards and Technology.

Mosaic Landscapes

Varied fuel types are known to slow the spread of fire, and heterogeneous landscapes (landscapes with multiple fuel types and trees of different sizes and ages) are more typical of historical forest conditions (Duncan et al., 2015). Creating a mosaic landscape in neighborhoods can help slow fire spread by changing the fuel types as it moves across a hill or valley. A mosaic landscape can be created in many ways. For example, a neighborhood could have a few acres of old-growth conifer trees next to a couple of acres of aspen stands, and a few acres of young regenerating conifer trees by a large grassy meadow. This can be arranged in many ways for aesthetic and tactical purposes and will resemble a patchwork quilt or mosaic art.

The homes in each of these patches still need to have adequate defensible space, but these conditions would create a more diverse landscape where fire may move slower as it transitions between forest types and unforested locations like shrublands or meadows. Slower fire movement means firefighters have time to defend more homes in the neighborhood. It also creates a diversity of biomes that both residents and wildlife enjoy.



Example of a mosaic landscape in a neighborhood. Each home has defensible space around it, and the landscape is varied throughout, providing tactical opportunities for firefighters working to defend homes. Source: The Ember Alliance.

Home Ignition Zone 3 Recommendations by Vegetation Type

Local knowledge and professional expertise are needed to design effective, site-specific fuel treatments based on the best available science. Specific fuel treatment recommendations are dependent on forest type, tree density, fuel loads, terrain, land use, and management objectives. The location and purpose of treatments also matter. Treatments in large, forested areas can include the retention of individual trees and groups of trees. Evenly and widely spacing trees might be reasonable in HIZ3, but this tree arrangement would not be appropriate for resilience-style fuel treatments.

Treatments in HIZ3 (30-100 feet away from the home) can promote forest resilience, but it is most important to focus on reducing wildfire risk to the home, creating safer conditions for fire fighters, and increasing the visibility of your home from the road for firefighters. Homeowners often enjoy the more open forest around their home because it lets in more light which encourages understory grasses and shrubs to grow and, in turn, can increase wildlife sightings near their home. HIZ3 often overlaps neighboring properties and requires residents to work together to address shared wildfire risk.

For all fuel treatments, it is important to address surface fuels. Forest management operations often increase surface fuel loads and can fail to achieve fire mitigation objectives if fuels created by the harvest activities (also known as slash) are not addressed (Agee and Skinner, 2005). Slash can include small trees, limbs, bark, and treetops. See **Approaches to Slash Management** for pros and cons of different slash management options.

Mitigating the impacts of tree removal on soil compaction and erosion is also important when treatments occur near streams and riparian ecosystems. CSFS recommends streamside management zones of at least 50 feet (CSFS, 2023). Treatments should be monitored for colonization of invasive, weedy plants that might require control through integrated weed management. It is always a good idea to take pictures of treatments before and after to help evaluate effectiveness and monitor changes over time.

Here we provide general recommendations for treatments in HIZ3 and stand-scale fuel treatments and ecological resilience by vegetation types. Guidance for defensible space is summarized from the CSFS publication The Home Ignition Zone. It is important to work with a forester that has experience creating defensible space so they can help you design an effective treatment specific to vegetation type, slope, and other conditions around your home. The Colorado State Forest Service's Golden Field Office provides a list of Forest Ag contractors on their website to help homeowners can find local, reliable private contractors for mitigation work they cannot complete themselves.

Overall Goals of Mitigation Work in HIZ3:

- Reduce surface fuels, reduce tree density, and increase the distance between surface and canopy fuels.
- Moderate fire behavior near structures and increase their chance of standing strong during a wildfire.
- Increase safety and access for wildland firefighters.
- Increase the visibility of structures from roadways to assist wildland firefighters with locating and accessing your home.
- Coordinate with partners when home ignition zone 3 overlaps neighboring properties to address shared wildfire risk. Linked defensible space creates safer conditions and better tactical opportunities for wildland firefighters. Defensible space that span ownership boundaries are better candidates for grant funding due to their strategic value.

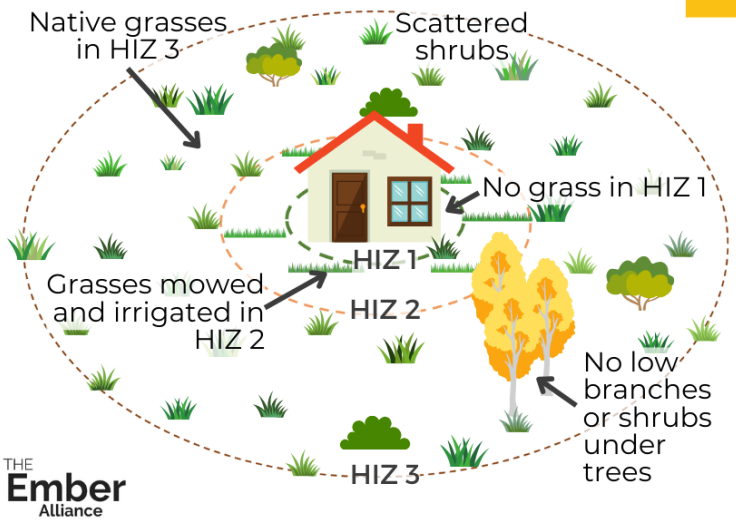
Grasslands

Species: Blue grama, little bluestem, prairie dropseed, buffalograss, sideoats grama, others

Typical elevation: 4,000-6,500 ft

Fire return interval: 2 to 20 years (frequent)

Fire severity: Low severity



Sources: CSFS Home Ignition Zone; Grassland Management in Boulder

Wildfires can spread rapidly across grasslands, and the management of grasslands is important for both fire resilience and ecological restoration.

Management in Home Ignition Zone 3

- Homeowners adjacent to grasslands should focus their efforts in HIZ 1 and 2.
- Mowing grass is not required in HIZ 3.
- Remove cheatgrass and smooth brome with herbicide, grazing, or prescribed burns, and seed with native species.
- Replace wooden fences with non-flammable materials to reduce the chance of fire spreading from grasses to fences to homes.
- Use goats, cows, or other livestock to manage grasses and/or woody plants.
- Where appropriate, conserve prairie dogs. Their activity creates bare ground that can slow the spread of fire.

Shrublands

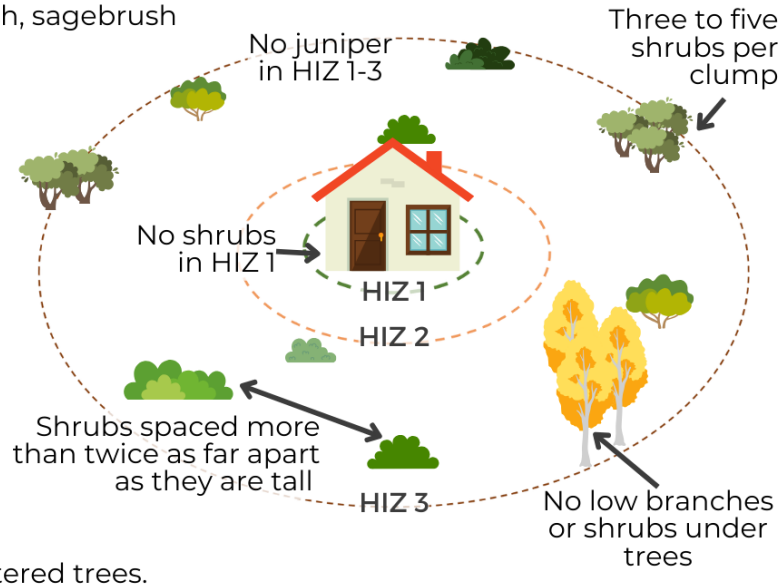
Species: Rocky mountain juniper, common juniper, Gambel oak, mountain mahogany, antelope bitterbrush, sagebrush

Typical elevation: 4,000-9,000 ft

Fire return interval: 2-30 years (frequent)

Fire severity: Low to moderate severity, depending on fuel continuity.

Shrubs that are close together and adjacent to homes are hazardous. In dry climates like Colorado, they can burn very hot and emit embers.



Management in Home Ignition Zone 3

- Remove shrubs under tree canopies.
- Remove limbs below 6-10 feet on scattered trees.
- Remove common junipers, which are highly flammable.
- Thin clumps of shrubs down to three to five shrubs/clump. Favor leaving large, old, Gambel oaks for biodiversity.
- Use mastication, mowing, herbicide, and prescribed fire for shrub removal, depending on the species and appropriate use of these management tools.
- Use goats, cows, or other livestock to manage grasses and/or woody plants.

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Source: CSFS Home Ignition Zone

Ponderosa pine mixed conifer

Species: Ponderosa pine, Douglas-fir, aspen, juniper, white fir, gamble oak

Typical elevation: 6,300-9,500 ft

Fire return interval: 7-50 years (frequent)

Fire severity: Low- to moderate-severity, with some smaller patches of stand-replacing fire where most or all trees die

Ponderosa pine mixed conifer forests are fire dependent. Historically, fire burned across the forest floor, controlling tree regeneration, removing lower limbs on mature trees, and creating large, open spaces between trees.

Human management activities (grazing, logging, fire suppression) have resulted in unnaturally dense forests. During extreme weather, high winds can easily spread fire between tree crowns, resulting in very large high-severity wildfires where most trees are killed. This is not always the case but is a trend that has occurred more frequently in this forest type in the last few decades.

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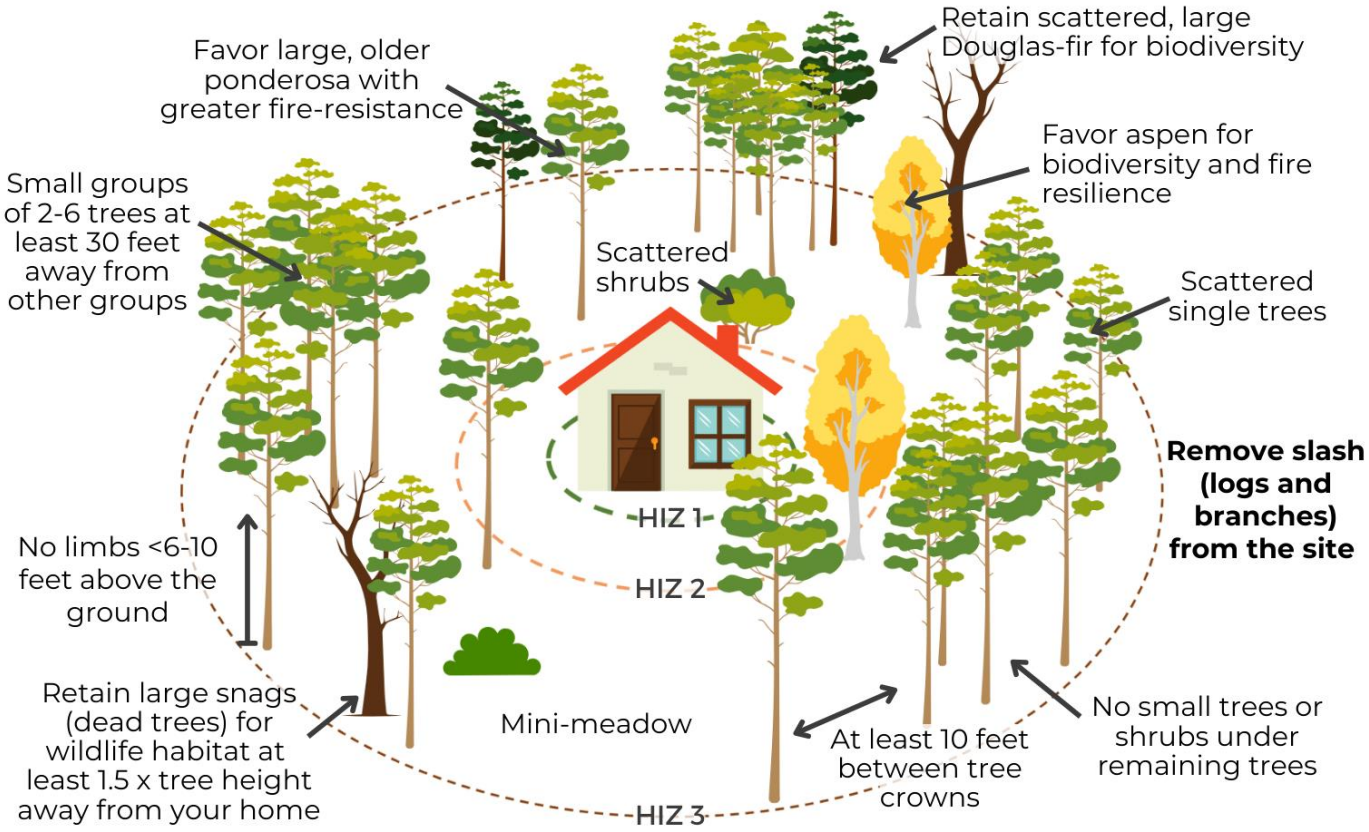
Management in Home Ignition Zone 3

To restore ecological conditions, increase fire resilience, and increase your home's ability to stand against wildfire, leave only 25-60 trees/acre in HIZ 3 (15-40 trees within 30 to 100 feet of your home) and create mini-meadows for grasses, wildflowers, and scattered shrubs.



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Sources: CSFS Home Ignition Zone; Battaglia et al. 2018. Forest Ecology & Management 422:147-160; Rocky Mountain Research Station GTR-310.

Lodgepole pine

Species: Lodgepole pine dominated; occasional Douglas-fir, ponderosa pine, aspen, white fir, Engelmann spruce, blue spruce, limber pine, gamble oak

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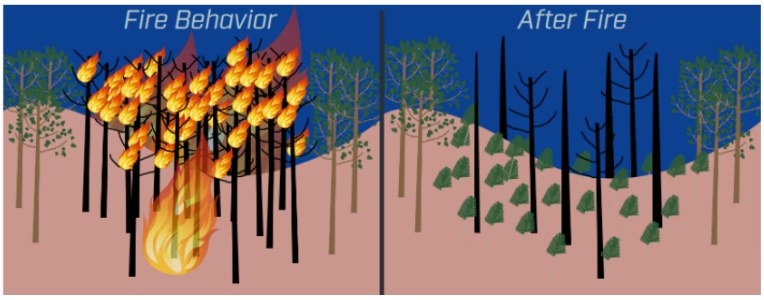
Typical elevation: 8,000-10,000 ft

Fire return interval: 75 to 300 years (infrequent)

Fire severity: Stand-replacing fire where most or all trees die

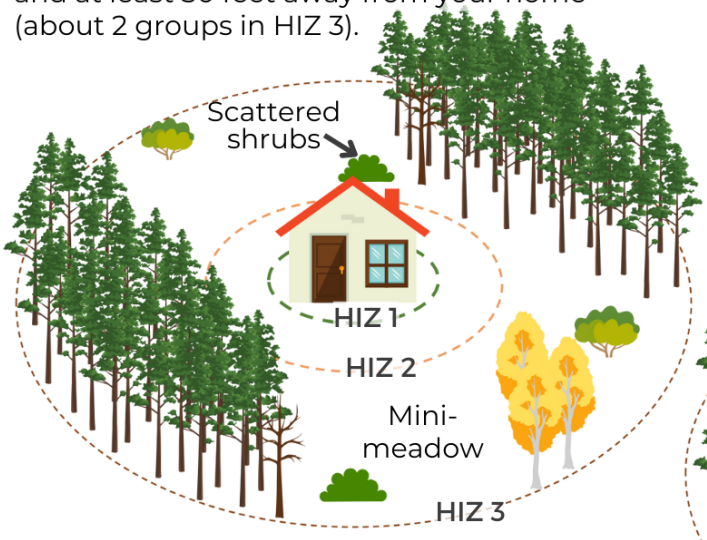


Lodgepole pine forests naturally grow densely, so fire spreads easily from tree crown to tree crown, resulting in patches where most trees are killed. Lodgepole pine also can have serotinous cones, which open and release seeds when heated by fire. These seeds then readily regenerate the new forest. More research is needed to understand forest recovery following the combination of drought, climate change, mountain pine beetle mortality, and recent wildfires.

Management in Home Ignition Zone 3

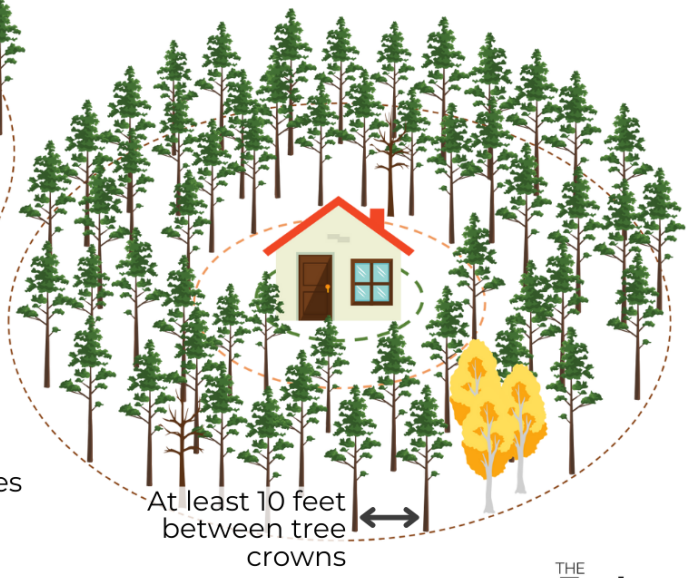
Lodgepole pine trees can blow over if too many neighboring trees are removed before they can adapt to the wind. There are two options for managing lodgepole pine in HIZ 3 to increase your home's chance of standing strong during a wildfire and to reduce windthrow:

Option 1: Leave groups of 30-50 trees at least 30-50 feet apart from other groups and at least 30 feet away from your home (about 2 groups in HIZ 3).



Option 2: Slowly thin the stand, no more than 30% of trees each time. Repeat to achieve at least 10-feet between tree crowns (no more than 80 trees/acre or 50 trees within HIZ 3, fewer for larger trees or on steep slopes).

This can take about 10 years to achieve, during which time, your home is still at risk.



For both options 1 and 2:

- No limbs <6-10 feet above the ground
- No small trees or shrubs under remaining trees
- Very few to no trees in HIZ 2 and none in HIZ 1
- Favor aspen for biodiversity and fire resilience
- Retain several large snags (dead trees) for wildlife habitat at least 1.5 x tree height away from your home
- **Remove slash (logs and branches)**

THE Ember Alliance

Sources: CSFS Home Ignition Zone; CSFS Lodgepole Management Guidelines.

Douglas-fir mixed conifer

Species: Douglas-fir, ponderosa pine, lodgepole, aspen, white fir, occasional spruce, limber pine, gamble oak

Typical elevation: 6,000-9,500 ft

Fire return interval: 20 to >100 years (semi-frequent)

Fire severity: Moderate-severity with patches of stand-replacing fire where most or all trees die

Douglas-fir mixed conifer forests contain a diversity of tree species, many of which are not as fire tolerant as ponderosa pine. These forests also tend to be cooler and wetter, and as a result do not burn as frequently. When fire burns in these areas, patches of stand-replacing fire can be common. These forests are naturally denser than lower elevation forests, but human management activities (grazing, logging, fire suppression) have resulted in unnaturally dense forests that can fuel larger, more extreme wildfires.

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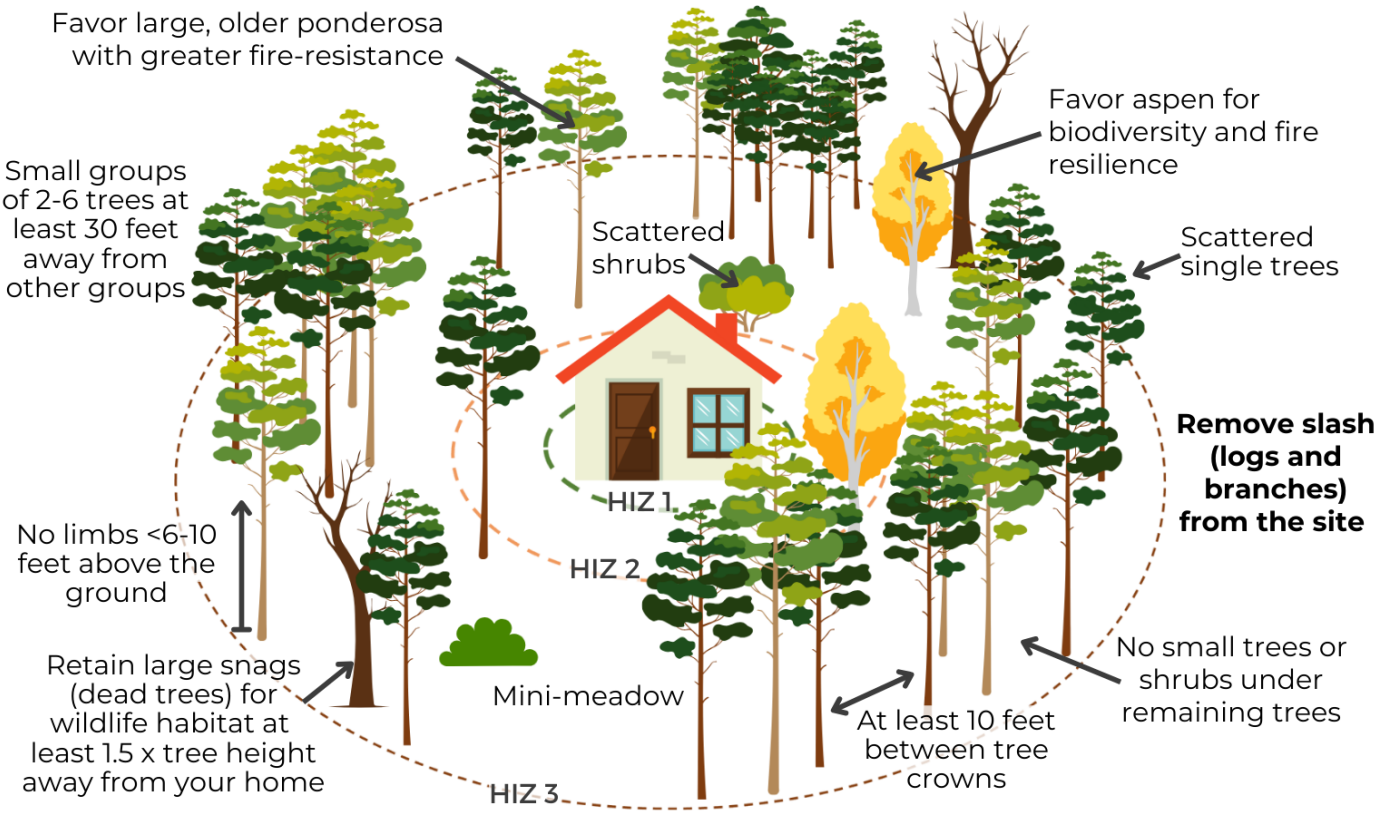
Management in Home Ignition Zone 3

To restore ecological conditions, increase fire resilience, and increase your home's ability to stand against wildfire, leave only 25-60 trees/acre in HIZ 3 (15-40 trees within 30 to 100 feet of your home) and create mini-meadows for grasses, wildflowers, and scattered shrubs.



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Sources: CSFS Home Ignition Zone; Battaglia et al. 2018. Forest Ecology & Management 422:147-160; Rocky Mountain Research Station GTR-310.

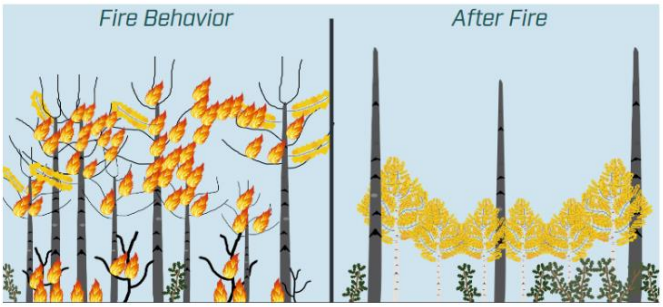
Aspen forests

Species: Aspen, occasional ponderosa pine, lodgepole pine, blue spruce, or other conifers

Typical elevation: Highly variable

Fire return interval: Highly variable

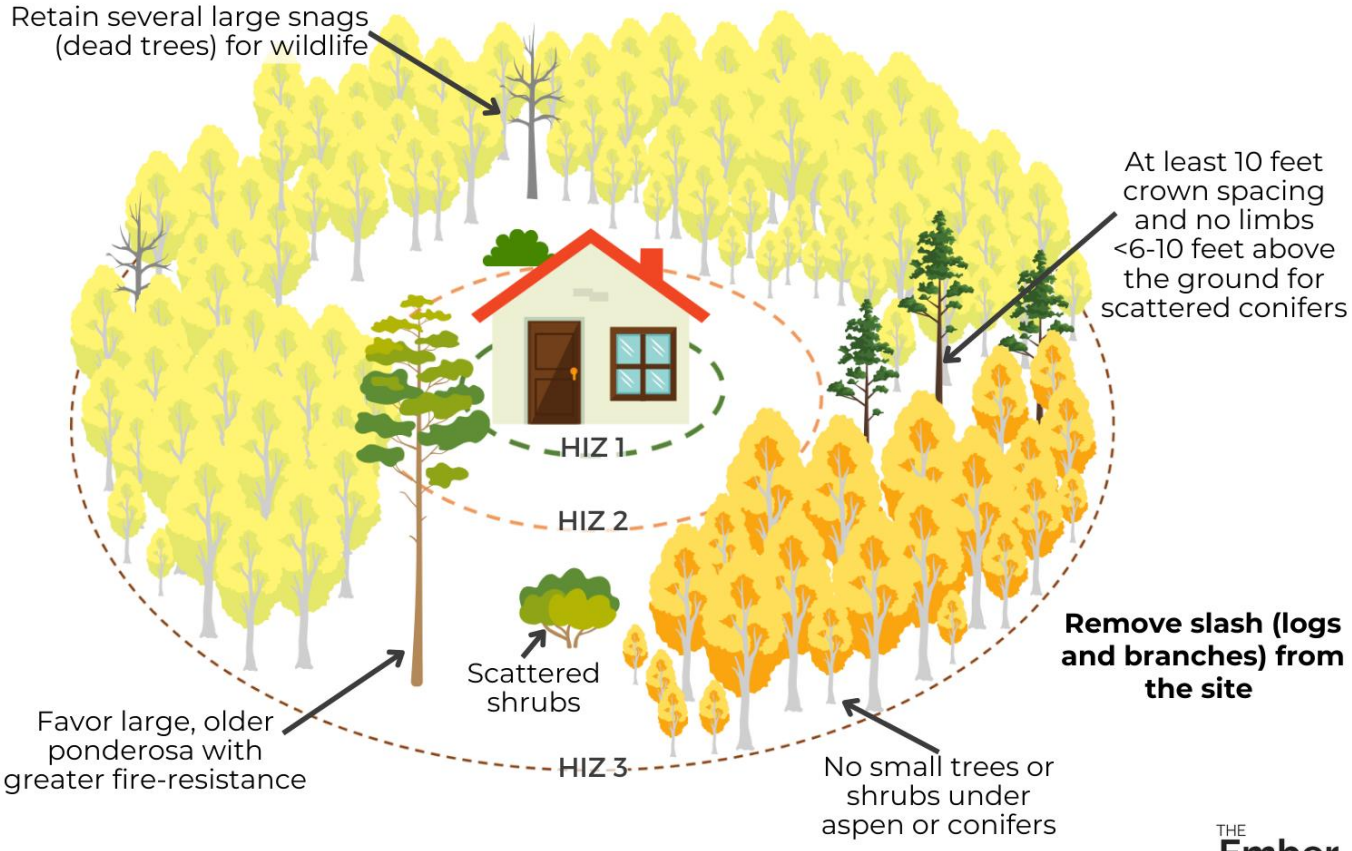
Fire severity: Slow and creeping or, during drought, stand-replacing fire where most or all trees die



Aspen trees are fairly fire resistant and fire resilient. These deciduous trees have high fuel moisture, no low branches, and smooth bark, making them less likely to ignite than conifer trees. Aspens are readily killed by fire, but they recover quickly via sprouting. Fires can create conditions where aspen stands expand because of the species' ability to sprout rather than needing to germinate from seed, and because this sun-loving species experiences reduced competition from conifer trees killed by fire.

Management in Home Ignition Zone 3

Aspen trees do not need to be removed from HIZ 3 due to their fire-resistant and fire-resilient nature. Instead, focus on removing limbs from conifer trees, shrubs growing under aspen and conifers, and slash (logs, branches, and other woody material).



Source: CSFS Home Ignition Zone.

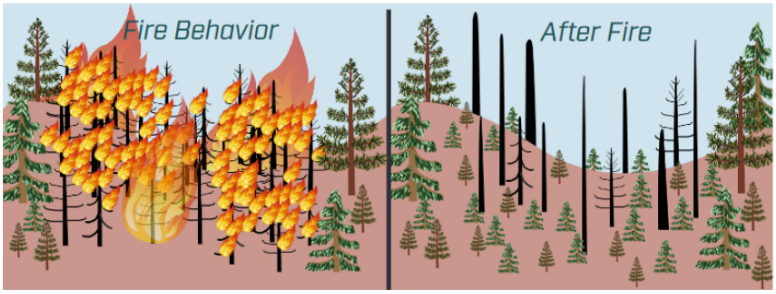
Subalpine forests

Species: Subalpine fir and Engelmann spruce; occasional blue spruce, aspen, and lodgepole, limber, and bristlecone pine

Typical elevation: 9,000-11,000 ft

Fire return interval: 100 to 600 years (infrequent)

Fire severity: Stand-replacing fire where most or all trees die



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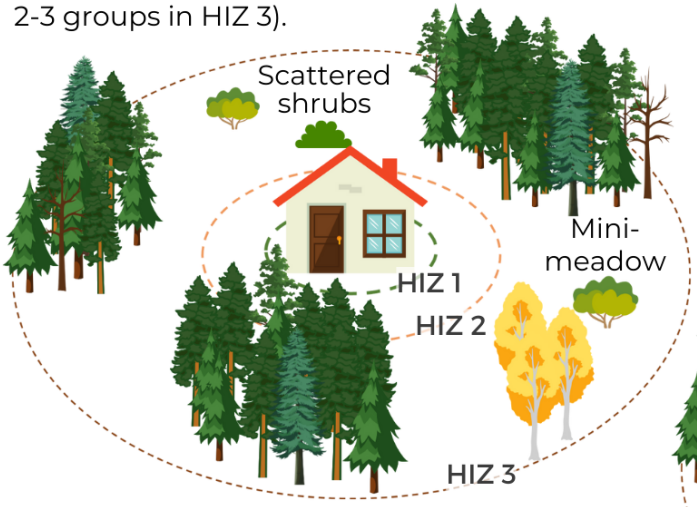
Subalpine forests are the wettest and densest forests in Colorado. When extended dry conditions occur in these forests, dead trees and other fuels that have accumulated over long periods of time dry out, creating conditions ripe for fire. Fires are infrequent, stand-replacing, and often synchronous across the region tied to widespread drought. More research is needed to understand forest recovery following the combination of drought, climate change, spruce beetle mortality, and recent wildfires.

Management in Home Ignition Zone 3

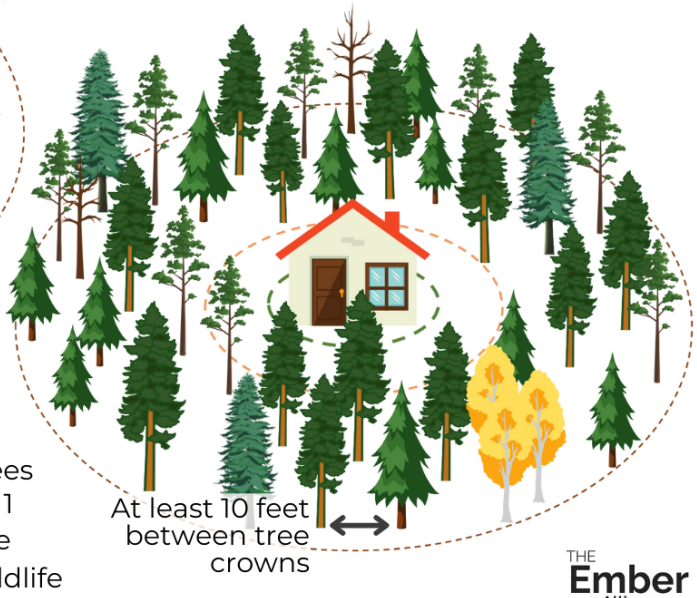
Spruce and fir trees can blow over if too many neighboring trees are removed before they can adapt to the wind. There are two options for managing spruce-fir in HIZ 3 to increase your home's chance of standing strong during a wildfire and to reduce windthrow:

Option 1: Leave groups of 15-30 trees at least 30-50 feet apart from other groups and at least 30 feet away from your home (about 2-3 groups in HIZ 3).



Option 2: Slowly thin the stand, no more than 30% of trees each time. Repeat to achieve at least 10-feet between tree crowns (no more than 80 trees/acre or 50 trees within HIZ 3, fewer for larger trees or on steep slopes).

This can take about 10 years to achieve, during which time, your home is still at risk.



For both options 1 and 2:

- No limbs <6-10 feet above the ground
- No small trees or shrubs under remaining trees
- Very few to no trees in HIZ 2 and none in HIZ 1
- Favor aspen for biodiversity and fire resilience
- Retain several large snags (dead trees) for wildlife habitat at least 1.5 x tree height away from your home
- **Remove slash (logs and branches)**

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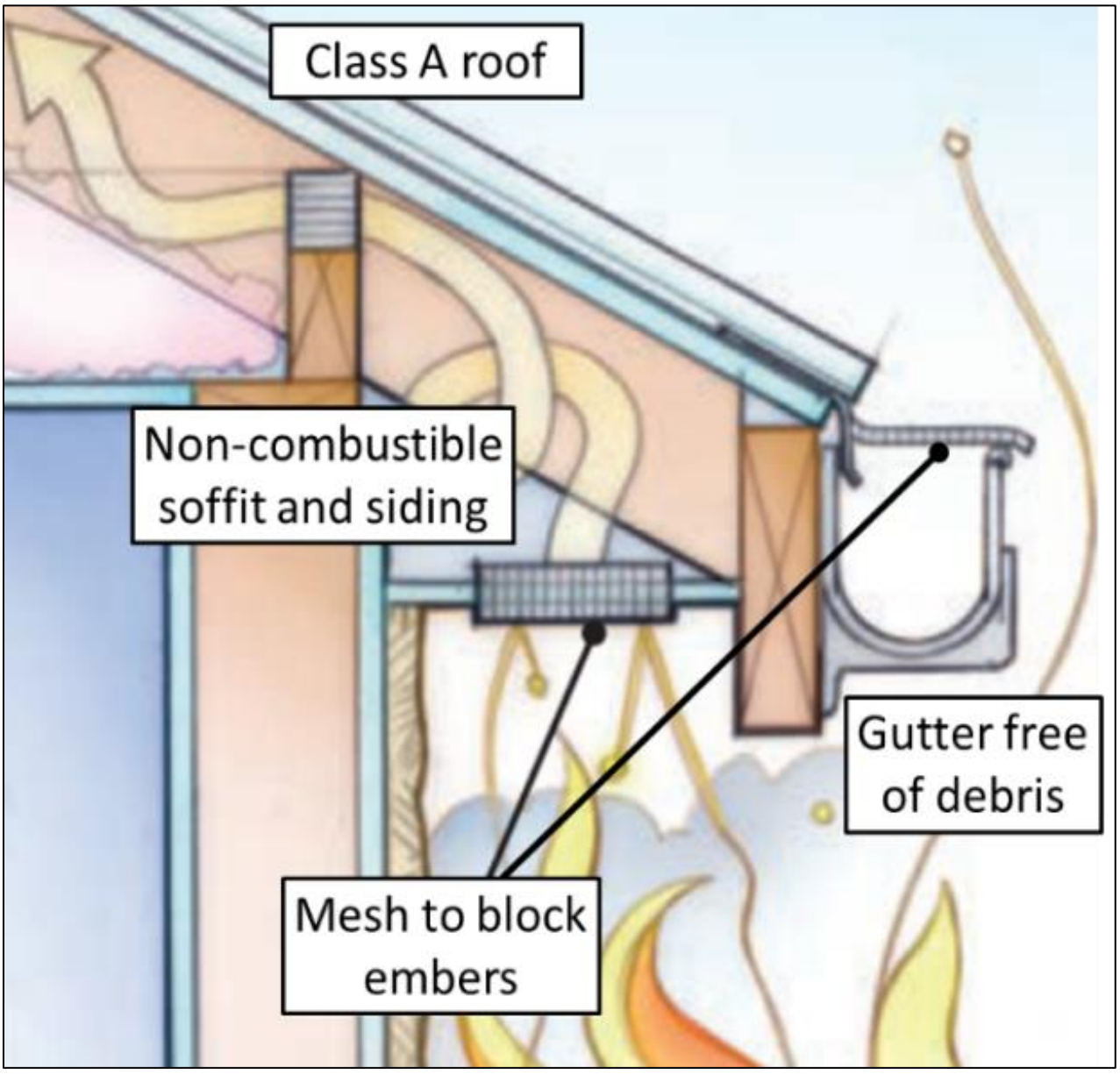
Sources: CSFS Home Ignition Zone; CSFS Spruce Beetle Quick Guide FM 2014-1.

Home Hardening

Buildings cannot be made fireproof, but the chance of your home standing strong during wildfires increases when you reduce structural ignitability of your home through home hardening and the creation and maintenance of defensible space. Research from the Insurance Institute for Business & Home Safety (IIBHS) clearly illustrates the benefits of home hardening for reducing the chance of home ignition from embers (watch a video of the research here). During the Marshall Fire, embers were responsible for 70% of recorded structure damage – the other 30% of structures were damaged from direct flame contact (Holstrom et al., 2023). Home hardening is the only defense against embers.

All homes in the district (100%) are at risk of long-range embers, and many (71%) are at risk of radiant heat from burning vegetation under severe fire weather conditions (**Figure 2.f.7**). Homes and buildings in densely populated portions of the district, such as Bergen Park, Stagecoach/Hiwan Hills, Central Evergreen, Little Cub Creek, Kittridge, and Buffalo Creek plan units (**Figure 1.a.3**), have overlapping HIZs and are at greater risk of structure-to-structure ignition from radiant heat and embers. Reducing the ability of embers to penetrate and ignite your home is recommended for everyone in the district.



Residents can increase their homes' chance of survival by making it harder for embers to enter and ignite their homes (image from Healthy Building Science).

Roofs, siding, decks, windows, vents, and gutters are particularly vulnerable to embers from wildfire, and actions that prevent embers from penetrating your home can offer additional benefits such as reduced maintenance costs, greater durability, and increased energy efficiency:

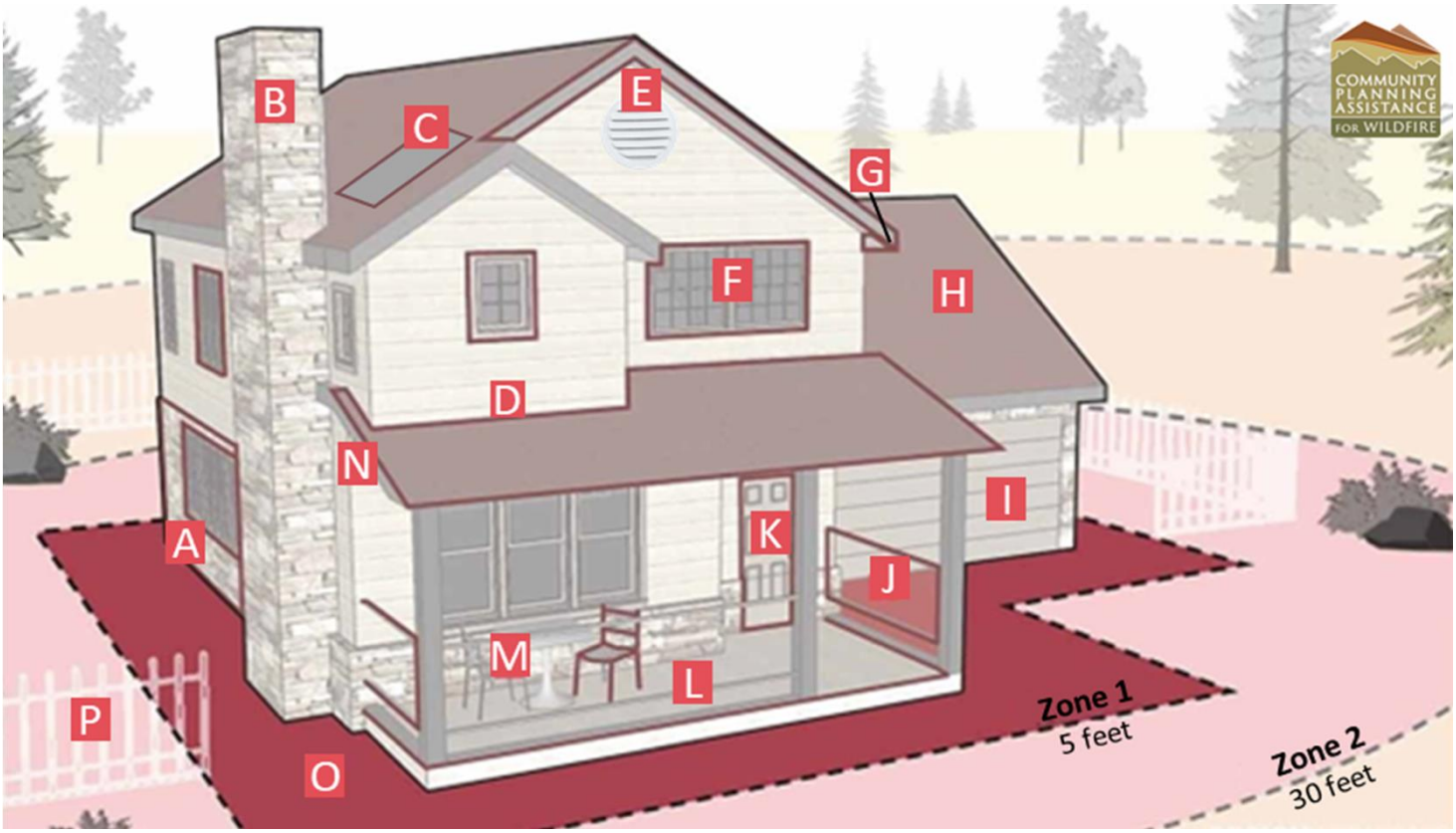
- **Roofs** should be made of noncombustible materials[1] such as composite, metal, or tile, which tend to be more durable against wind, snow, and hail as well as wildfire.
- **Siding and decking** should be made of ignition-resistant or noncombustible materials, which is particularly effective when homes also have a 5-foot noncombustible border of dirt, stone, or gravel around them. Non-wood siding and decking are often more durable and require less routine maintenance than traditional wood.
- **Multi-pane windows** have greater resistance to radiant heat and provide better insulation and energy efficiency for your home. Windows often fail before a home ignites, providing a direct path for flames and airborne embers to enter a home (CSFS, 2021).
- **Enclosed eaves and vent screens** reduce the penetration of wind-born embers into structures, and can deter pests and critters from nesting in your home's vents and eves (Hakes et al., 2017; Syphard and Keeley, 2019).
- **Fences** should be made of noncombustible materials and kept at least 8 feet away from the home (at least 20 feet away for double combustible fences). Fences can serve as pathways for wildfire to travel between vegetation and structures and from structure to structure (Maranghides et al., 2022). Wooden fences attached to homes served as one of the leading causes of home loss during the Marshall Fire (Holstrom et al., 2023). Ignition-resistant and noncombustible fences are more durable and require less maintenance than wood fences.

There are many low-cost actions you can start with to harden your home (**Figure *3.a.4***). Keep home-hardening practices in mind and use ignition-resistant materials if you replace a hail-damaged roof or remodel your home.

In January 2020, Jefferson County approved new building construction regulations for homes above 6,400 feet in elevation, and the Jefferson County Department of Development and Transportation provides a list of approved building materials to help address the high potential for home loss in the WUI. In December 1995, Jefferson County updated their zoning resolution and land development regulations to create new standards for properties in the Wildfire Hazard Overlay Zone District, which is that area of the County generally above 6,400 feet in elevation. The Zoning Resolution required that building permits for new homes and additions over 400 square feet create defensible space. The Land Development Regulation required a wildfire hazard mitigation plan for new subdivisions. In January and October 2022, Jefferson County revised their zoning resolution to modify the name of the Wildfire Hazard Overlay District to the Wildland Urban Interface (WUI) Overlay District, require all new structures, additions to structures and driveways create defensible space at the time of building permit, and modify landscaping standards. In April 2024, Clear Creek County adopted wildfire hazard mitigation codes to establish minimum standards for design and construction of buildings.

Additionally, Senate Bill 23-166 established a Wildfire Resiliency Code Board (WRCB) in the Colorado Division of Fire Prevention and Control (DFPC) to help enhance community safety and resiliency from wildfires through the adoption of codes and standards. At the time of the writing of this CWPP, the WRCB was accepting written comment and feedback to be incorporated into the 2025 Wildfire Resiliency Code and State Map. These Codes and State Map will continue to be developed, along with updated Jefferson County regulations, throughout 2025.

[1] See the **Glossary** on page 351 for the definition of terms used the describe the performance of building materials when exposed to fire (e.g., wildfire-resistant, ignition-resistant, and noncombustible).



Low-cost actions:

B. Cover chimneys and stovepipe outlets with 3/8 to 1/2 inch corrosion-resistant metal mesh.

C. Minimize debris accumulation under and next to solar panels.

E. Cover vent openings with 1/16 to 1/8 inch corrosion-resistant metal mesh. Install dryer vents with metal flappers and keep closed unless in use.

G. Clear debris from roof and gutters regularly.

I. Install metal flashing around and under garage doors that goes up at least 6 inches inside and outside the door.

J. Use noncombustible lattice, trellis, or other decorative features.

K. Install weather stripping around and under doors.

L. Remove combustible materials from underneath, on top of, or within 5 feet of deck.

M. Use noncombustible patio future.

N. Cover all eaves with screened vents (as appropriate).

O. Establish and maintain a 5-foot noncombustible buffer around the home.

Actions to plan and save for:

A. Use noncombustible or ignition-resistant siding and trim (e.g., stucco, fiber cement, fire-retardant treated wood) at least 2 feet up around the base of your home.

C. Use multipaned glass for skylights, not materials that can melt (e.g., plexiglass), and use metal flashing.

D. Install a 6-inch vertical noncombustible surface on all gables above roofs.

F. Install multi-pane windows with at least one tempered-glass pane and metal mesh screens. Use noncombustible materials for window frames.

G. Install noncombustible gutters, gutter covers, and downspouts.

H. Install ignition-resistant or noncombustible roofs.

I. Install 1-hour fire rated garage doors.

K. Install 1-hour fire rated front and back doors.

L. Use ignition-resistant or noncombustible decking. Enclose crawl spaces.

N. Use noncombustible eaves.

P. Replace wooden fences with noncombustible materials and keep at least 8 feet away from the home (at least 20 feet away for double combustible fences—a pair of fences constructed from materials that can burn placed side-by-side along a property line).

Figure 3.a.4. *A home can never be made fireproof, but home hardening practices decrease risk. Infographic by Community Planning Assistance for Wildfire with modifications from The Ember Alliance to include information from CALFIRE 2019 and Maranghides et al. 2022.*

Annual Safety Measures and Home Maintenance

Reviewing safety protocols, creating defensible space, and hardening your home are not one-time actions, but part of *annual* home maintenance when living in the WUI. During a wildland fire, homes that have clear defensible space are identified as sites for wildland firefighters to engage in structure protection, and homes that are not safely defensible will not usually receive firefighter resources. See Home Ignition Zone checklists from the CSFS and the Live Wildfire Ready checklist below for annual safety and maintenance activities.

Mitigation Barriers and Opportunities

Homeowners and residents in the WUI share concerns about mitigating risk and maintaining safer conditions in their home ignition zone. Some top barriers and concerns in the district were identified during our community kickoff meeting in September 2024 and include lack of information or knowledge about what to do, cost, ability to complete work, difficulty working with neighbors, and collectively taking individual and community risk seriously.

Concern: I do not know where to start with creating defensible space.

- ✓ Review **Table 3.a.1** and the CSFS publication *Protecting your home from wildfire: Creating wildfire-defensible zones* for mitigation recommendations.
- ✓ Visit Rotary Wildfire Ready and the CSFS Live Wildfire Ready for useful information and tips about defensible space creation.
- ✓ Talk to neighbors who have taken steps to mitigate fire risk on their property through EFR's Community Wildfire Ambassador Program.
- ✓ Reach out to the CSFS or Jefferson Conservation District (JCD) to learn about defensible space and home hardening tactics from their qualified specialists.
- ✓ Reference the CSFS Forest Ag contractor list available on the Golden Field Office's website for local, reliable private contractors for mitigation work.

Concern: I do not have the resources to invest in defensible space.

Creating adequate defensible space can take years and a significant financial investment. Fortunately, there are effective, low-cost measures that residents can start with:

- ✓ Annually remove leaves, needles, and other vegetation from roofs, gutters, decks, and around the base of homes.
- ✓ Use hand tools like a pole saw to remove tree branches that hang less than 10 feet above the ground.
- ✓ Remove combustible materials (dry vegetation, wooden picnic tables, juniper shrubs, etc.) from underneath, on top of, or within 5 feet of decks.
- ✓ Remove vegetation and combustible materials within 5 feet of windows and doors.
- ✓ Replace wood mulch within 5 feet of all structures with dirt, stone, or gravel.
- ✓ Remove downed logs and branches within 30 feet of all structures.
- ✓ Participate in community slash pickup dates organized by Jefferson County.
- ✓ Apply for cost-sharing grants with your neighbors to subsidize the creation of defensible space (see **Section 3.e** for potential funding sources).
- ✓ Research tax credits that will offset the costs or the work you want to do from the Colorado Department of Revenue.

Concern: I do not have the resources to invest in home hardening.

Retrofitting an existing home to be ignition-resistant can be expensive, particularly actions like replacing flammable roofs and siding. Some of these costs can be divided and prioritized into smaller projects. If you are building a new home, the cost of using ignition-resistant materials is roughly the same as using traditional building materials (Quarles and Pohl, 2018). Ignition-resistant features often come with additional benefits, such as greater durability and reduced maintenance. There are effective, low-cost measures that residents can start with to harden their homes, such as the following from CAL FIRE's 2020 Low Cost Retrofit List:

- ✓ Install noncombustible metal gutter covers.
- ✓ Cover vent openings with 1/16th- to 1/8th-inch corrosion-resistant metal mesh.
- ✓ Cover chimney and stovepipe outlets with 3/8th- to ½-inch corrosion-resistant metal mesh to prevent embers from escaping and igniting a fire.

- ✓ Caulk and plug gaps greater than 1/16th inch in siding or around exposed rafters.
- ✓ Install weather stripping around and under garage doors to reduce gaps to less than 1/16th-inch.
- ✓ Remove combustible materials from underneath, on top of, and within 5 feet of a deck.
- ✓ Replace wood mulch within 5 feet of all structures with noncombustible products like dirt, stone, or gravel.
- ✓ Store all combustible and flammable liquids away from potential ignition sources.
- ✓ Keep a fire extinguisher and tools such as a shovel, rake, bucket, and hose available in your garage for fire emergencies.

In January 2020, Jefferson County approved new building construction regulations for homes above 6,400 feet in elevation, and the Jefferson County Department of Development and Transportation provides a list of approved building materials to help address the high potential for home loss in the WUI. In December 1995, Jefferson County updated their zoning resolution and land development regulations to create new standards for properties in the Wildfire Hazard Overlay Zone District, which is that area of the County generally above 6,400 feet in elevation. The Zoning Resolution required that building permits for new homes and additions over 400 square feet create defensible space. The Land Development Regulation required a wildfire hazard mitigation plan for new subdivisions. In January and October 2022, Jefferson County revised their zoning resolution to modify the name of the Wildfire Hazard Overlay District to the Wildland Urban Interface (WUI) Overlay District, require all new structures, additions to structures and driveways create defensible space at the time of building permit, and modify landscaping standards. In April 2024, Clear Creek County adopted wildfire hazard mitigation codes to establish minimum standards for design and construction of buildings. New construction and replacement construction that require a building permit must comply with building standards in the respective county. Building, development, and WUI codes are updated regularly, please check with your local county department for the most up to date information.

Concern: I am afraid that removing trees will destroy the forest and reduce the aesthetic and monetary value of my property.

The reality is that nothing will decrease the value of your home as much as a high-severity wildfire burning all the vegetation in the community, even if your home survives the fire. Some ideas to help reconcile different values you hold for your property are to:

- ✓ Drive around the community and look for homes that have followed the guidelines in **Figure 3.a.1** and **Table 3.a.1**. Some properties in the district have exemplary defensible space and beautiful landscaping at the same time.
- ✓ Read about low-flammability plants from Colorado State University Cooperative Extension and Firescaping from Fire Safe Marin for suggestions on beautiful, fire-resistant landscaping. As an added benefit, fire-resistant landscaping is often more drought tolerant.
- ✓ Learn about the ecology of frequent-fire forests along the Colorado Front Range by reading *Back to the future: Building resilience in Colorado Front Range forests using research findings and a new guide for restoration of ponderosa and dry-mixed conifer landscapes* (Miller, 2018). Resilient ecosystems can be aesthetically pleasing, benefit wildlife and light-loving wildflowers and grasses, and protect your home from high-severity wildfires.

Concern: HOA rules hinder my ability to establish defensible space around my home.

Potential solutions:

- ✓ Contact HOA board members to ask questions about regulations. You might perceive barriers to mitigation that do not exist or are easily addressed.
- ✓ Advocate for HOA regulations that align with local, county, and state recommendations and requirements.

- ✓ Advocate for HOA regulations that align with home hardening practices and low-flammability plants. Firewise plants are less flammable and drought tolerant so they require less watering during the summer.
- ✓ Serve on HOA working teams and speak with HOA leadership to support community-wide action around wildfire mitigation.
- ✓ Ask EFR for assistance communicating the need for homeowner mitigation in the neighborhood.

Concern: My neighbors have not mitigated risk on their property.

Some residents in the district are rightfully concerned about high hazards on their neighbors' properties and surrounding open land. Your home ignition zone might overlap with your neighbor's property. Given the high fire risk in the area, it is important that residents across the district create defensible space and harden their homes. Ways to inspire neighborhood-level action include:

- ✓ Work with your Community Wildfire Ambassador, your HOA, and other community groups to help educate your community about the benefits of defensible space and home hardening.
- ✓ Organize walking tours to visit the property of residents with exemplary defensible space. Witnessing the type of work that can be done, and seeing that a mitigated property can still be aesthetically pleasing, can encourage others to follow suit.
- ✓ Invite your neighbors over for a friendly conversation about the risk assessment in this CWPP. Review resources about defensible space together, discuss each other's concerns and values, and develop joint solutions to address shared risk.

Fire-resistant landscaping in HIZ1 can be aesthetically pleasing and more drought-tolerant, requiring less watering during the summer. Limbed and thinned trees in HIZ2 (as seen in the background of this photo) can create beautiful, open conditions that allow understory vegetation to flourish under higher light conditions and provide habitat for wildlife. Photo credit: Washington State University Master Gardener Program.

Evacuation Preparedness

Evacuation can weigh heavily on the minds of residents in the district. The death of 29 people in Los Angeles, California during the 2025 Palisades and Eaton Fires underscores the importance of evacuation preparedness and fuel mitigation along evacuation routes. Of those who tragically perished in these fires, some did not receive evacuation alerts, others could not leave their home due to limitations from animals or family members, and many were simply overwhelmed by the 'perfect storm' of extreme fire weather conditions. Roads lined closely with dense, tall vegetation can create conditions that are dangerous to evacuees. Roads that may be unpassable during a wildfire event are referred to as potentially non-survivable in this CWPP. JCSO and Clear Creek County Office of Emergency Management (OEM) may call evacuations early to get residents out of danger before roads become potentially non-survivable or to avoid future congestion. If any resident has concerns, such as knowing it may take additional time to evacuate, no one needs to wait for an evacuation order to act. Jefferson County provides additional guidance in the 2024 Comprehensive Emergency Management Plan Evacuation Annex. **Evacuation preparedness is the responsibility of each resident in the district. The best way to get out quickly and safely during an evacuation is to be prepared.**

Visit the Rotary Wildfire Ready and CSFS Live Wildfire Ready to learn about go-bags and evacuation planning—simple and crucial actions that can save lives. Prepare a go-bag and have a family emergency plan **before** the threat of wildfire is in your area. Some residents have family members or neighbors with physical limitations who might struggle to evacuate in a timely manner. Develop specific emergency plans that address these unique needs and vulnerabilities. Parents should work with their neighbors to develop a plan for how to evacuate children.

Residents with livestock trailers or large camper vehicles should plan to leave during voluntary evacuation notices to allow time for their preparations and create more space on the roads for other residents during a mandatory evacuation. It is important to have a plan for where to take livestock to reduce some of the chaos and uncertainty created by wildfire evacuations. FEMA provides tips for protecting livestock during a disaster. In Jefferson County, Horse Evacuation Assistance Team (HEAT) provides large animal evacuation assistance response for wildland fires and natural disasters.

Signing up for local emergency notifications can also help you leave quickly. Residents should register their cell phones and email addresses through Lookout Alert, the official emergency notification system for the district[2]. See the JCSO and the Clear Creek County OEM websites for more information. Generally, JCSO will issue evacuation orders by plan unit, or by groups of plan units (**Figure 3.b.1**) .

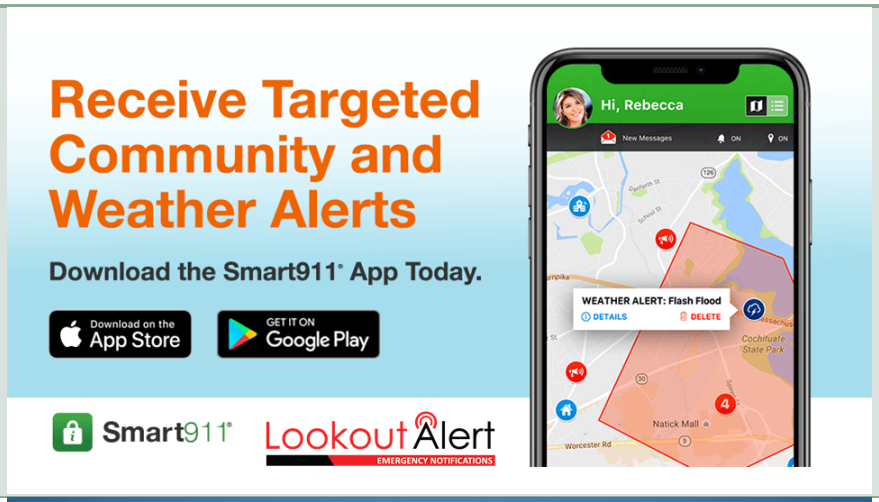
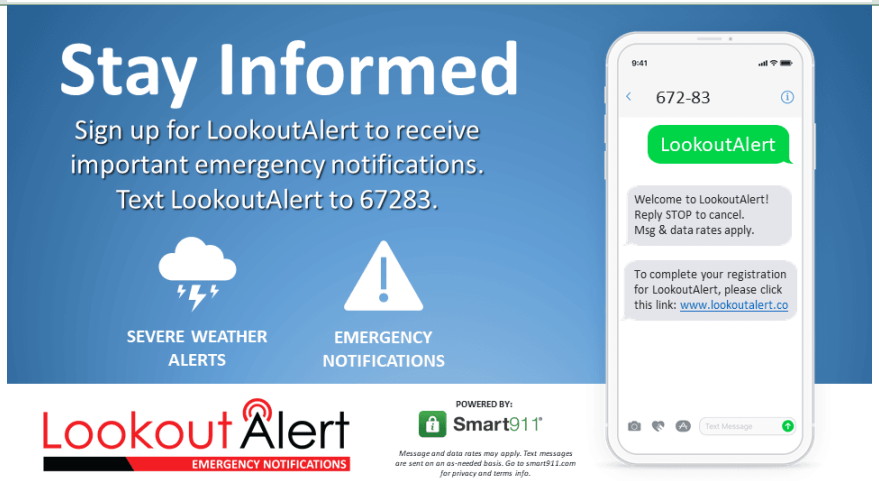
Understand the types of emergency communications you might receive during an incident. The following definitions are provided by JCSO:

> *Advisory messages* provide information but do not require any action on your part. *Instruction messages* provide information AND require you to take some action to be safe. There are three types:
>
> - **Shelter in place:** There is a hazard in your area and you should remain or go indoors, not go outdoors, and not evacuate the area. This may be the safest strategy for hazardous materials, law enforcement, or other incidents wherein an evacuation could increase the danger to you.
> - **Pre-evacuation:** There is a hazard in your area that may require you to evacuate in the near future. Everyone should be prepared to leave at a moment's notice. If you feel you are in danger and want to leave, do so. If you need additional time to evacuate, you should consider leaving now. If you need to arrange for transportation assistance, you should do so immediately. If you have livestock or other large animals, you should consider removing them from the hazard area now.
> - **Evacuation:** There is a hazard in your area and you have been ordered to evacuate immediately. If you need assistance evacuating yourself or need help evacuating animals, call 911. You will be provided the safest escape routes known, so make sure you follow the instructions as other routes may be closed or unpassable. You will also be told where an evacuation point has been established to provide information and safe place if you have nowhere else to go. **Do not delay – evacuation means you need to leave immediately!**

[2] Lookout Alert is the official emergency notification system for the district as of the writing of this CWPP in 2025.

Sign up for LookoutAlert

There are 3 ways to sign up for LookoutAlert. Choose the option that best suits your family and take action before an emergency occurs.

Option #1: Create a profile through the [website opt-in page]	
Option #2: Download the Smart911 app & opt-in	
Option #3: Send a text message to opt-in	

Follow evacuation etiquette to increase the chance of everyone exiting the district in a safe and timely manner during a wildfire incident:

- Register for emergency notifications through Lookout Alert for timely information about evacuations.
- Leave as quickly as possible after receiving an evacuation notice.
- Have a go-bag packed and ready during the wildfire season, especially on days with red flag warnings.
- Leave with as few vehicles as possible to reduce congestion and evacuation times across the community.
- Drive safely and with headlights on. Maintain a safe and steady pace. Do not stop to take pictures.
- Yield to emergency vehicles.
- Follow directions of law enforcement officers and emergency responders.
- Buffalo Creek West and Buffalo Creek East plan units have significant congestion around school start and end times that should be considered in the event of an evacuation.

Residents in the district face many evacuation challenges. Photo credit: Keenan Prouty, EFR.

Accessibility and Navigability for Emergency Personnel

Address signs

Installing reflective address numbers can save lives by making it easier for firefighters to navigate to your home at night and under smokey conditions. Reflective signs are available from EFR, making is an easy and inexpensive action you can accomplish to protect firefighters and your family. Mount reflective address signs on noncombustible posts, not on stumps, trees, wooden posts, or chains across driveways. Chains across driveways might be removed during wildfire suppression to permit access to your property. Make sure the numbers are clearly visible from both directions on the roadway.

Many driveways within the district do not meet current access requirements and pose safety issues that are difficult to mitigate. Long, narrow, steep driveways lacking turnarounds, and dense trees on the sides of the road can create challenges for emergency response vehicles during wildfires. Photo credit: The Ember Alliance.

Driveways

It is important to ensure emergency responders can locate and access your home. Narrow driveways without turnarounds, tree limbs hanging over the road, and lots of dead and down trees by the road may make firefighters choose to not defend your home during a wildfire event (Brown, 1994).

Some roads in the district have accessibility and navigability issues, such as narrow widths, inadequate vertical clearance for engines, and heavy fuel loading on the sides of the road. These unsafe road and driveway conditions could turn firefighters away from attempting to defend homes. According to the National Fire Protection Association (NFPA), driveways and roads should have a minimum of 20 feet of horizontal clearance and 13.5 feet of vertical clearance to allow engines to safely access the roads (O'Connor, 2021). Residents should remove trees and low-hanging limbs along driveways to facilitate firefighter access, as well as removing all dead trees that could fall across the driveway and block access.

Where possible, residents should improve roadway access, and where this is not feasible, it is vital that homeowners take measures to harden their home and create defensible space. Some actions to increase access to your home are simple, such as installing reflective address numbers, and others take time and investment, such as widening driveways to accommodate fire engines.

EFR utilizes tools to permit emergency access to gates and buildings. Ensure that yours is set up with EFR so that emergency personnel can use them. Contact EFR to learn more. If you have other gate codes, share them so they can non-destructively access your property in an emergency.

If you or your neighborhood has a private bridge, post the bridge weight limits. Not all firefighting equipment will cross unmarked bridges, so knowing and posting weight limits may help firefighters access and defend your home.

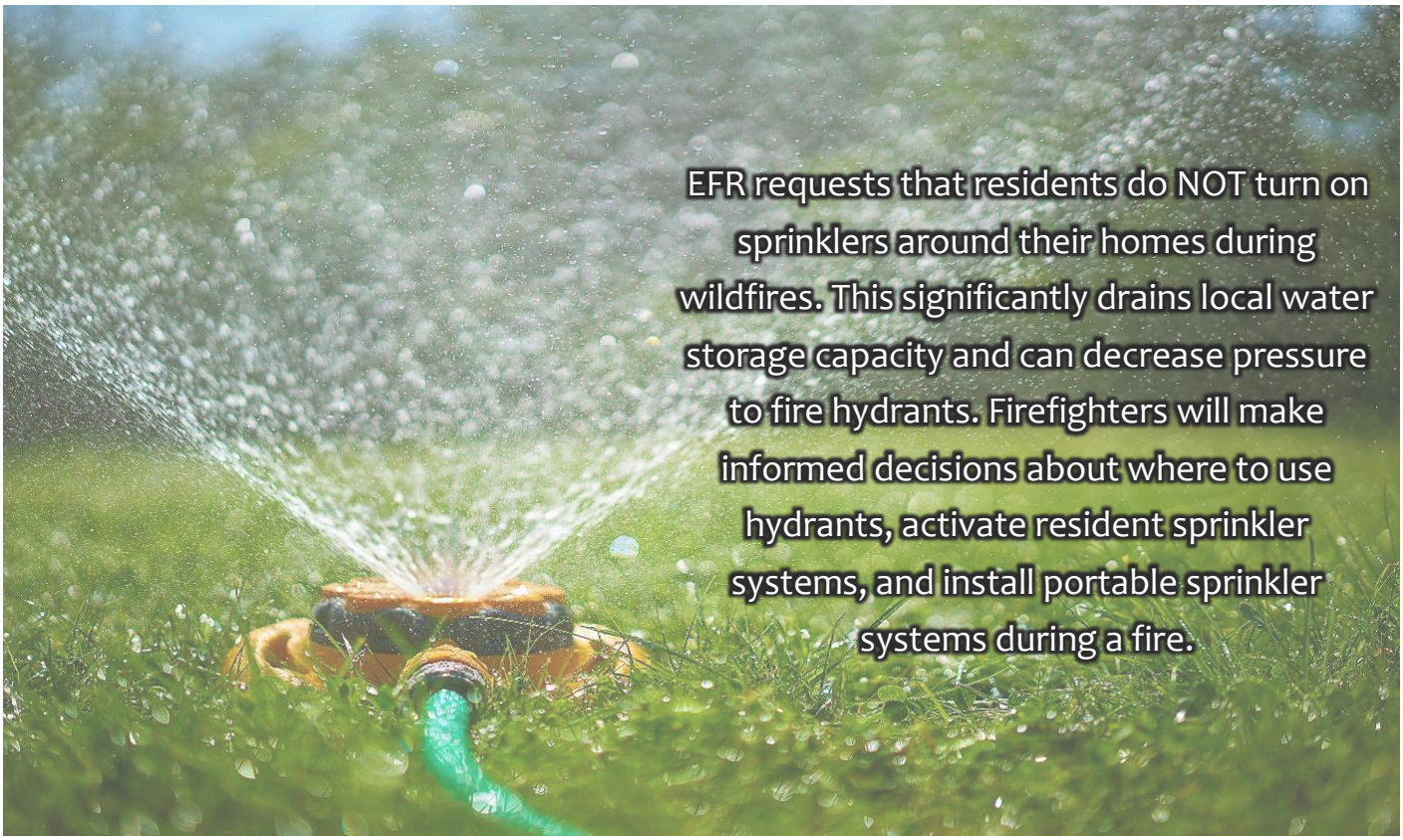
Private Water Resources

Water resources to fight fires in the foothills can be scarce, especially during the fire season in late summer and fall. Firefighters are skilled at determining the most beneficial ways to use water to protect structures from an approaching fire. Providing clear access to suitable water resources around your home or neighborhood can help them defend your home.

Do not turn sprinklers on around your home as you evacuate. This is counterproductive to protecting your home because continuous use of water far in advance of the fire can drain local wells and cisterns long before the fire reaches your neighborhood. This leaves firefighters with less resources to defend your home, putting their lives and your property at higher risk. Leave sprinklers visible but **turned off** so firefighters can determine whether they will be useful or not. Read this post by Fire Safe Marin about why it is unwise to leave water running when you evacuate during a wildfire.

Before you evacuate, prepare personal water resources by making them easily accessible and clearly labelling how to access them. Unlock pump house doors and remove vegetation or other obstructions. If you have a generator, leave it in an accessible location in case the power is turned off. Notify EFR of community cisterns or tanks so they can be identified prior to an emergency. Contact EFR when planning a new cistern to ensure it is compatible with their fire equipment.

Most importantly, create defensible space around your home and buildings so that water resources can be used effectively. Water is not a reliable resource in the Colorado foothills and mountains. Maintaining a property that requires less water and resources to defend is more likely to stand strong during and be more resilient to wildfire.



Support Your Local Fire Protection District

Education and outreach are incredibly important to the district–connecting with their constituents is a vital part of building relationships and providing the highest quality services. Your support for EFR can improve the safety of this community:

- Consider volunteering with EFR. Sign up to become a volunteer firefighter, med-tech, or a turnout today!
- Provide financial support in the form of monetary donations or initiate local ballot measures that provide tax revenue for the district so they can respond to residents in their time of need.
- Attend events hosted by EFR about wildfire mitigation, emergency preparedness, and evacuation. Protecting your home from wildfire can also protect your local firefighters. Share information you learn with neighbors to build community resilience and magnify the impact of individual actions.

Support your community—sign up to volunteer with EFR. Photo credit: Keenan Prouty, EFR.

Steps to enhance firefighter safety and access BEFORE a fire:

- Install reflective address numbers on the street to make it easier for firefighters to navigate to your home under smoky conditions and at night. **Installing reflective address numbers can save lives and is inexpensive and easy to accomplish.**
    - Make sure the numbers are clearly visible from both directions on the roadway.
    - Use noncombustible materials for your address sign and sign supports.
- Improve roadway accessibility for fire engines. Long, narrow, steep, and curving private drives and driveways without turnarounds significantly decrease firefighter access to your property, depending on fire behavior.
    - Fill potholes and eroded surfaces on private drives and driveways.
    - Remove trees along narrow private drives and driveways so the horizontal clearance is 20 feet wide and prune low-hanging branches of remaining trees so the unobstructed vertical clearance is at least 13.5 feet per National Fire Protection Association recommendations.
- Post the load limit at any private bridges or culverts on your property.

Steps to enhance firefighter safety and access DURING a fire:

- Park cars in your driveway or garage, not along narrow roads, to make it easier for fire engines to access your home and your neighbors' homes.
- Clearly mark septic systems with signs or fences. Heavy fire equipment can damage septic systems.
- Clearly mark wells and water systems. Leave hoses accessible for firefighters to use when defending your home, but **DO NOT** leave the water running. This can reduce water pressure to hydrants across the community and reduce the ability of firefighters to defend your home.

3.b. CWPIPs, Relative Risk Ratings, and Targeted Action for CWPP Plan Units

This CWPP is a useful planning document, but it will only affect real change if residents, neighbors, EFR, HOAs, and agency partners come together to address shared risk and implement strategic projects. This section of the CWPP provides relative risk ratings for CWPP plan units in the district and outlines priority recommendations for collective action to address shared risk and magnify the impact of mitigation actions by individual residents. **This section is intended to encompass the Community Wildfire Protection Implementation Plans (CWPIPs) that were previously separate documents.** Guidelines for priority action could be spearheaded by Ambassadors in each plan unit with support Ambassador Teams and from fellow residents (see **Community Wildfire Ambassador Program**).

CWPP plan units are areas with shared fire risk where residents can organize and support each other to effectively reduce wildfire risk and enhance emergency preparedness. We delineated 26 plan units in the district by considering clusters of addresses, connectivity of roads, topographic features, land parcels, and local knowledge of community organization (**Figure 3.b.1**). The boundaries and names of several plan units were amended from the 2020 CWPP to improve the cohesion of each plan unit in terms of evacuation routes and to more accurately reflect community cohesion developed through the EFR Community Wildfire Ambassador Program.

The 2025 CWPP includes a comparison of overall relative risk and relative risk related to potential fire behavior, fire suppression challenges (e.g., limited hydrant availability and engine access), evacuation challenges, and home ignition zone hazards. All plan units in the district are high risk. The relative risk is a means to compare the risk of one plan unit to another. This assessment was based on predictions of fire behavior, radiant heat and ember cast exposure, roadway survivability, relative evacuation times, and local knowledge from the CWPP Advisory Committee and other fire and fuel professionals in the district about evacuation hazards, suppression challenges, and hazards in the home ignition zone. See **Appendix B** for a description of hazard rating methodology. Plan unit hazard ratings are specific to the district and are not intended or suitable for comparing this fire protection district to other communities in Colorado or the United States.

The potential for wildfires to pose a threat to lives and property is high across the district, but risk is relatively higher in some parts of the district than others (**Figure 3.b.2**). Plan units with extreme relative risk are strong candidates for immediate action to mitigate hazardous conditions. However, plan units with high relative risk still possess conditions that could threaten life and/or property in the case of a wildfire. Specific conditions that contribute to relative risk in and targeted recommendations are provided for each plan unit below.

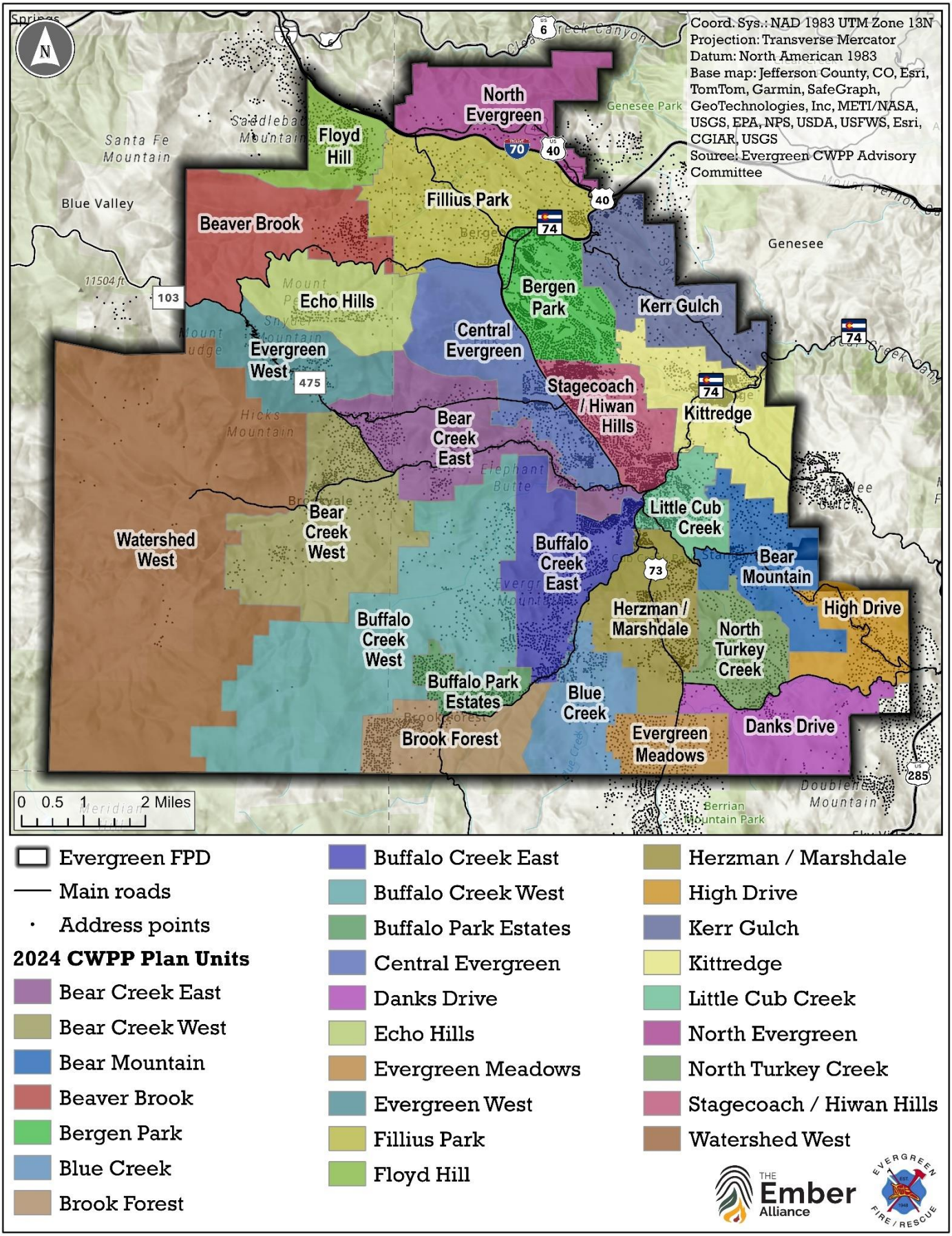


Figure 3.b.1. *CWPP plan units in the district.*

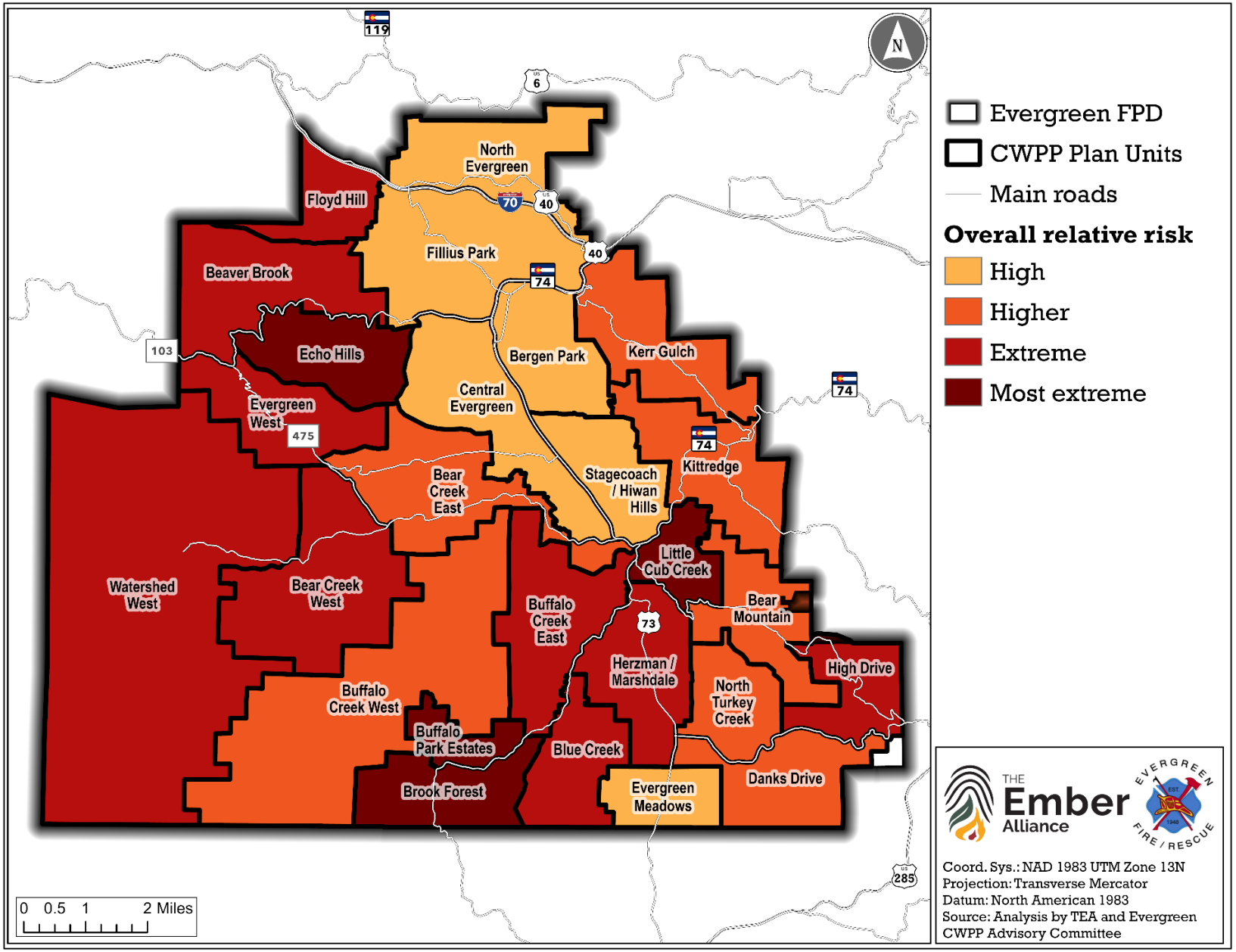


Figure 3.b.2 *Relative risk rating for plan units across the district. All residents within the district are exposed to elevated fire danger due to topography and fuels in this part of Colorado and should take recommended actions in this CWPP seriously, but some plan units have especially elevated risk.*

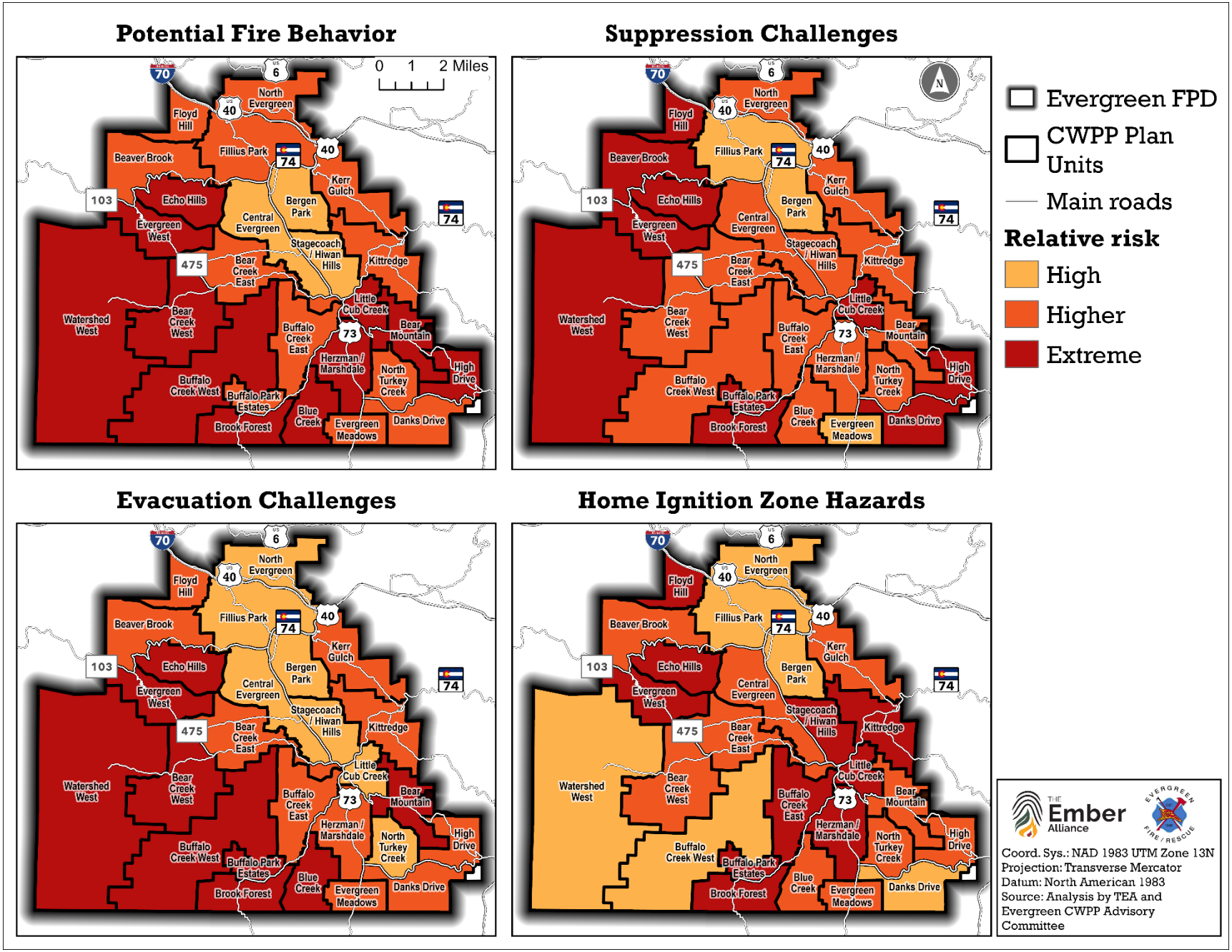


Figure 3.b.3*. Plan unit relative risk for each component used to determine overall risk ratings in the district*

Bear Creek East

Higher relative risk rating

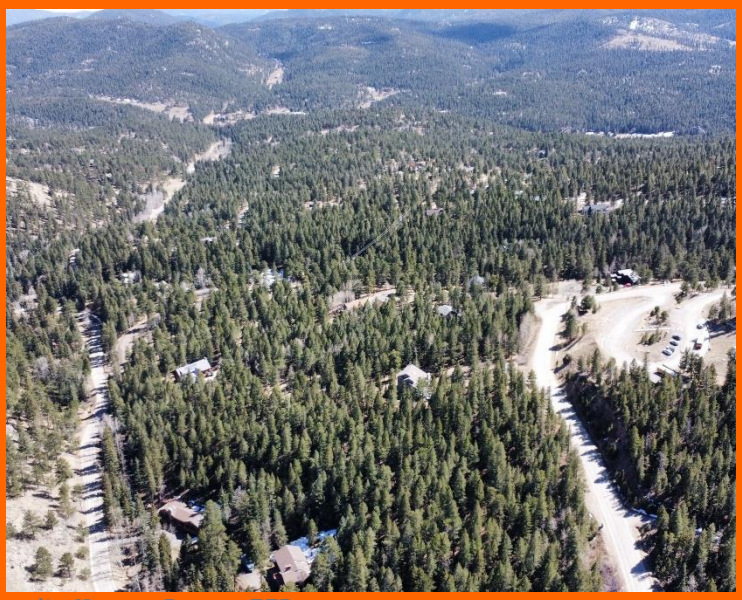


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

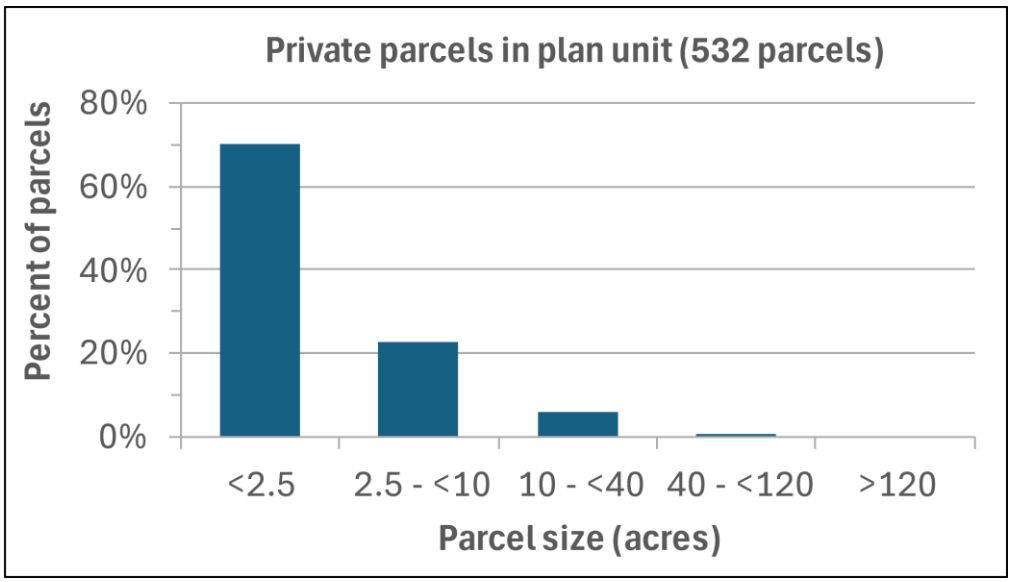
Under extreme fire weather and during a fire:

- **50%** of the area could experience very high to extreme fire behavior.
- **60%** of the area could experience moderate to high rates of fire spread.
- **78%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **82%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost three-fourths of this plan unit is private property. Public lands in this plan unit are Bergen Peak State Wildlife Area, Elk Meadow Park, and Dedisse Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 480 structures (e.g., houses, businesses, sheds, outbuildings) and 532 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres), and some properties fall within HOAs. There are several businesses and highly valued resources and assets (HVRAs) in this plan unit, including a cemetery and six historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	74%
Colorado Parks & Wildlife	14% (Bergen Peak State Wildlife Area)
Denver Mountain Parks	9% (Dedisse Park)
Jefferson County	3% (Elk Meadow Park)
Total plan unit size: 3,126 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Much of the plan unit has steep slopes that support dense conifer forests. North- and northwest-facing slopes throughout the plan unit are covered in dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support lower-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Riparian vegetation such as willows, sedges, and cottonwood occur along Bear Creek running from west to east through the center of the plan unit. Riparian vegetation tends to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

Areas in the northeastern portion of this plan unit have scattered trees and continuous understories of grasses and shrubs. These vegetation types can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, grasslands and shrublands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions in pockets of dense development in this plan unit. Most homes have ignition-resistant class-A roofs. About half of homes are built with newer ignition-resistant material, but the other half of homes have combustible siding and decking. Most properties have wooden fencing

that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Cemetery	Bear Creek Cemetery	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Evergreen Lake House	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Evergreen Lake Warming Hut	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Greystone	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Listen Lodge (Catus Jacks)	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Old Bell Museum	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Rosedale	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from recreators at Elk Meadow Park, Evergreen Lake, and the Evergreen Golf Course, could result in high levels of congestion during an emergency. There are some properties with livestock, which can increase evacuation time. Cell service is

moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Table 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Highway 73	High to extreme	First priority	Yes
Stagecoach Boulevard	Moderate	Second priority	Yes
Upper Bear Creek Road	Moderate	Second priority	Yes
Witter Gulch Road	Moderate	Second priority	Yes (portions of roadway)
Greystone Road	Moderate		Yes
South Blue Spruce Road	Lower^		Yes

^While South Blue Spruce Road was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still an important roadway for mitigation in the Bear Creek Plan Unit because of its strategic value as a potential control line.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are less than ten hydrants available in the eastern portion of the plan unit and less than five dip sites in the western portion of the plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Conducted work in the Dedisse Denver Mountain Park area.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

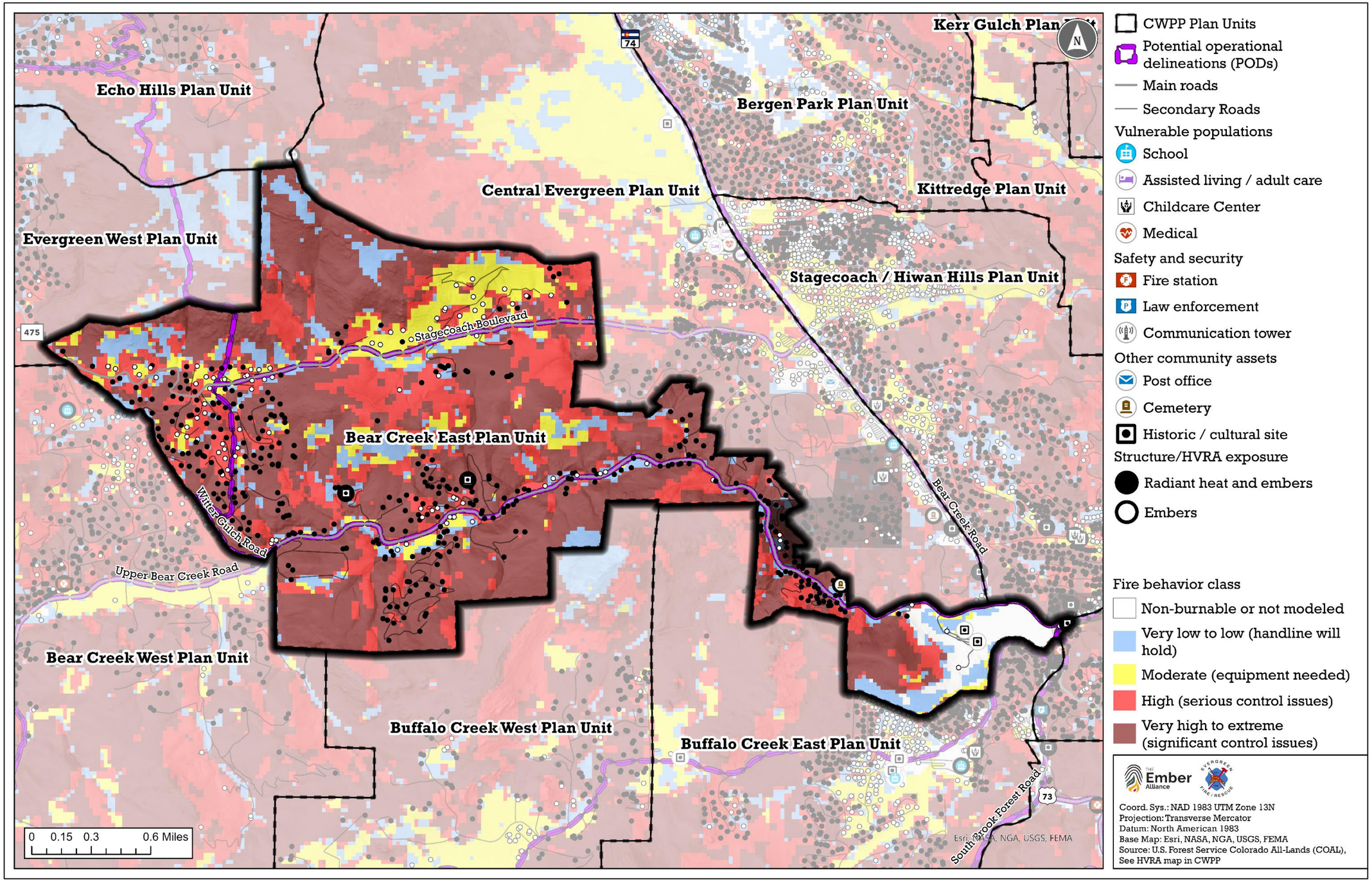
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.

- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Build and expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Partner with neighboring plan units in developing Mitigation and Education Events.

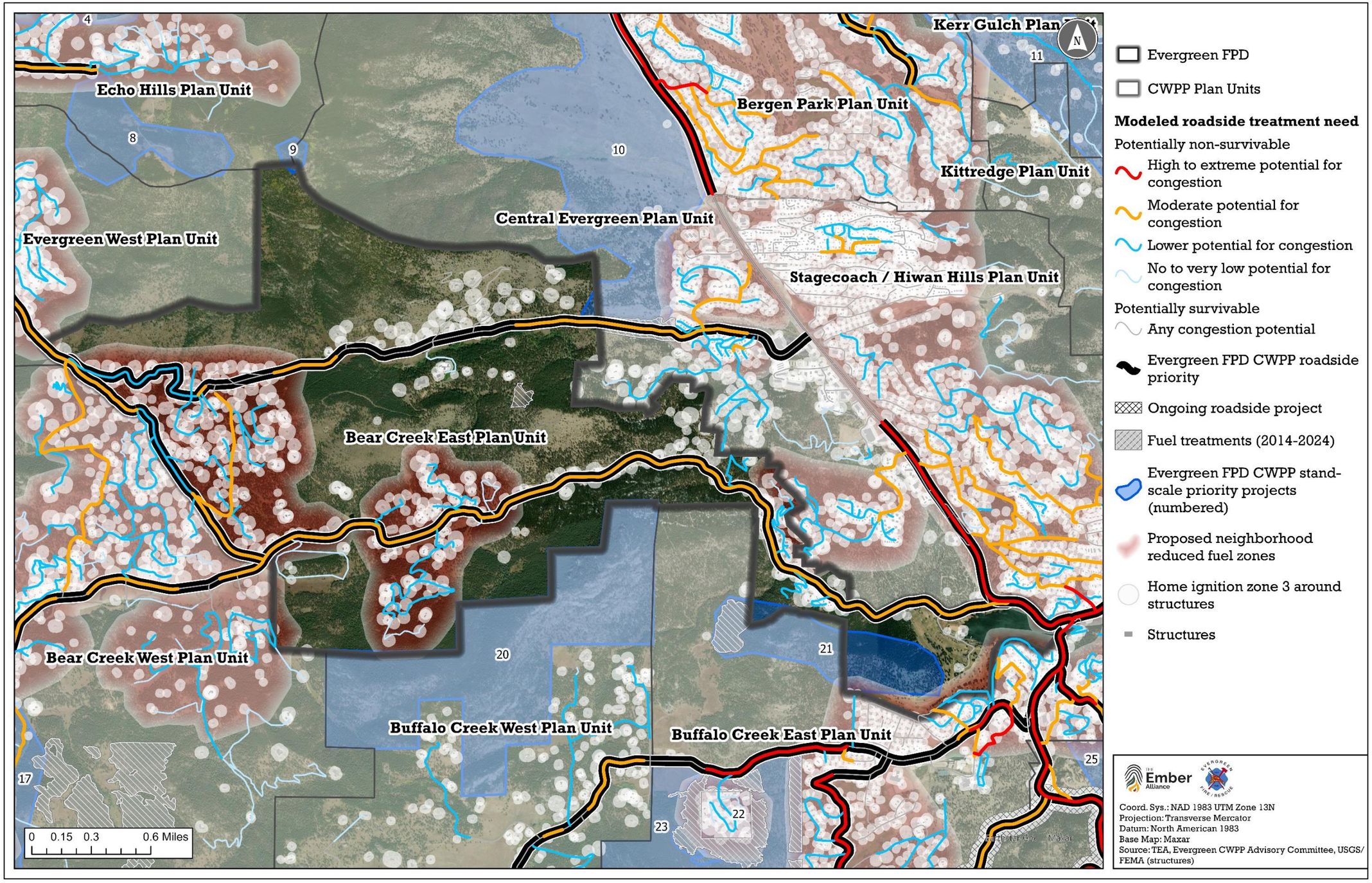
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones.** Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore

reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



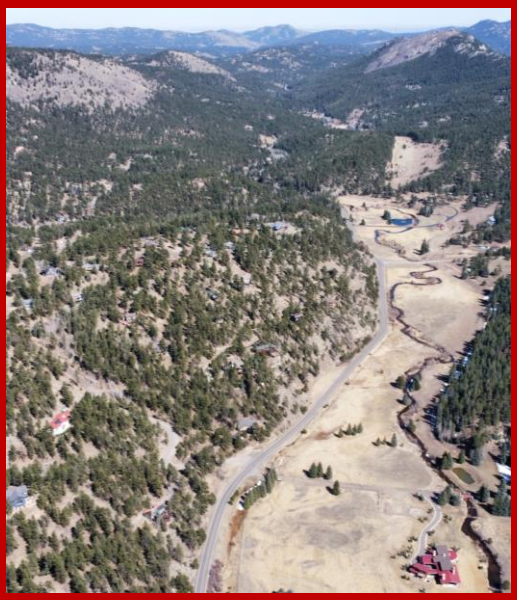
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis in this plan unit, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for the sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Bear Creek West

Extreme relative risk rating



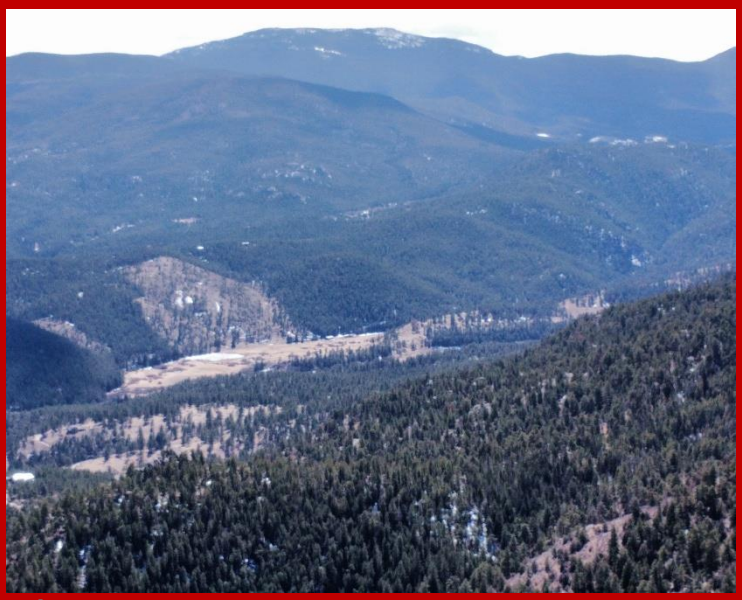


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

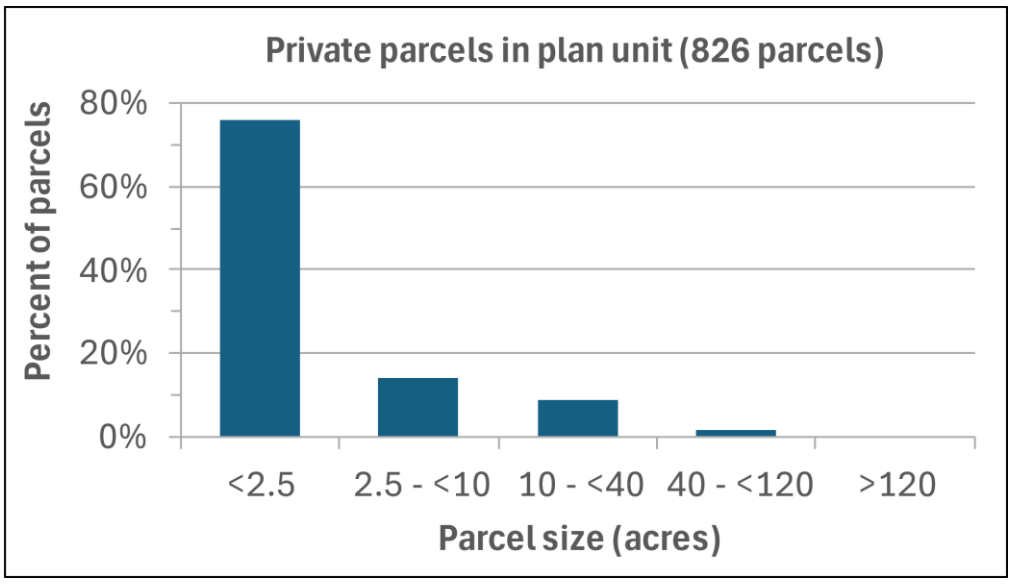
Under extreme fire weather and during a fire:

- **56%** of the area could experience very high to extreme fire behavior.
- **55%** of the area could experience moderate to high rates of fire spread.
- **82%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **94%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: Almost all of this plan unit is private property (99%). Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 508 structures (e.g., houses, businesses, sheds, outbuildings) and 826 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres). There are several highly valued resources and assets (HVRAs) in this plan unit, including King-Murphy Elementary School, Evergreen Fire Rescue Station 5, and two historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	99%
Colorado State Land Board	1%
Total plan unit size: 3,995 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Much of the plan unit has steep slopes covered in dense conifer forests. Lodgepole pine forests occur at higher elevations in the southwestern portion of this plan unit. North- and northwest-facing slopes throughout the rest of the plan unit are covered in dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support lower-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Riparian vegetation such as willows and sedges occur along Bear Creek and Corral Creek running from west to east through the center of the plan unit. Riparian vegetation tends to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs. About half of homes are built with newer ignition-resistant material, but the other half of homes have combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have

additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Fire station	Evergreen Fire Rescue Station 5	High density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Singing River Ranch Complex	High density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	USFS Witter Gulch Ranger Station	Radiant heat and high density of embers from burning vegetation	Highest (75-100%)
School	King - Murphy Elementary School	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in high levels of congestion during an emergency. There are many properties with livestock, which can increase evacuation time. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Upper Bear Creek Road	Moderate	Second priority	Yes
Witter Gulch Road	Moderate	Second priority	Yes (portions of roadway)
Yankee Creek Road	Moderate		Yes
Circle K Ranch Road	Moderate		
Echo Lake Drive	Moderate		
Marion Drive	Moderate		
Mary Beth Road	Moderate		
Patty Drive	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are no wet hydrants available in this plan unit. There is one cistern at Station 5 and less than five cisterns in the plan unit over 10,000 gallons, less than five dip sites, and one dry hydrant across the plan unit. Some roadways and driveways are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
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Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
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Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- JCD projects conducted on far west edge of plan unit.
- Increased Community Wildfire Ambassador presence in the community and involvement with EFR.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

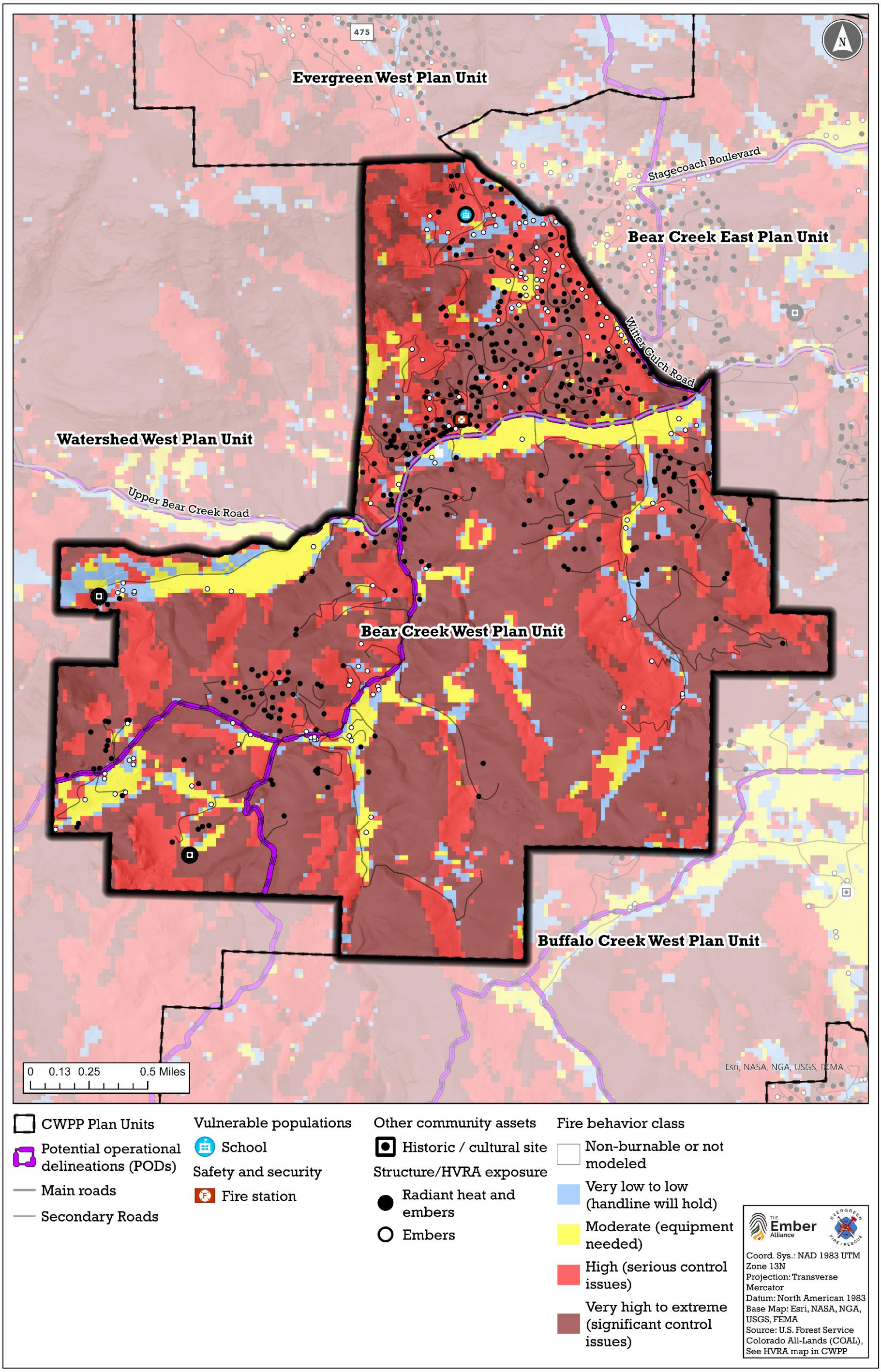
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.

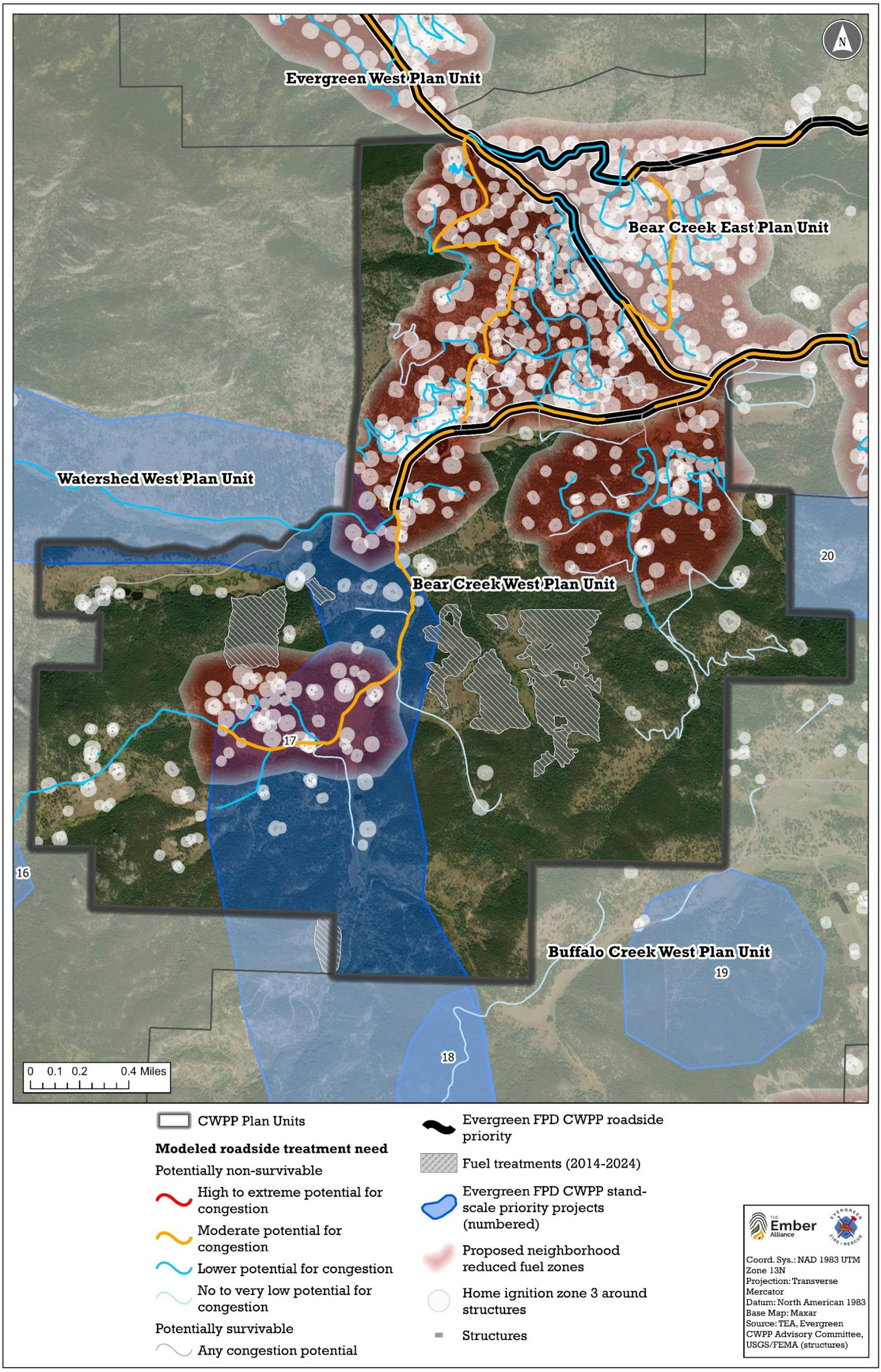
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit, with focus on connectivity across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Dispel old narratives.
- Continue Canyon Clean Up & Potluck Education Events.

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



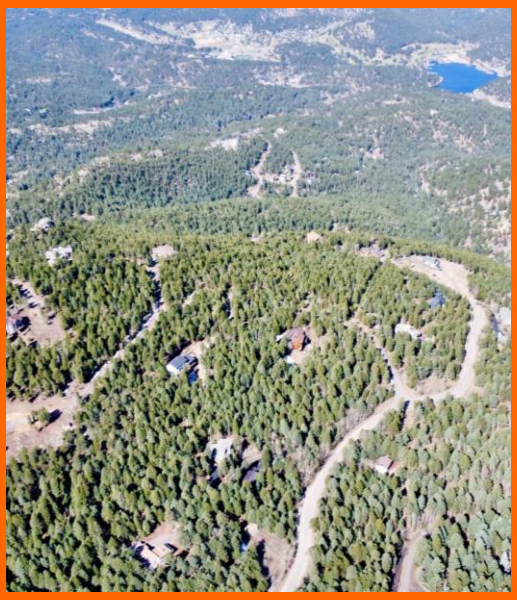
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Bear Mountain

Higher relative risk rating



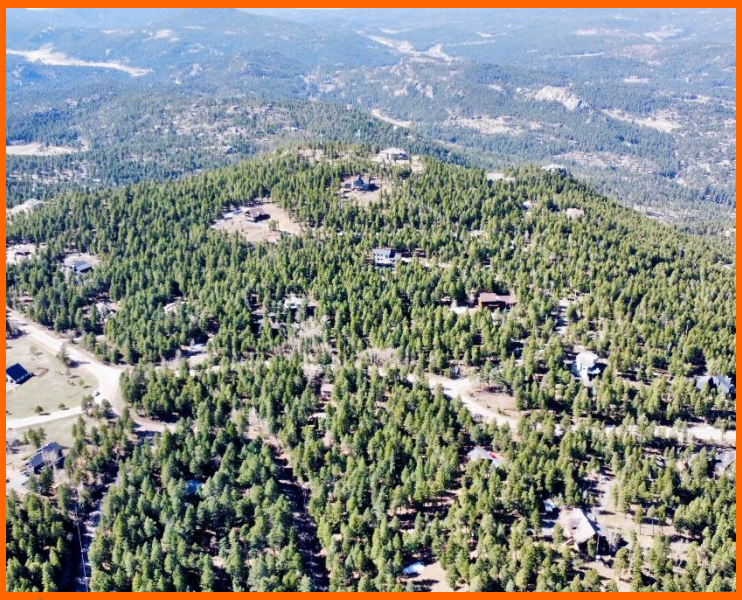


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

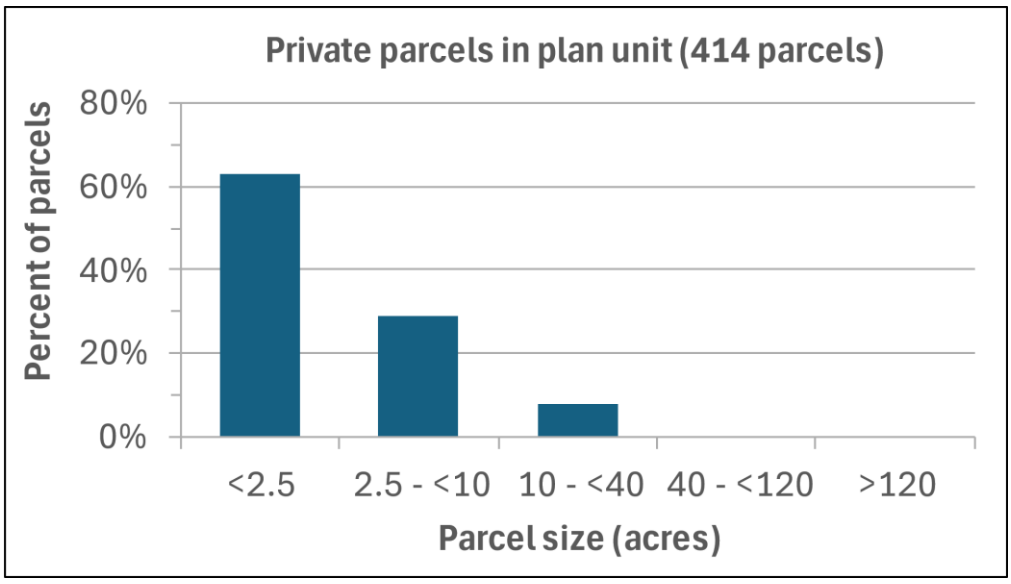
Under extreme fire weather and during a fire:

- **55%** of the area could experience very high to extreme fire behavior.
- **69%** of the area could experience moderate to high rates of fire spread.
- **87%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **90%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Most of this plan unit is private property (87%). Public lands in this plan unit are Bell Park and Stanley Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 275 structures (e.g., houses, businesses, sheds, outbuildings) and 414 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres).

Landownership	Percent of plan unit
Private property	87%
Denver Mountain Parks	13% (Bell Park and Stanley Park)
Total plan unit size: 2,054 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme, but potential fire behavior is highly variable across the plan unit. Much of the plan unit has steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support low- to moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Grasslands and shrublands occur through the center of the plan unit, and these vegetation types can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, grasslands and shrublands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

The shallow valley that is oriented north-to-south in the southern part of the plan unit has higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses in this valley can dry out rapidly under hot, dry, and windy conditions, and dry grass can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks has undertaken extensive forest restoration treatments and roadside fuel treatments in Bell Park to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions. These treatments can also create safer conditions for citizens during evacuations.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, wooden sheds, or accessory dwelling units. Over a quarter of homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are many accessory dwelling units and outbuildings in this plan unit, and if hazards are not mitigated around these structures, they can pose a risk to nearby primary structures if they ignite during a wildfire.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Communication tower		Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Lewis Ranch	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in high levels of congestion during an emergency. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway
High Drive	Moderate	Second priority
Stanley Park Road	Moderate	Second priority
Lone Peak Drive	Moderate	
Lone Peak Trail	Moderate	
South Bear Mountain Drive	Moderate	

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are no wet hydrants available in this plan unit, and there are less than three cisterns and one dip site. Some roadways and driveways are steep, narrow, or long, which makes them less accessible to firefighters.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Began roadway mitigation of secondary roadways.
- Increased defensible space inspections.
- Increased home assessments.
- Worked in the Parks around the plan unit.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

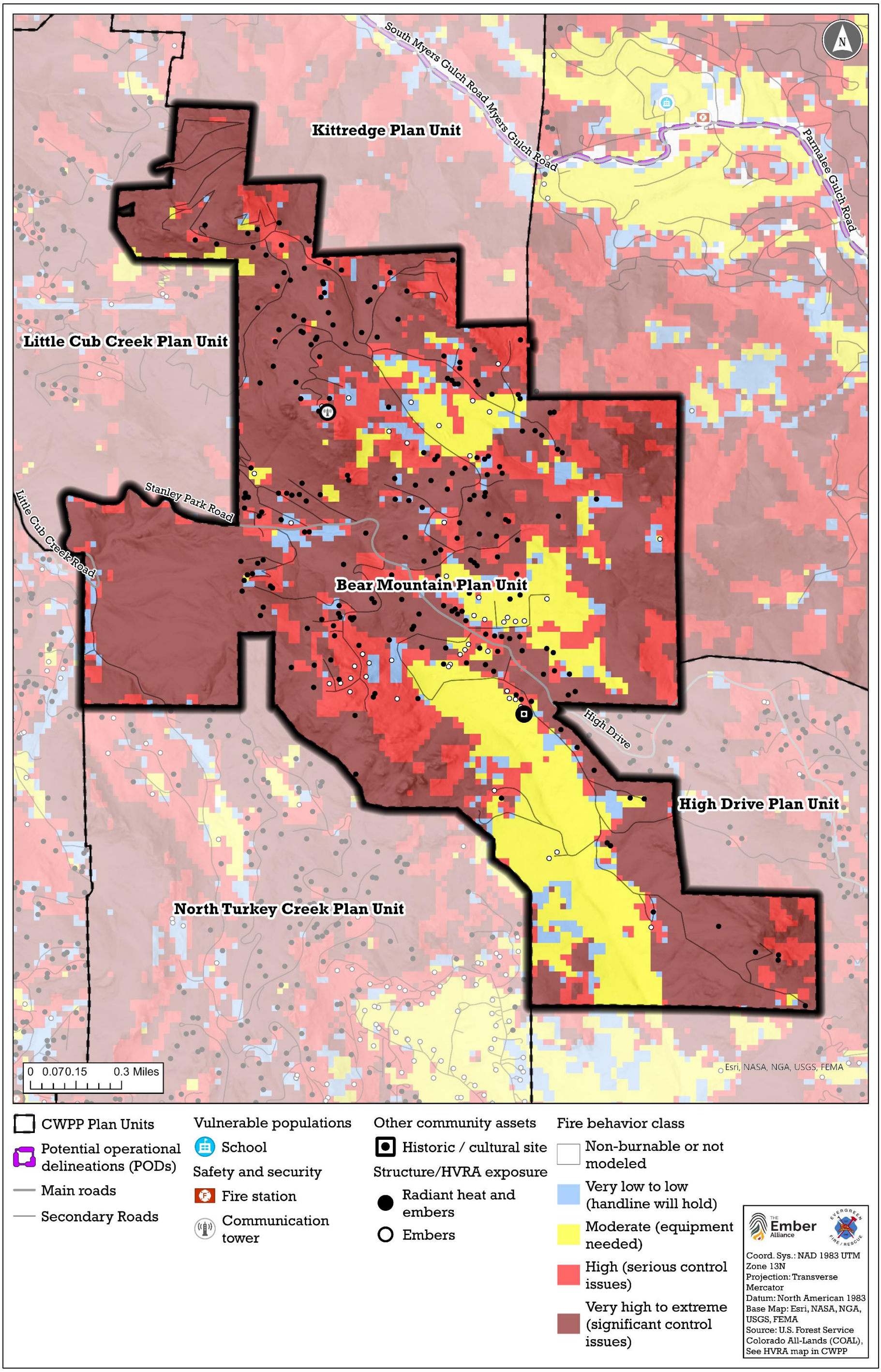
Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see maps in other CWPIPs for reference). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

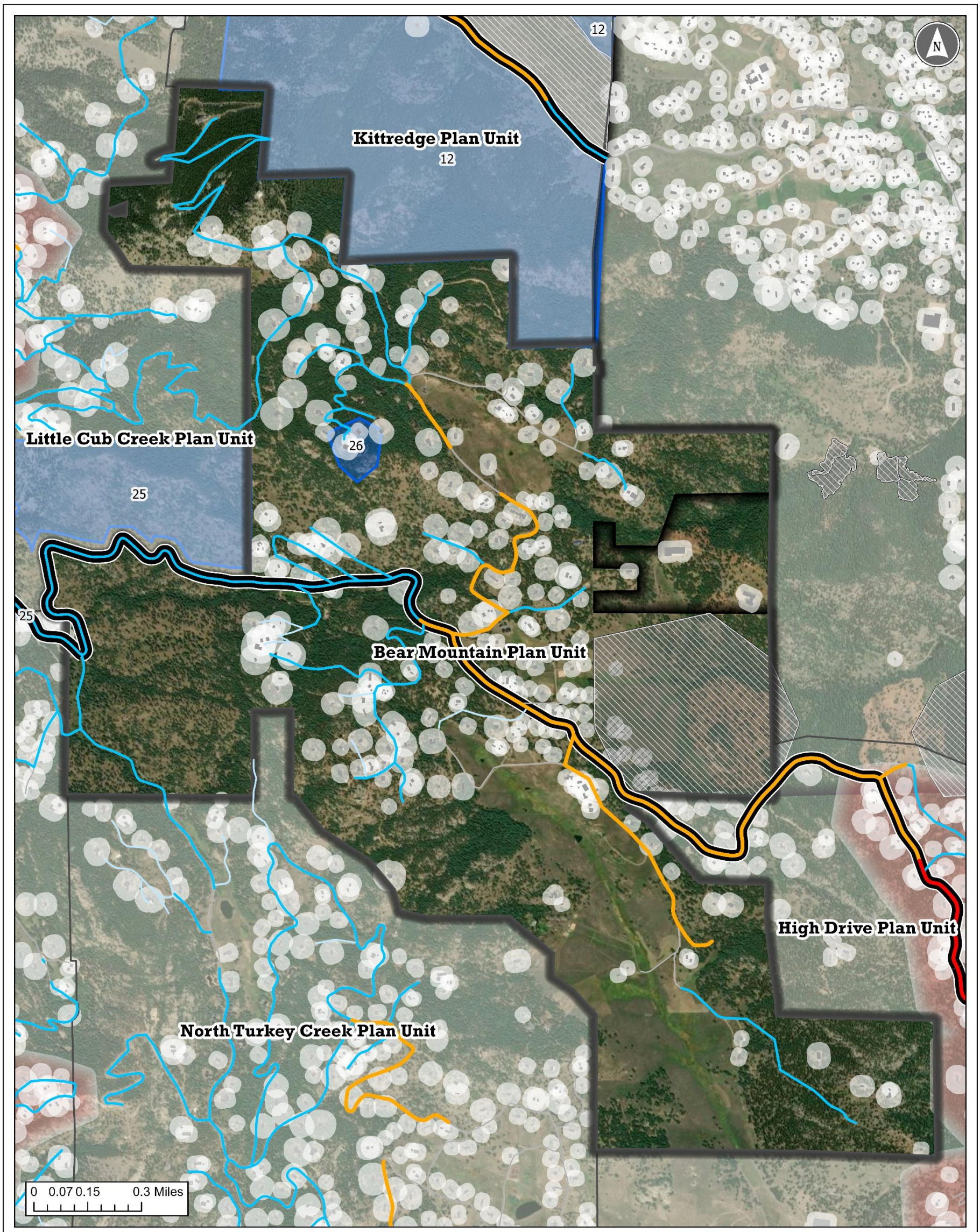
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Dispel old narratives.
- Connect entire plan unit together.
- Continue focused Neighborhood Roadside Mitigation Events & HOA Social Education Events.

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Residents living off Loggers Trail need to stay apprised of evacuations in both Bear Mountain and High Drive plan units.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes. Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk.*

Beaver Brook

Extreme relative risk rating

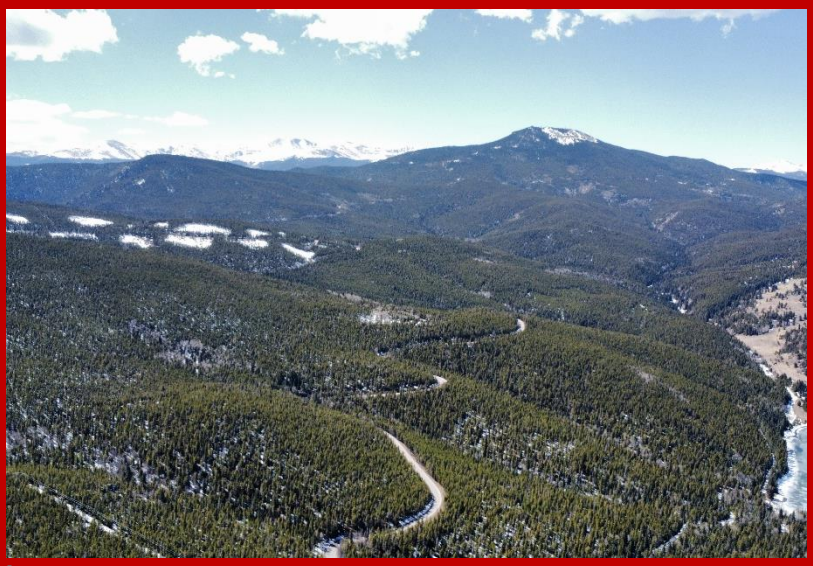


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

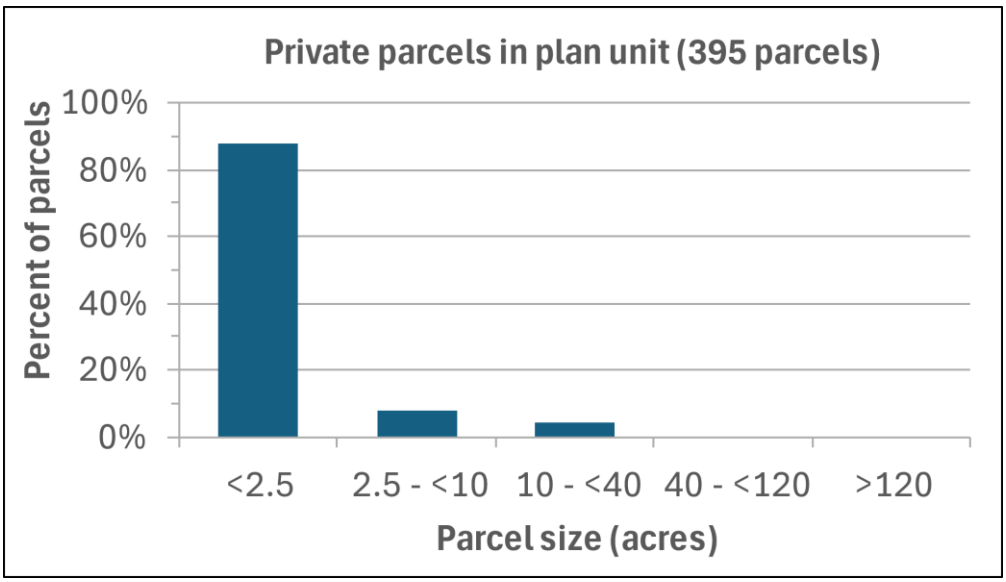
Under extreme fire weather and during a fire:

- **50%** of the area could experience very high to extreme fire behavior.
- **45%** of the area could experience moderate to high rates of fire spread.
- **77%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **96%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: Over three-fourths of this plan unit is public land (78%), including the Arapaho and Roosevelt National Forest, Beaverbrook Watershed Open Space, and Mount Pence. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 207 structures (e.g., houses, businesses, sheds, outbuildings) and 395 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres).

Landownership	Percent of plan unit
U.S. Forest Service	60% (Arapaho and Roosevelt National Forest)
Private property	22%
Colorado State Land Board	15%
Clear Creek County	3% (Beaverbrook Watershed Open Space)
Denver Mountain Parks	1% (Mount Pence)
Total plan unit size: 2,995 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Most of the plan unit has steep slopes covered in dense lodgepole pine forests. Mid-elevation areas are covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

South-facing slopes in this plan unit support ponderosa pine forests with variable tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Aspen trees occur in large clumps or in scattered patches around this plan unit. Aspen tends to have higher fuel moisture and are less likely to support active or passive crown fires. However, during drought, aspen trees can be consumed by wildfire. Fortunately, the sprouting ability of aspen often allows them to repopulate burned areas.

Riparian vegetation such as willows, sedges, and cottonwood occur along Beaver Brook running from west to east through the center of the plan unit. Riparian vegetation tends to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

Patches of grasslands are scattered throughout the plan unit. Grasslands can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Under hot, dry, and windy conditions, these vegetation types can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. There are some properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**)

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes (portions of roadway)
Pine Valley Road	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no wet hydrants in this plan unit. There is one documented cistern over 10,000 gallons and one dip site. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in the easter part of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Held community work days to improve roadside mitigation along the east end of Pine Valley Road.
- Established partnership with Denver Mountain Parks on roadside mitigation.
- Hosted community potluck gatherings to create awareness, provide information, introduce EFR personnel, provide homeowner's insurance updates, promote defensible space & home hardening, etc.
- Supported homeowners on grant opportunities.
- Distributed EFR flyers/brochures on evacuation, community meetings, etc.
- Conducted neighborhood walk with EFR to assess/discuss evacuation challenges and roadside mitigation opportunities.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

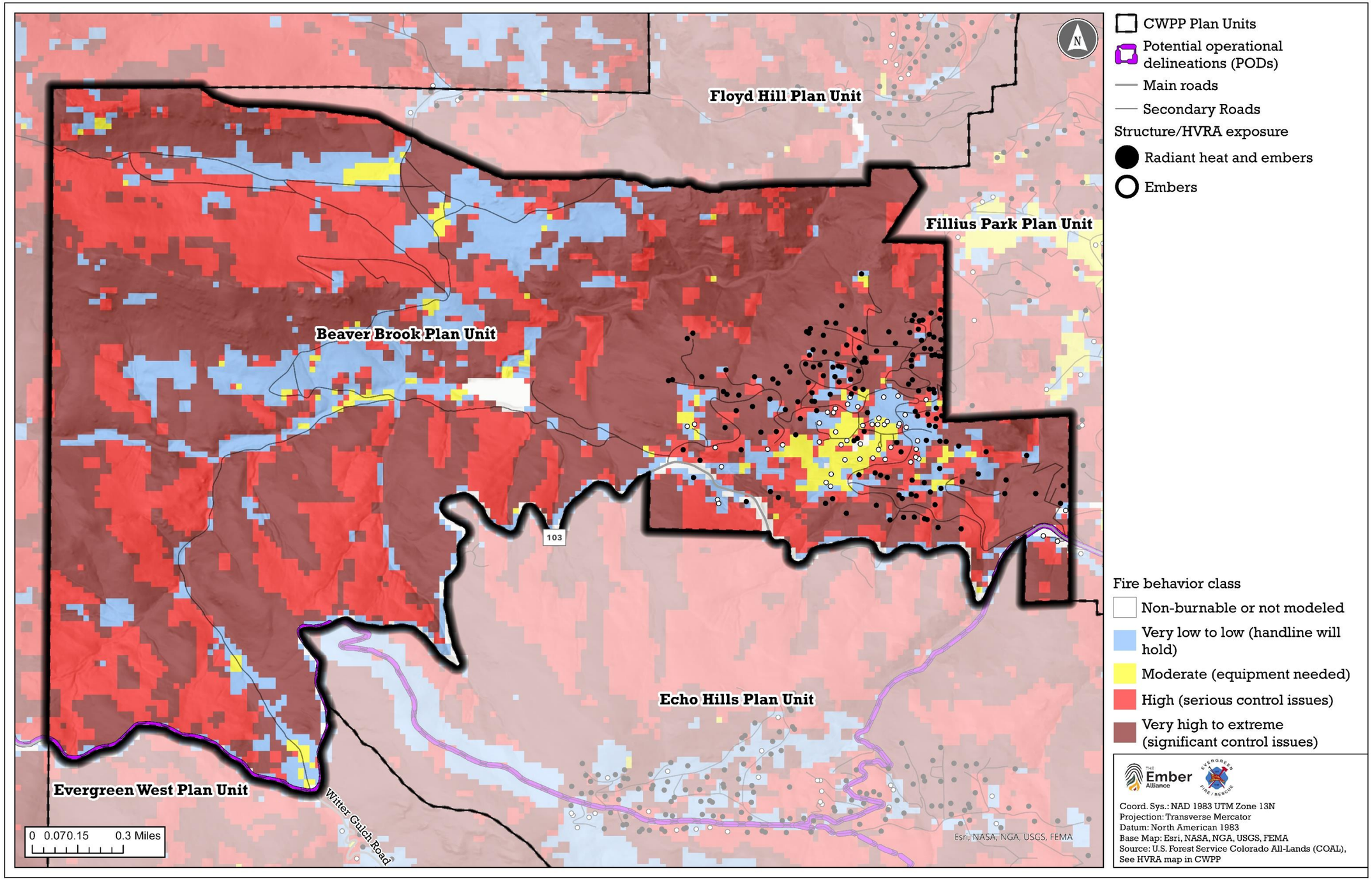
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Continued Community Wildfire Ambassador Team momentum, outreach communication, and roadside mitigation projects.
- Support landscape-scale mitigation work on the western flank and through the Beaver Brook Watershed.
- Continue Community Roadside Mitigation Events and Potluck Education Events.

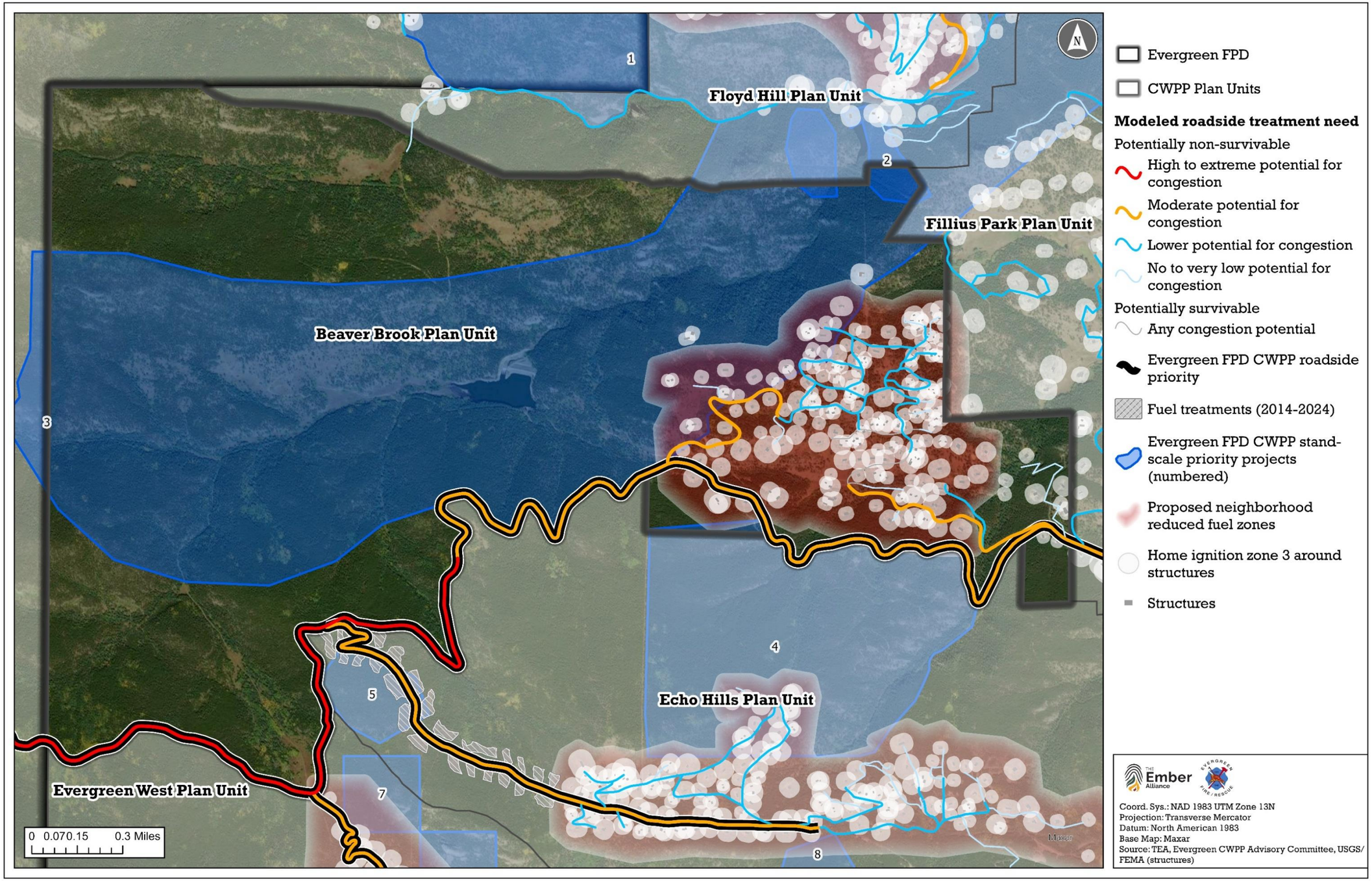
Recommendations for Residents

1. Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roads and driveways to improve evacuation safety and firefighter access during a wildfire.

- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



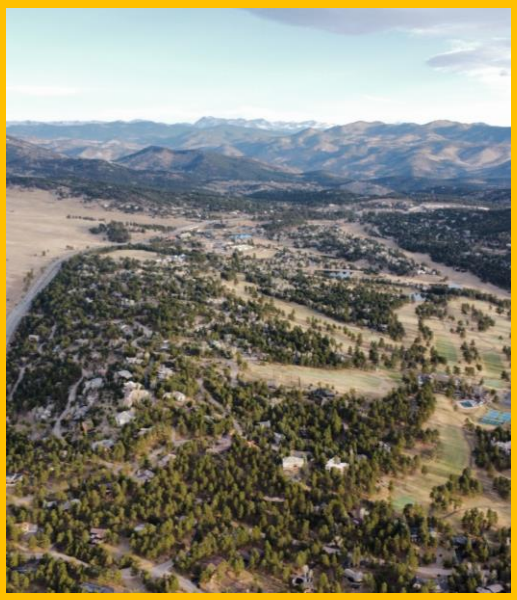
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Bergen Park

High relative risk rating



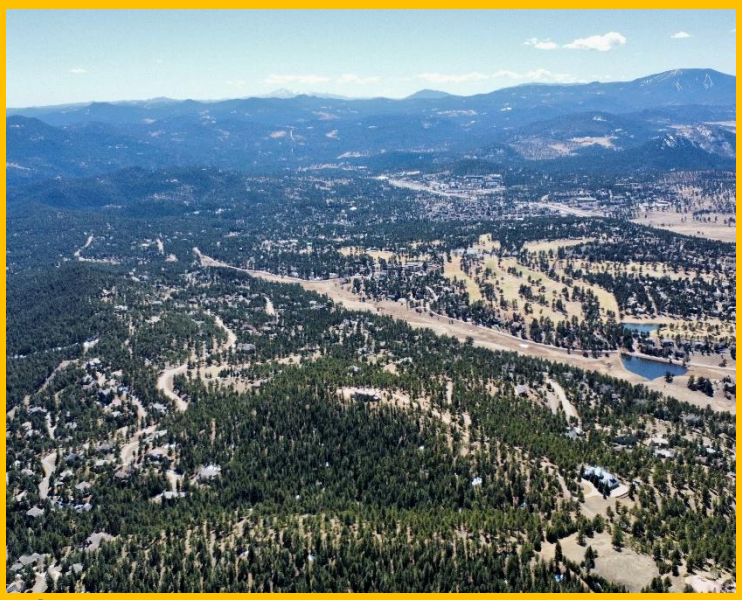


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

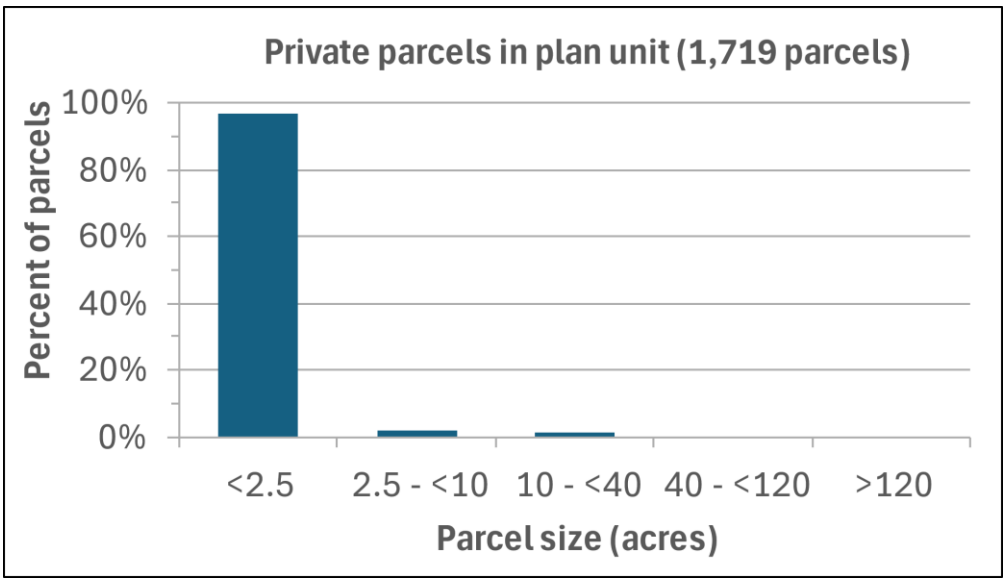
Under extreme fire weather and during a fire:

- **33%** of the area could experience very high to extreme fire behavior.
- **45%** of the area could experience moderate to high rates of fire spread.
- **61%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **58%** of roadways have potentially non-survivable conditions.
- This plan unit has a **moderate** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has the **highest** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all this plan unit is private property (97%). Public land in this plan unit are Buchanan Park and Bergen Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 1,284 structures (e.g., houses, businesses, sheds, outbuildings) and 1,719 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres), and some properties fall within HOAs. There are several businesses and highly valued resources and assets (HVRAs) in this plan unit, including Evergreen Fire Rescue Station 2, Bergen Elementary School, and Evergreen Middle School (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	97%
Evergreen Park & Recreation District	2% (Buchanan Park)
Denver Mountain Parks	1% (Bergen Park)
Total plan unit size: 1,962 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "high" relative risk category, but potential fire behavior is variable across this plan unit. Several steep, northwest-facing slopes in the eastern part of the plan unit are covered in continuous dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslopes. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Most forests in this plan unit are fragmented by roadways, ponds, the golf course, and housing developments. Low- to moderate-density ponderosa pine forests throughout the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops.

Grasses and riparian vegetation along Troublesome Creek tend to have high fuel moisture and can slow the spread of wildfire. However, riparian vegetation can burn and carry wildfire during droughts, and grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths. Radiant heat from intense grassfires could ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands throughout this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Thinning and prescribed burns conducted by Jefferson County Open Space on Elk Meadows Park to the east of this plan unit reduced tree densities, removed ladder and surface fuels, and improved habitat for some wildlife and plant species. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "high" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-home ignitions. There is an extreme potential for home-to-home ignitions due to dense development across this plan

unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. More than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Some homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are numerous multi-unit properties in this plan unit, so coordination among owners and/or the property management organization is crucial to accomplish home hardening and fuel removal around these structures. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Childcare center	Buchanan Park Recreation Center	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Fire station	Evergreen Fire Rescue Station 2	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Bancroft/Johnson barn	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Bancroft/Johnson outbuildings	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Bergen Home	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Evergreen Center for the Arts	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Fahnestock Buildings	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	The Bagery Building	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Low (<25%)

School	Bergen Elementary School	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
School	Evergreen Middle School	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
School	Vertical Skills Academy	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Sewage treatment	West Jefferson County Metro	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Most roadways in this plan unit are accessible for firefighters and can accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from businesses and recreators at Buchanan Park / Recreation Center, could result in some congestion during an emergency.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Evergreen Parkway	High to extreme	First priority	Yes
Brookline Road	High to extreme		
Lewis Ridge Road	High to extreme^		
Keystone Drive	Moderate	Third priority	
Prouty Drive	Moderate	Third priority	
Augusta Drive	Moderate		
Interlocken Drive	Moderate		
Inverness Drive	Moderate		
Pinehurst Drive	Moderate		
Placid Drive	Moderate		
South Hiwan Drive	Moderate		
South Medinah Drive	Moderate		
Sugarbush Drive	Moderate		
The Country Club Lane	Moderate		

^ Lewis Ridge Road was modeled as having a moderate potential for congestion, but based on local knowledge, this road could experience high to extreme congestion.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "high" relative risk category. There are numerous hydrants and five dip sites in this plan unit. However, if wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased defensible space and home hardening.
- Increased home assessments.
- Maintained Firewise USA® site with active forestry committee in the Ridge HOA.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

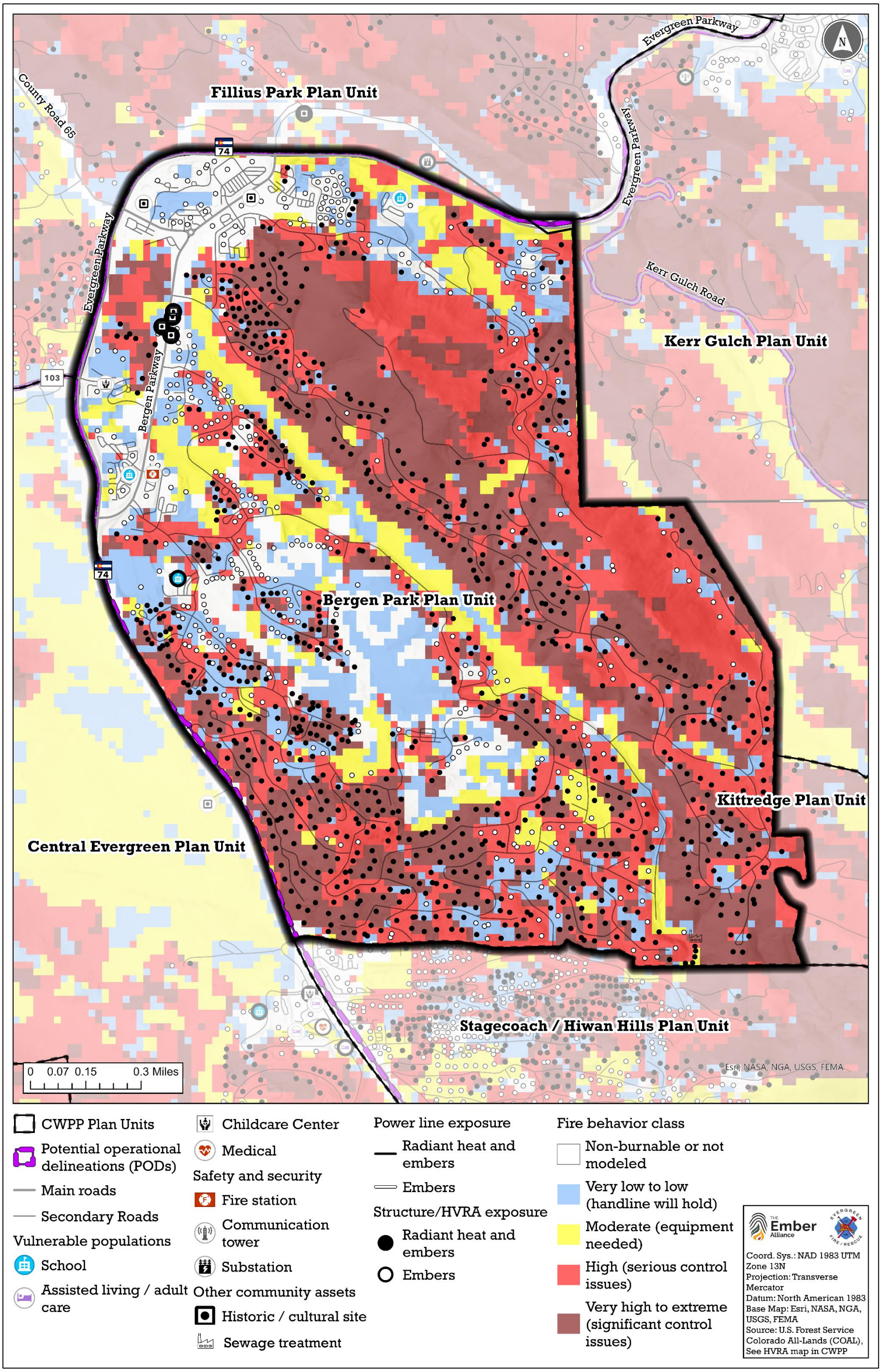
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- Work with all of the HOAs across the plan unit, especially around coordinating open space treatments.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Build a Community Wildfire Ambassador Team from the established framework.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods and coordinate with HOAs that have open space for additional opportunities.
- Pay special attention to ornamental Juniper removal across the plan unit.
- Continue focused HOA Mitigation Events.

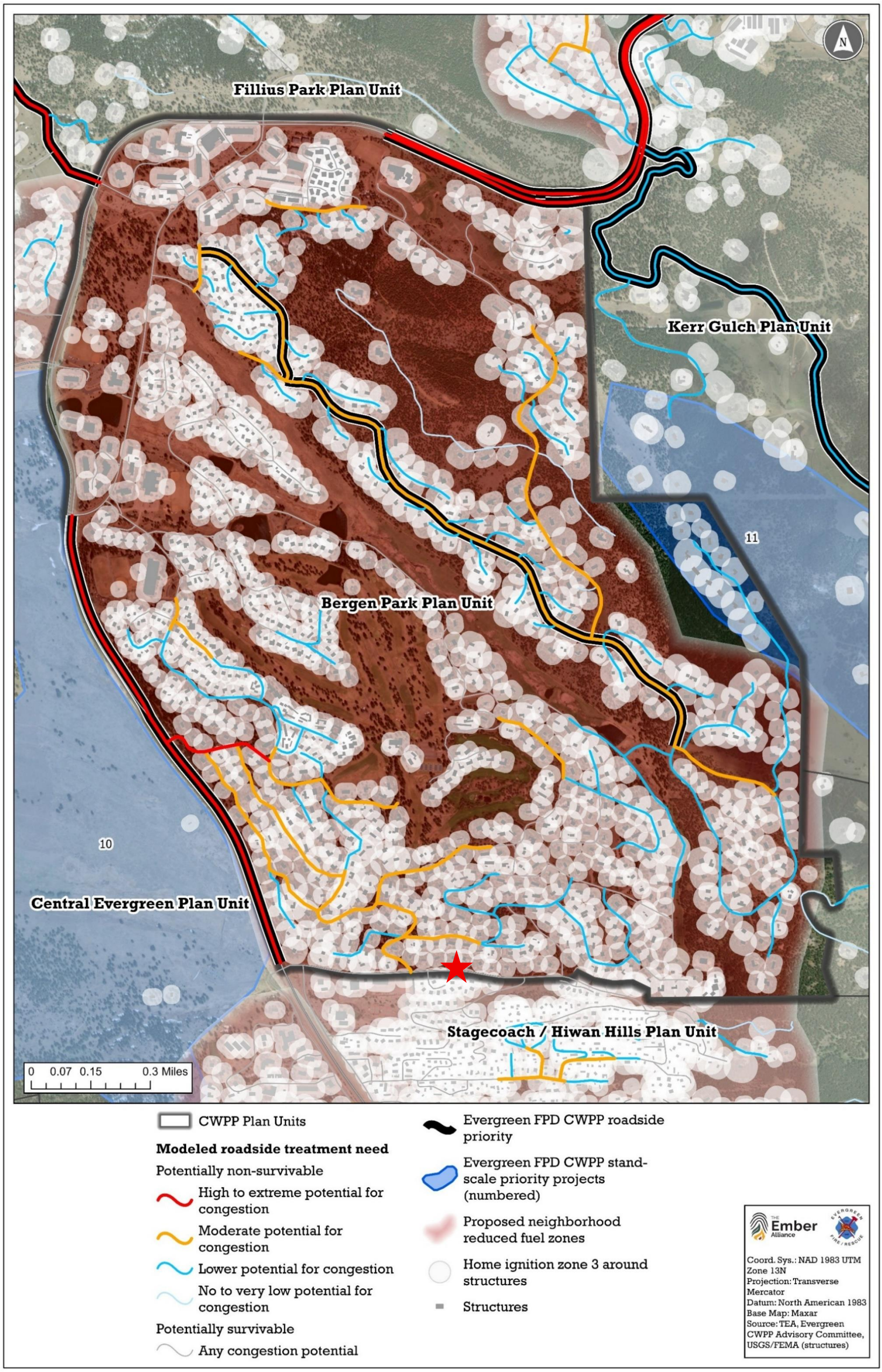
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.

- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roads and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure*** **2.a.1** *in the CWPP for sources of HVRA data.*



★ Lewis Ridge Road was modeled as having a moderate potential for congestion, but based on local knowledge, this road could experience high to extreme congestion, making it important to remove roadside hazards along this road.

Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Blue Creek

Extreme relative risk rating

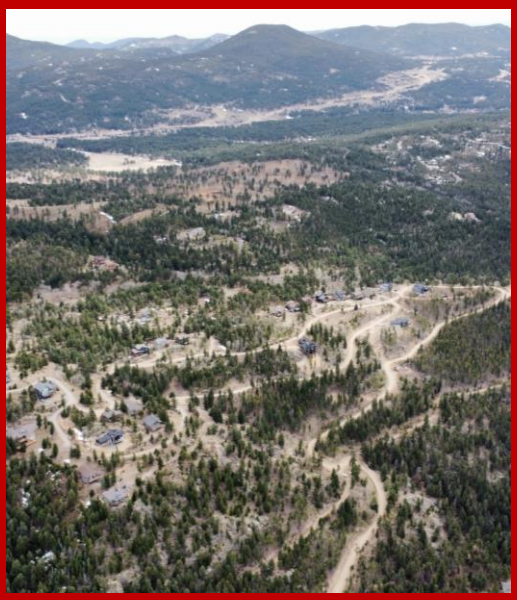


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

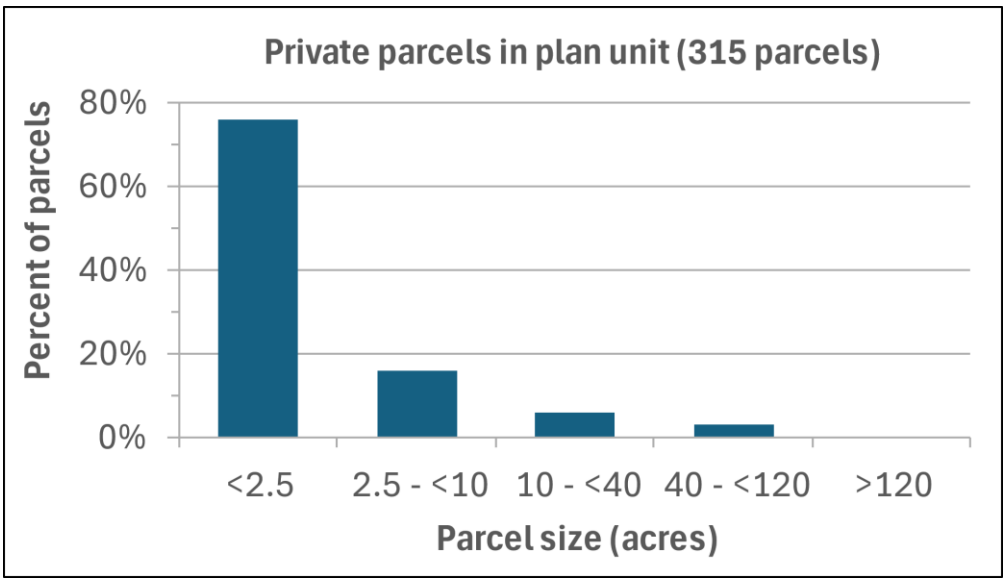
Under extreme fire weather and during a fire:

- **59%** of the area could experience very high to extreme fire behavior.
- **56%** of the area could experience moderate to high rates of fire spread.
- **91%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **94%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all of this plan unit is private property (91%). Public land in this plan unit is the Arapaho and Roosevelt National Forest. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 185 structures (e.g., houses, businesses, sheds, outbuildings) and 315 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres), and some properties fall within HOAs.

Landownership	Percent of plan unit
Private property	91%
U.S. Forest Service	9% (Arapaho and Roosevelt National Forest)
Total plan unit size: 1,780 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Much of the plan unit has steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense lodgepole pine forests at higher elevations and dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce at mid elevations. These forests can carry active crown fires, especially if strong winds were to push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Flat areas along Blue Creek are covered in riparian vegetation and grasses. Riparian vegetation such as willows, sedges, and cottonwood tend to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts. Under hot, dry, and windy conditions, grassy vegetation can carry fast-moving wildfires with long flame lengths that emit significant radiant heat. Such heat can ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

The Jefferson Conservation District and private landowners continue to undertake forest restoration treatments in this plan unit to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions in pockets of dense development in this plan unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in high levels of congestion during an emergency, and ongoing development in this plan unit could exacerbate these conditions. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Blue Creek Road	High to extreme	Second priority	Yes
South Brook Forest Road	Moderate	Second priority	Yes
Lynx Lair Road	Moderate		
Berry Brush Lane	Low^		

^While Berry Brush Lane was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still an important roadway for mitigation in the Blue Creek Plan Unit. Depending on the direction of fire spread, this road might be heavily utilized by evacuees.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are no hydrants and only a limited number of cisterns over 10,000 gallons in this plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density development in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased publicity and education around Community Wildfire Ambassador Program.
- Hosted a special event.
- Added one volunteer to the Community Wildfire Ambassador Team.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

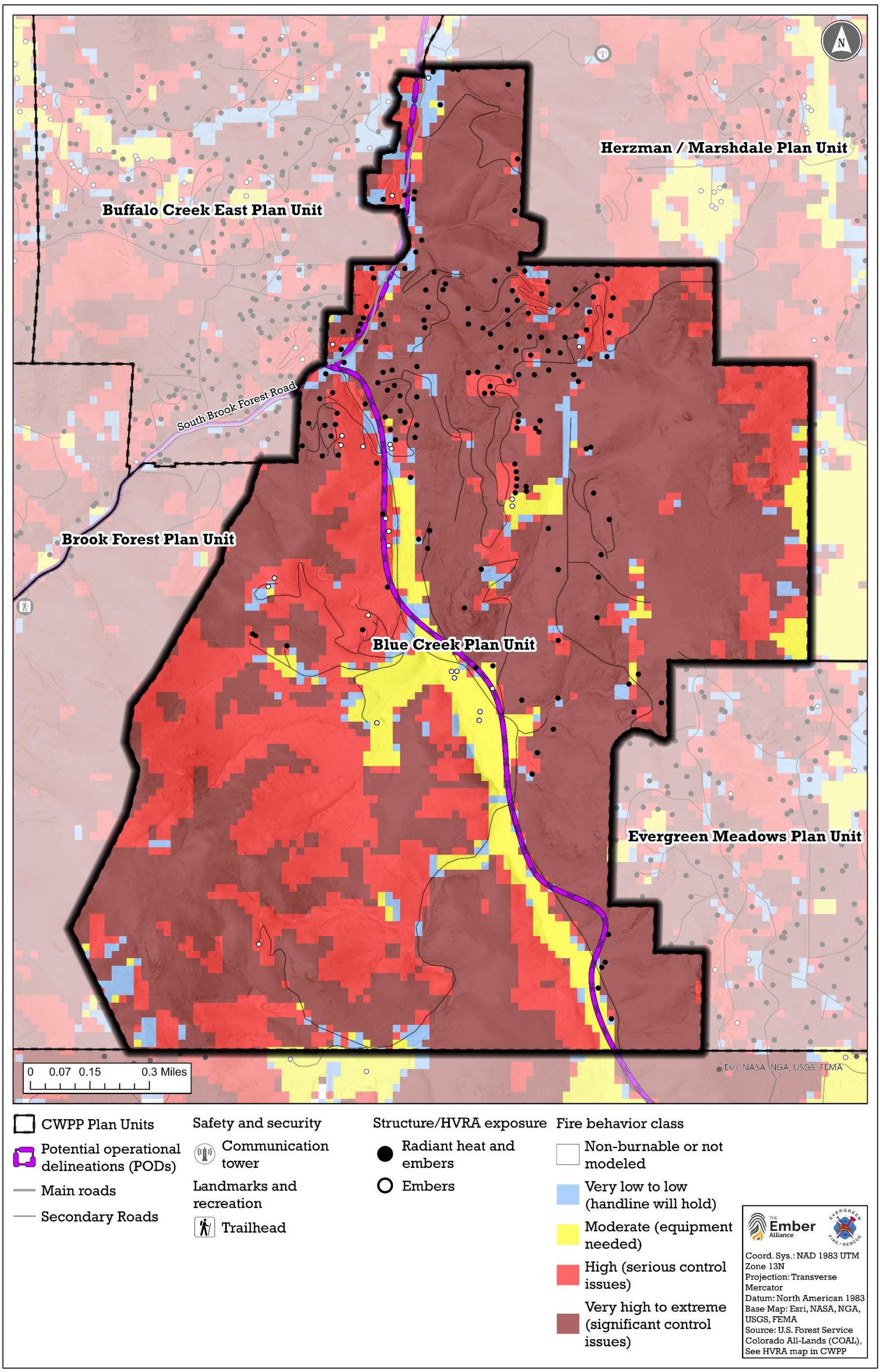
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Conduct outreach to all HOAs and increase connectivity across the plan unit.
- Explore implementation of a Community Roadside Mitigation Event and HOA Education Event to bridge collaboration across neighborhoods.

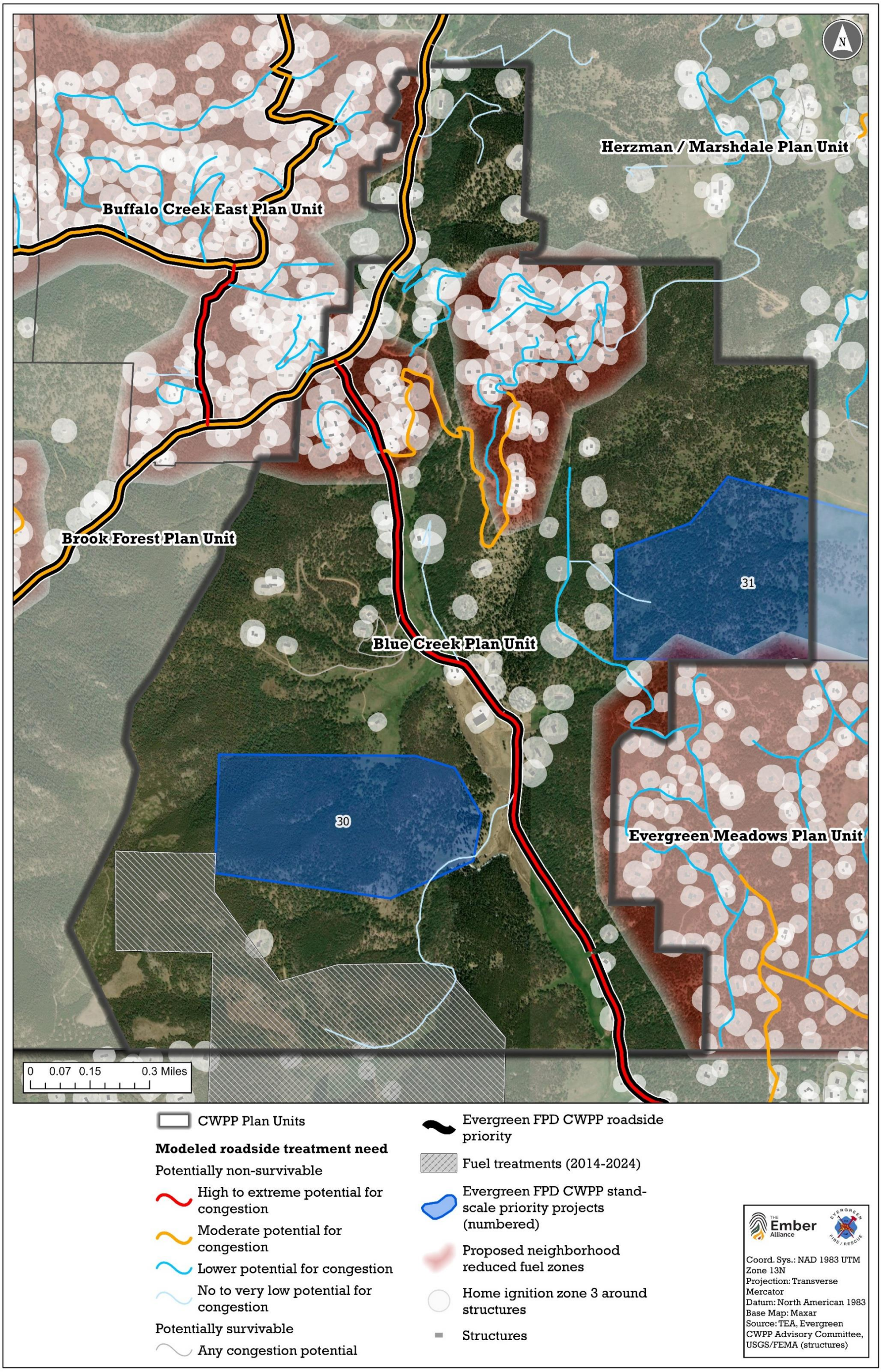
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.

- Residents living Frog Hollow need to stay apprised of evacuations in both Blue Creek and Evergreen Meadows plan units.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home but without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



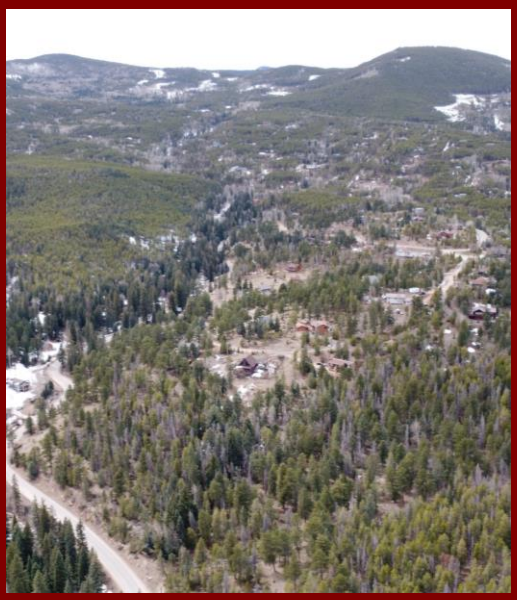
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Brook Forest

Most extreme relative risk rating



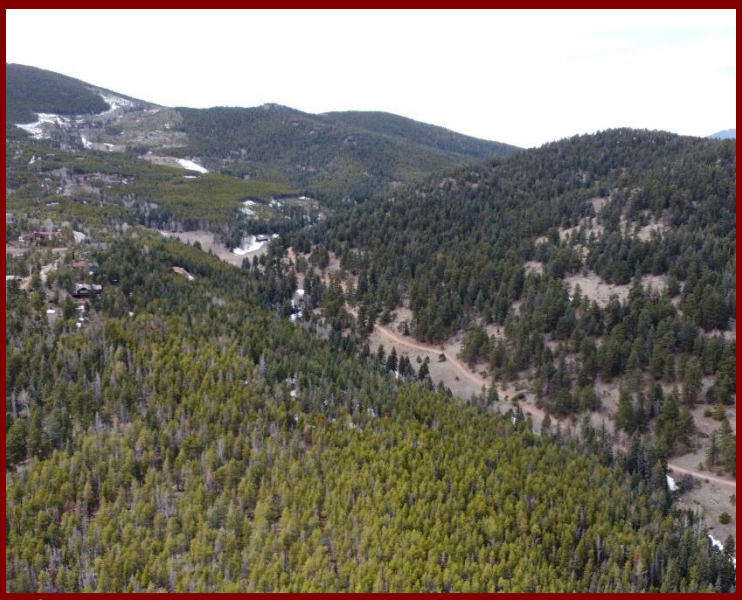


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

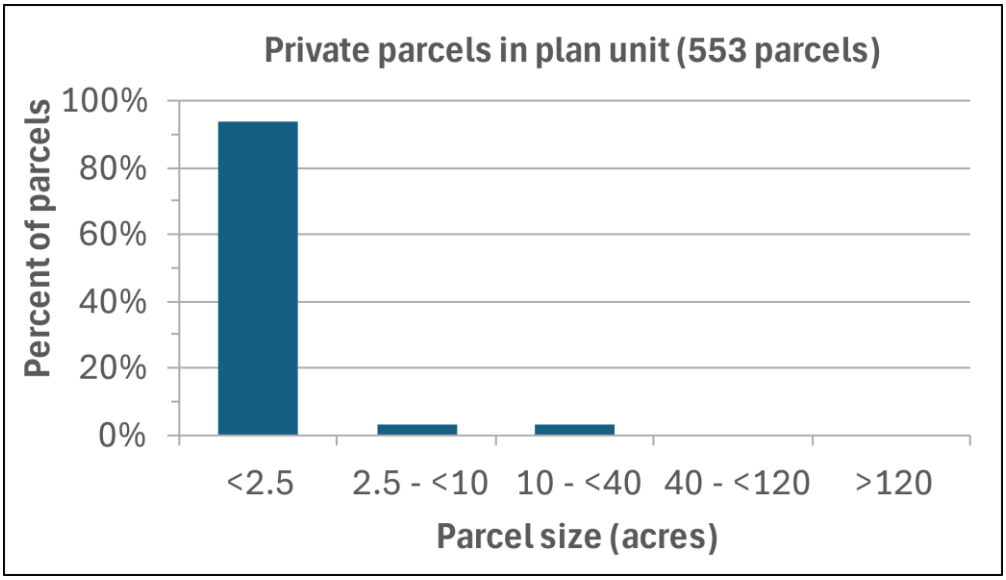
Under extreme fire weather and during a fire:

- **55%** of the area could experience very high to extreme fire behavior.
- **46%** of the area could experience moderate to high rates of fire spread.
- **82%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **100%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **high** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County & Clear Creek County

General description: A little under half of this plan unit falls on the Arapaho and Roosevelt National Forest. Based on best available data from the U.S. Geological Survey, Jefferson County, and Clear Creek County, there are 185 structures (e.g., houses, businesses, sheds, outbuildings) and 315 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres). There are several highly valued resources and assets (HVRAs) in this plan unit, including Evergreen Fire Rescue Station 8, Cub Creek Trailhead, and Maxwell Falls Trailhead (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	55%
U.S. Forest Service	45% (Arapaho and Roosevelt National Forest)
Total plan unit size: 1,931 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Almost all of the plan unit has steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense lodgepole pine forests at higher elevations and dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce at mid elevations. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

The density of homes scattered throughout the forest in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

The U.S. Forest Service has undertaken several fuel treatments on the Arapaho and Roosevelt National Forests to reduce wildfire risk by reducing tree densities and removing surface and ladder fuels. The Jefferson Conservation District and private landowners have undertaken extensive forest restoration treatments to the west of Brook Forest to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods in Brook Forest by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding,

decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Fire station	Evergreen Fire Rescue Station 8	High density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Brook Forest Inn Complex	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Stransky Ranch	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Trailhead	Cub Creek Trailhead	High density of embers from burning vegetation	Highest (75-100%)
Trailhead	Maxwell Falls Lower Trailhead	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Most roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Practically all roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and lack of alternative egress routes, as well as traffic from recreators at Maxwell Falls, could result in high levels of congestion during an emergency. There are some properties with livestock, which can increase evacuation time. Cell service is unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Black Mountain Drive	High to extreme	Second priority	Yes
South Brook Forest Road	High to extreme	Second priority	Yes
Forest Estates Road	High to extreme	Second priority	
Saint Moritz Drive	High to extreme		
Aspen Way	Moderate	Second priority	
Cedar Road	Moderate		
Stransky Road	Lower^		Yes (eastern segment of roadway)

^While Stranksy Road was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still an important roadway for mitigation in the Brook Forest Plan Unit because of its strategic importance for access to the area by firefighters and as a potential control line.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no wet hydrants available, a limited number of cisterns over 10,000 gallons, and one dip site in this plan unit. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

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The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

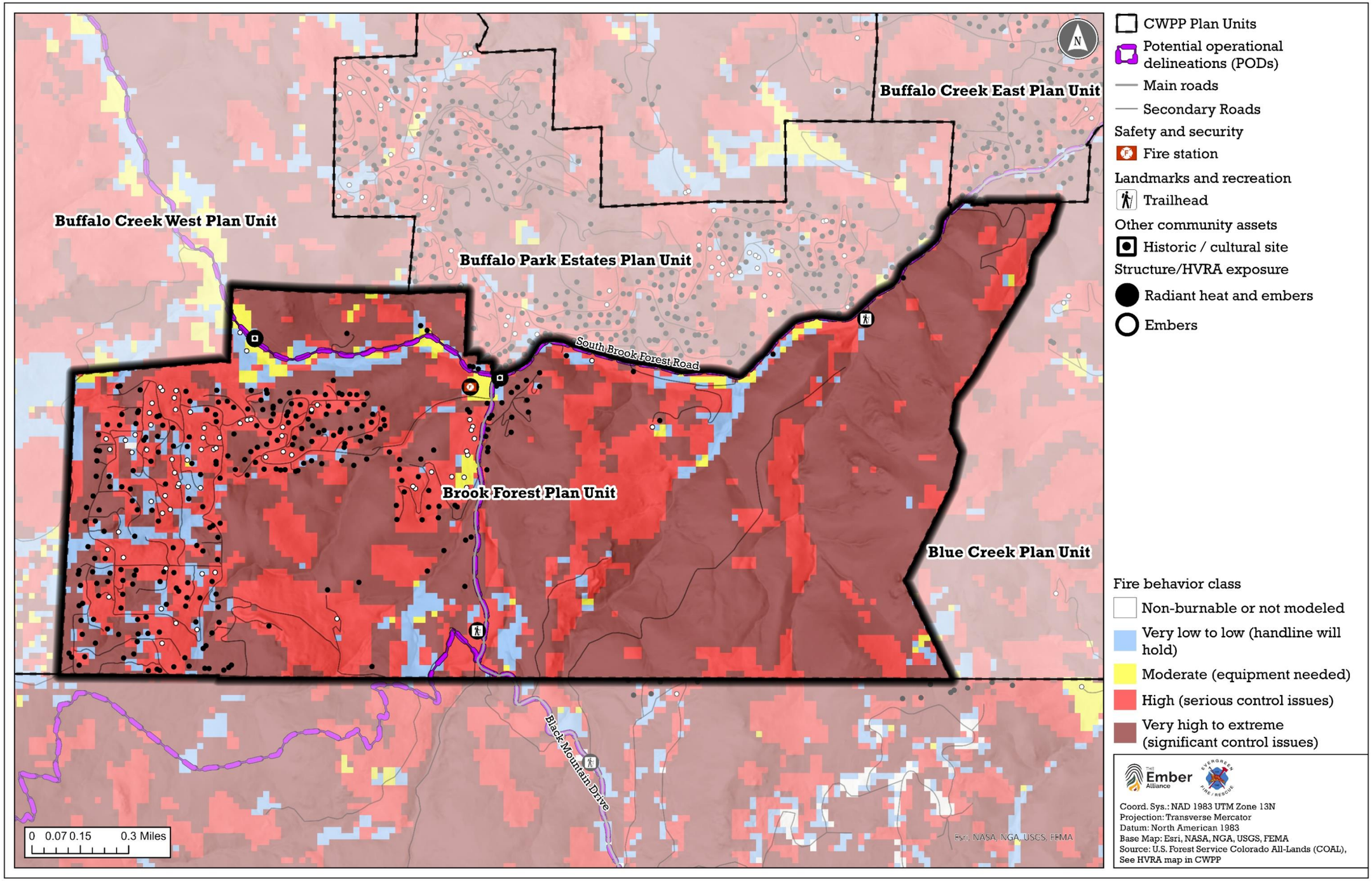
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with EFR and Jefferson County to identify a feasible secondary egress route out of the plan unit. There is currently only one primary egress route along this plan unit.
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.

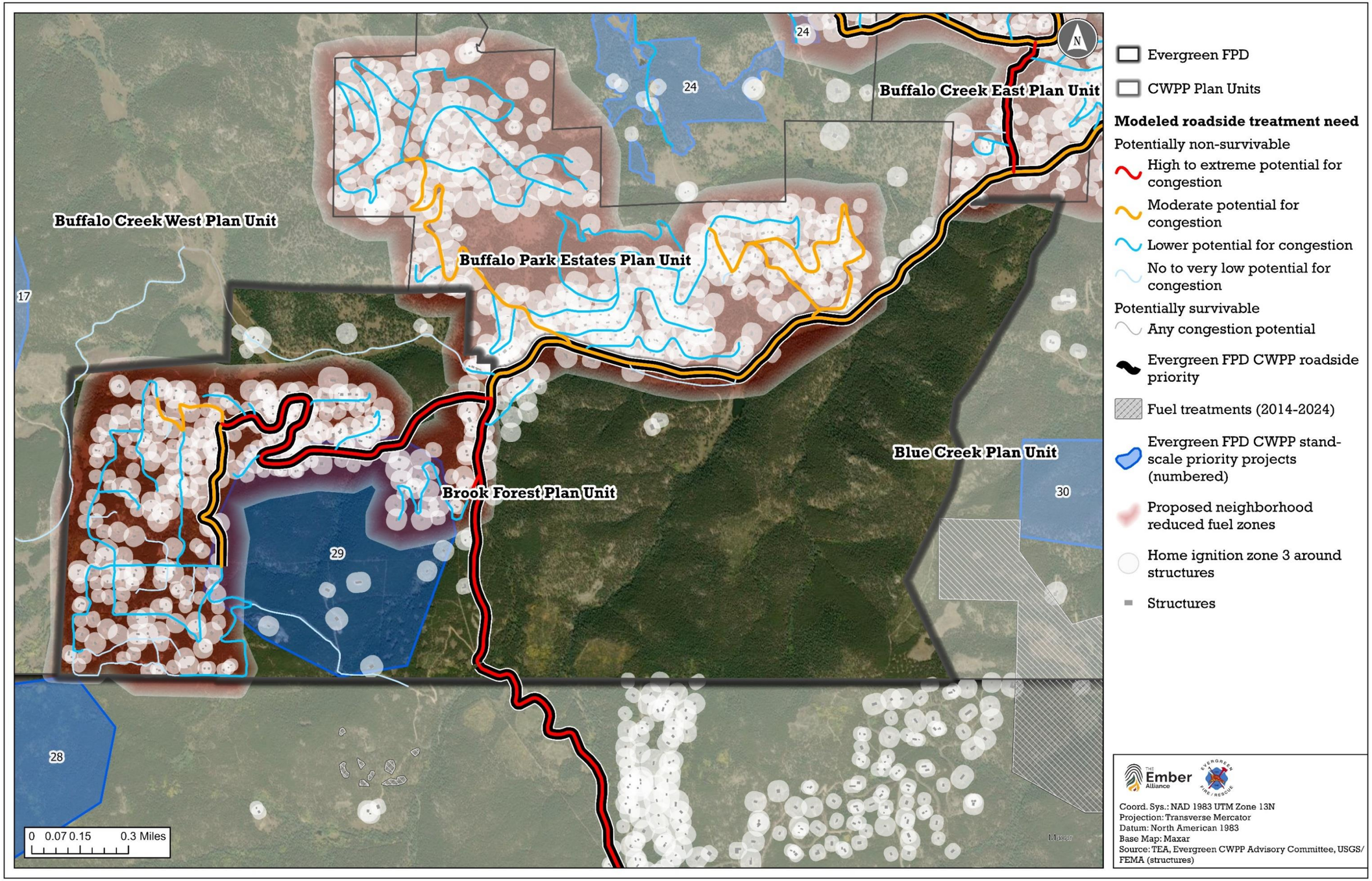
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods, especially in areas that build off of previous USFS and JCD projects.
- Evacuation awareness and preparedness critical.
- Explore implementation of a Community Roadside Mitigation Event and/or Potluck Education Event.

Recommendations for Residents

- Establish contact with your Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



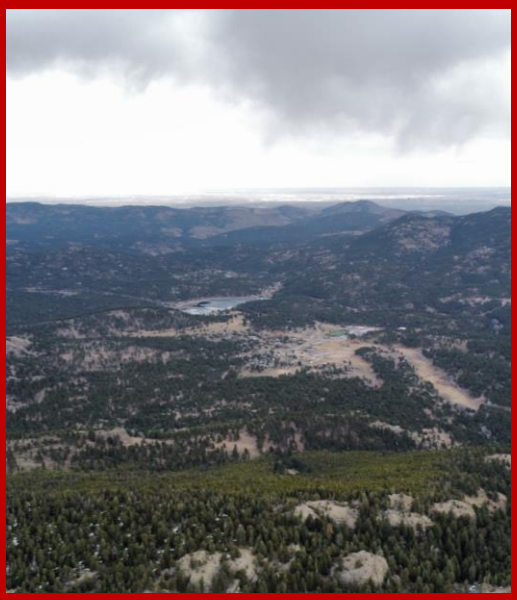
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure*** **2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Buffalo Creek East

Extreme relative risk rating



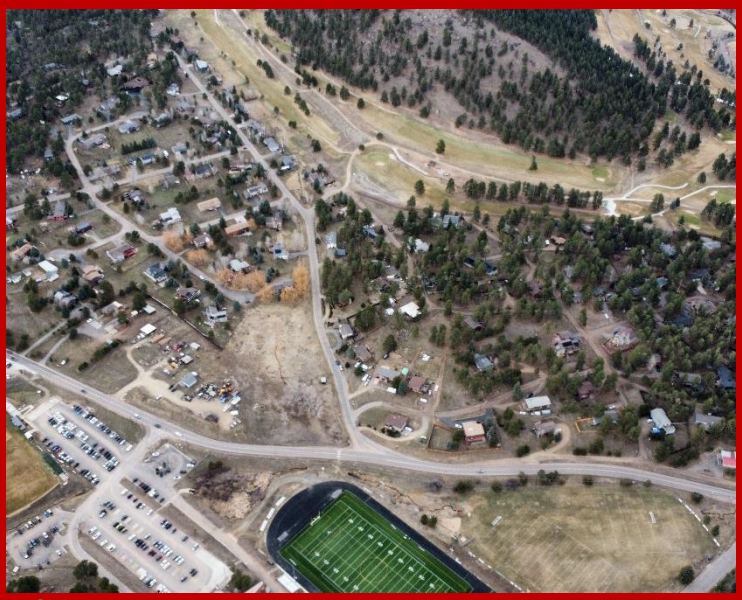


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

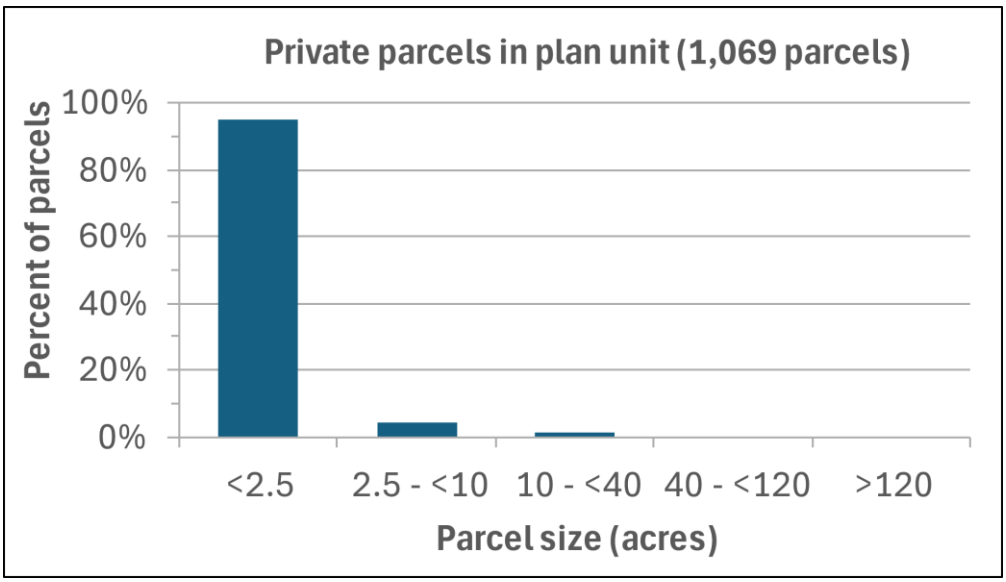
Under extreme fire weather and during a fire:

- **53%** of the area could experience very high to extreme fire behavior.
- **49%** of the area could experience moderate to high rates of fire spread.
- **78%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **82%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has the **highest** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: About half of this plan unit is private property. Public land in this plan unit are Alderfer/Three Sisters Park and Cub Creek Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 958 structures (e.g., houses, businesses, sheds, outbuildings) and 1,069 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres). There are several businesses and highly valued resources and assets (HVRAs) in this plan unit, including Wulf Recreation Center, Evergreen High School, Wilmot Elementary School, and Evergreen Fire Rescue Station 1 (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	55%
Jefferson County	39% (Alderfer/Three Sisters Park)
Denver Mountain Parks	6% (Cub Creek Park)
Total plan unit size: 2,757 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category, but potential fire behavior is variable across the plan unit. Parts of the plan unit have moderate to steep north- and northwest-facing slopes covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Other parts of the plan unit are covered in ponderosa pine forests with variable tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops.

Grasslands cover portions of Alderfer/Three Sisters Park in the western part of the plan unit. Grasslands can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, these vegetation types can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Shallow valleys and swales scattered across the plan unit have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Jefferson County Open Space has undertaken extensive forest restoration treatments on Alderfer/Three Sisters Park to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense

development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Childcare center	Wulf Recreation Center	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Fire station	Evergreen Fire Rescue Station 1	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Alderfer Ranch Complex	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Old Evergreen School	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Original Buffalo Park School - Wilmot Elementary	Low to moderate density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Wilmot Ranch House	Low to moderate density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
School	Evergreen High School	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
School	Wilmot Elementary School	Low to moderate density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from high-occupancy facilities such as Wilmont Elementary School, Evergreen High School, and Wulf Recreation Center and recreators at Alderfer/Three Sisters Park, could result in extreme levels of congestion during an emergency. The intersection of Buffalo Park Road and Highway 73 is a notable evacuation pinch point. There are some properties with livestock, which can increase evacuation time.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First priority	Yes
Buffalo Park Road	High to extreme	Second priority	Yes
Cliff Road	High to extreme	Second priority	
Columbine Road	High to extreme	Second priority	
Hatch Drive	High to extreme	Second priority	
Olive Lane	High to extreme		
South Olive Road	High to extreme		
South Brook Forest Road	Moderate	Second priority	Yes
Isenberg Lane	Moderate	Second priority	
King Drive	Moderate	Second priority	
Middleton Road	Moderate	Second priority	
Monroe Drive	Moderate	Second priority	
Snowshoe Road	Moderate	Second priority	
South Elaine Road	Moderate	Second priority	
South Merriam Drive	Moderate	Second priority	
Posy Lane	Moderate		
South Olive Lane	Moderate		
South Pine Road	Moderate		
Valley View Road	Moderate		
Woods Drive	Moderate		
South Blue Spruce Road	Lower^		Yes

^While South Blue Spruce Road was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still an important roadway for mitigation in the Buffalo Creek East Plan Unit because of its strategic value as a potential control line.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are a limited number of hydrants and cisterns in this plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. If wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Conducted work in Alderfer/Three Sisters.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

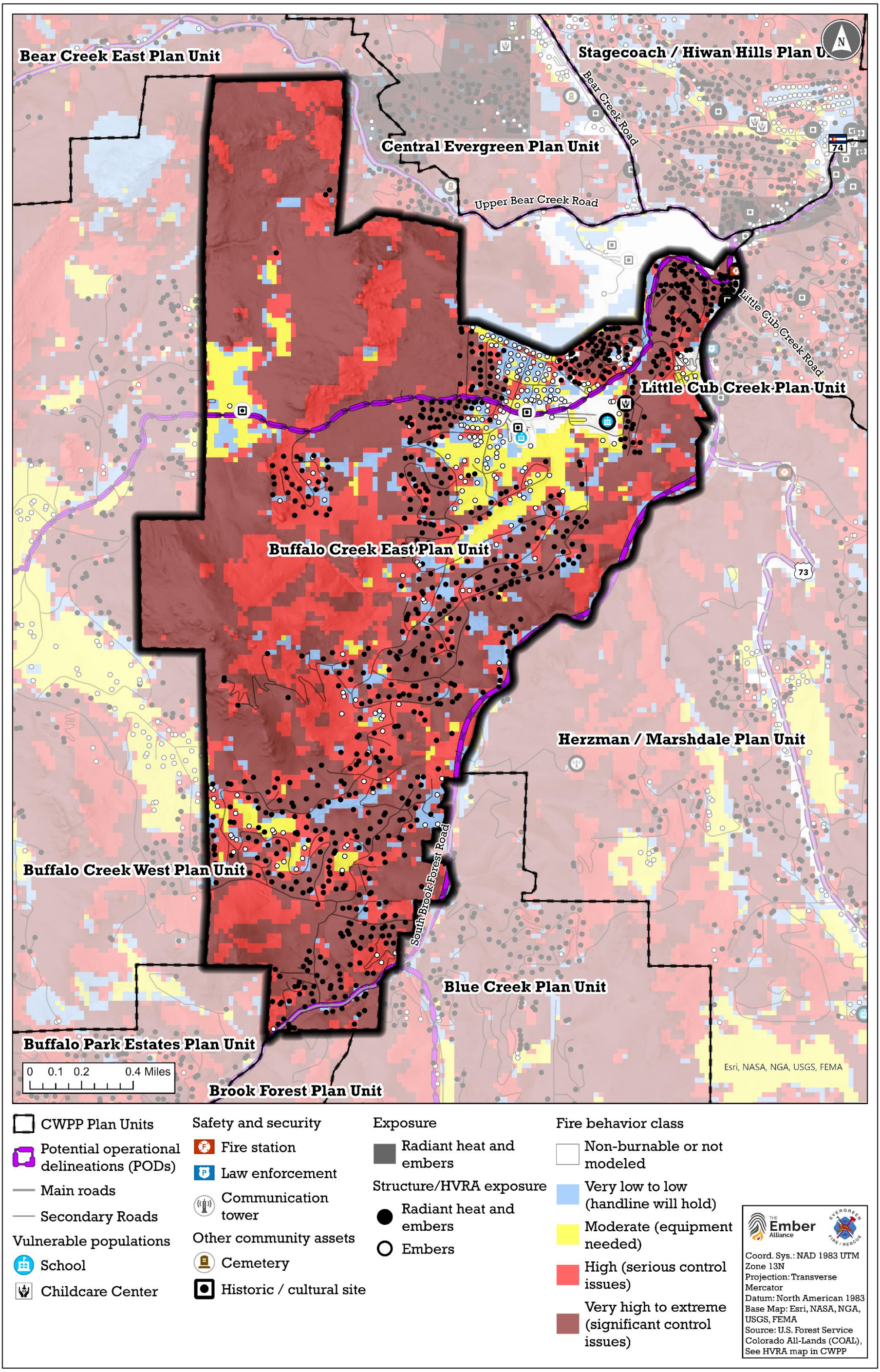
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Evacuation awareness and preparedness critical.
- Explore implementation of a Community Roadside Mitigation Event and HOA Education Event to bridge collaboration across neighborhoods.

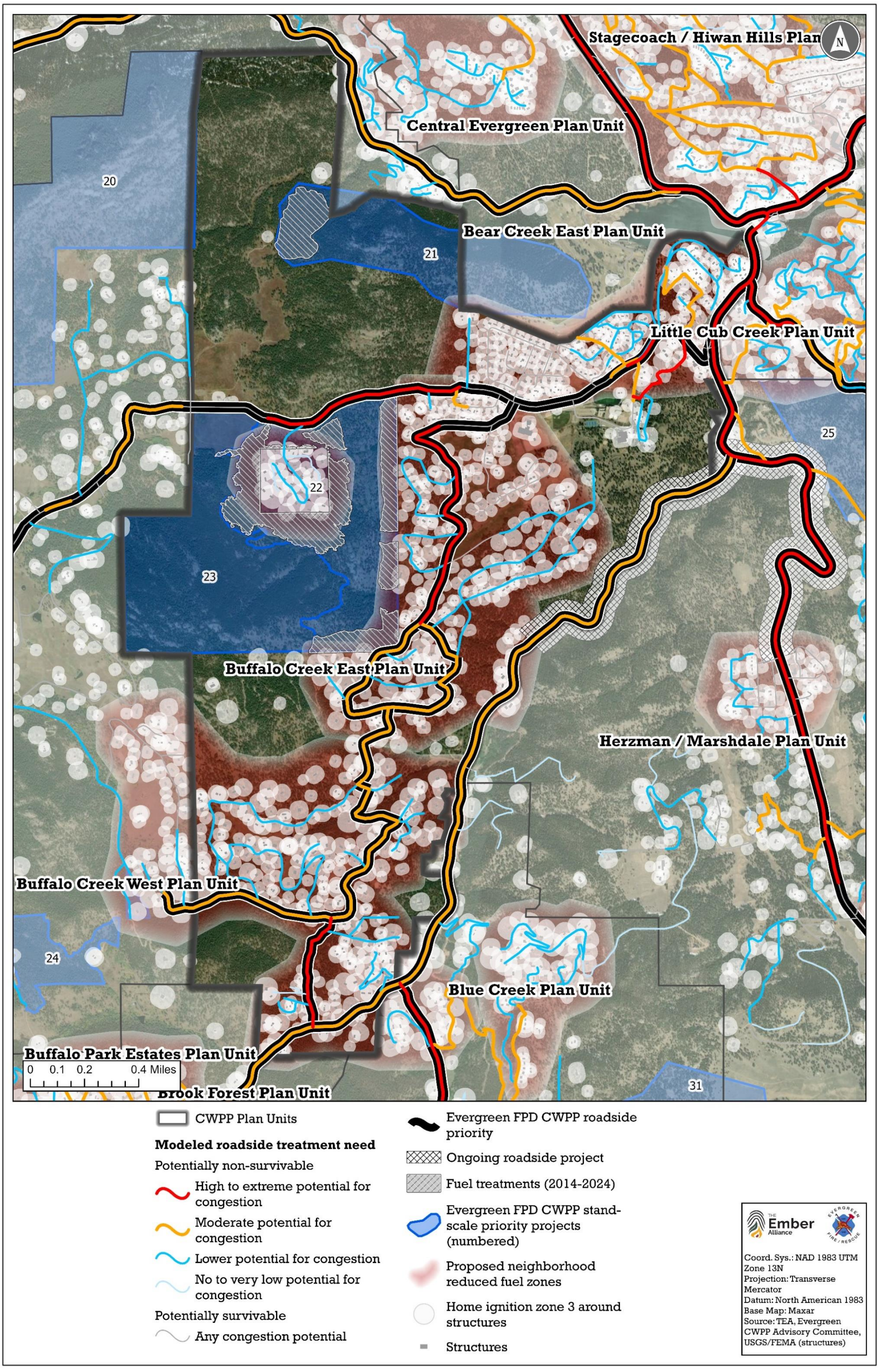
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).

- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Buffalo Creek West

Higher relative risk rating

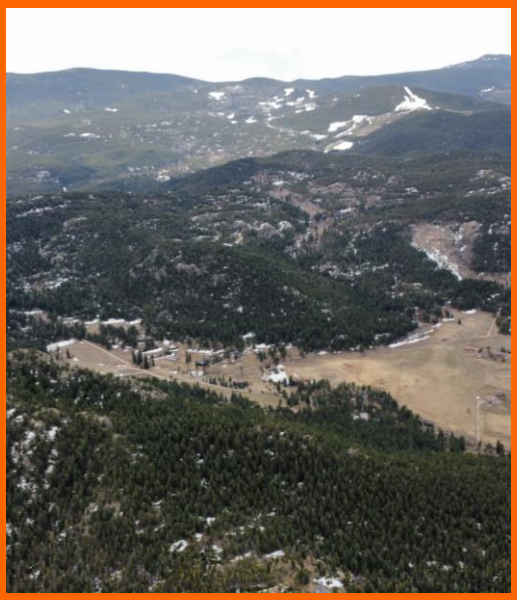


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

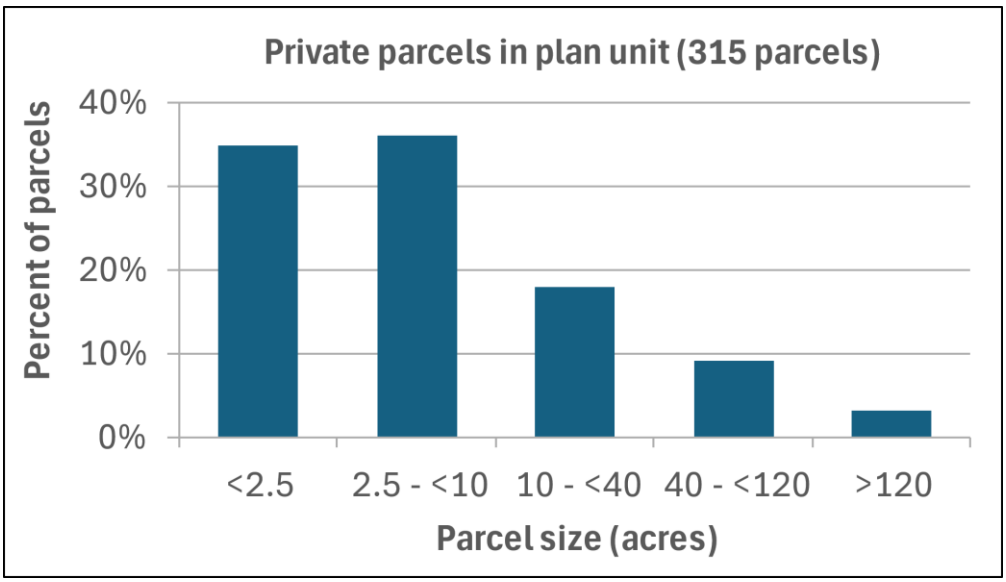
Under extreme fire weather and during a fire:

- **58%** of the area could experience very high to extreme fire behavior.
- **56%** of the area could experience moderate to high rates of fire spread.
- **71%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **61%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: About three-fourths of this large plan unit is private property. Public land in this plan unit are the Arapaho and Roosevelt National Forest and Elephant Park. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 413 structures (e.g., houses, businesses, sheds, outbuildings) and 315 private parcels (excluding rights of ways) in this plan unit. There is a mix of very small private parcels (<2.5 acres) and large private parcels (>40 acres) in this plan unit, and some properties fall within HOAs.

Landownership	Percent of plan unit
Private property	77%
U.S. Forest Service	15% (Arapaho and Roosevelt National Forest)
Denver Mountain Parks	8% (Elephant Butte)
Total plan unit size: 7,594 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme, but potential fire behavior is highly variable across the plan unit. Much of the plan unit has steep slopes covered in dense conifer forests. Lodgepole pine and spruce-fir forests dominate the higher elevations, and mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce occur at mid elevations. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Dense spruce-fir forests with abundant ladder fuels at the highest elevations in the southwestern portion of this plan unit are cooler and have higher soil moisture. These forests have a lower likelihood of burning under moderate fire weather conditions. However, after prolonged drought and under hot, windy conditions, active crown fires can proliferate through these forests.

Some drier, south-facing slopes in this plan unit support lower-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

The Jefferson Conservation District and private landowners in the southern part of this plan unit have undertaken extensive forest restoration treatments to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods in the Brook Forest plan unit by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Flat areas along Buffalo Creek are covered in riparian vegetation, grasslands, and shrublands. Riparian vegetation such as willows, sedges, and cottonwood tend to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

Grasslands and shrublands can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Under hot, dry, and windy conditions, grasslands and shrublands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the

regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "high" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, wooden sheds, barns, or accessory dwelling units. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are many accessory dwelling units, barns, and outbuildings in this plan unit, and if hazards are not mitigated around these structures, they can pose a risk to nearby primary structures if they ignite during a wildfire.

This plan unit includes the Broce Pony Ranch that could be exposed to low to moderate density of embers from burning vegetation and/or nearby burning structures. On-the-ground assessments of this property can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Historic / cultural site	Broce Pony Ranch	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and lack of alternative egress routes, as well as traffic from recreators at Alderfer/Three Sisters Park, could result in extreme levels of congestion during an emergency. There are many properties with livestock, which can increase evacuation time. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Buffalo Park Road	Moderate	Second priority	Yes
Snowshoe Road	Moderate	Second priority	

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. Hydrants are limited to the eastern side of the plan unit, and there are less than three dip sites and one reported cistern over 10,000 gallons across the plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Participated in forest clearing by public agencies, especially in Alderfer Park along Buffalo Park Road.

- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

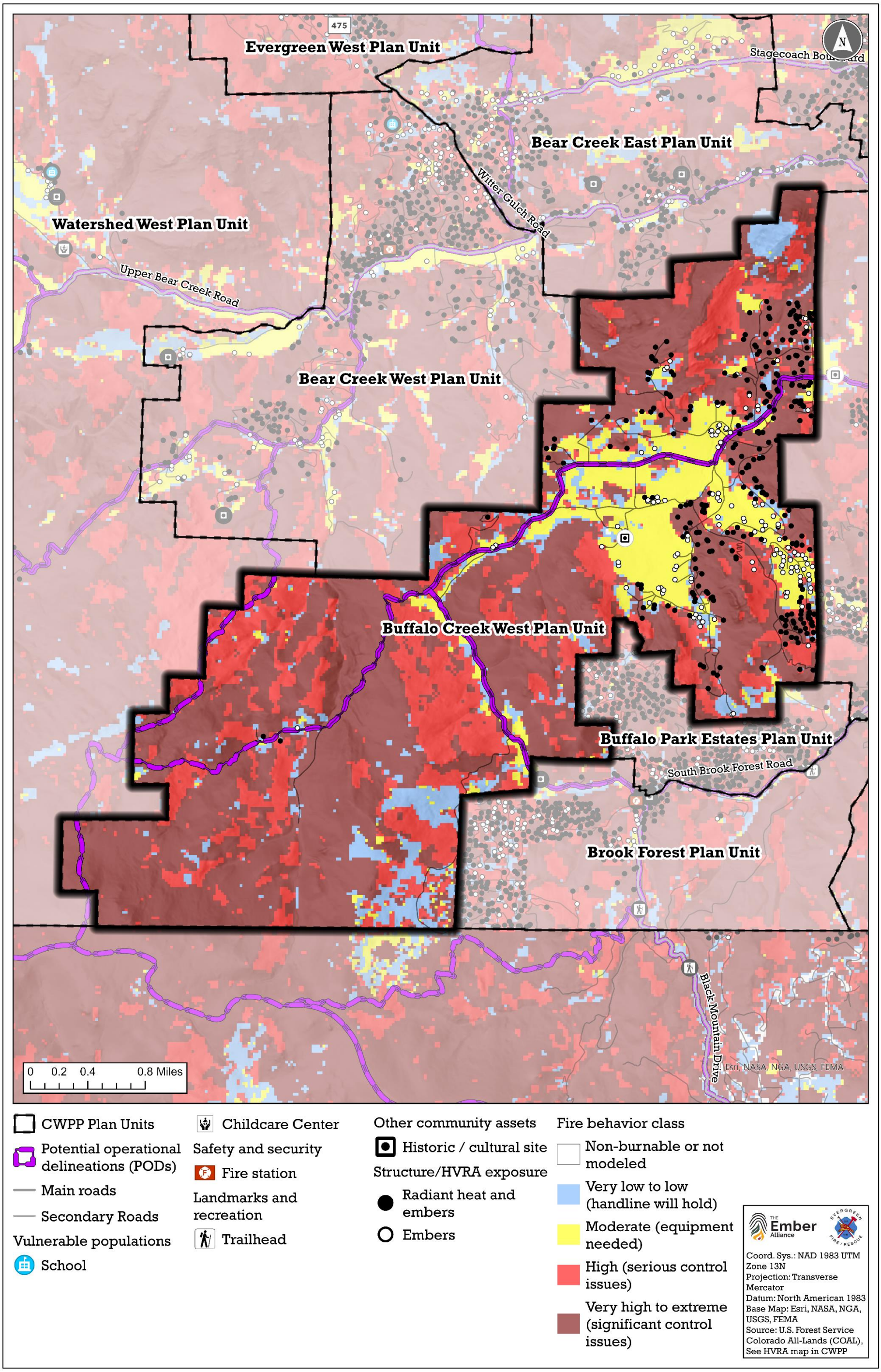
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Evacuation preparation with additional goal of evacuation of large livestock.
- Coordinate with CSFS and USFS for large scale treatments.
- Partner with neighboring plan units in developing Mitigation and Education Events.

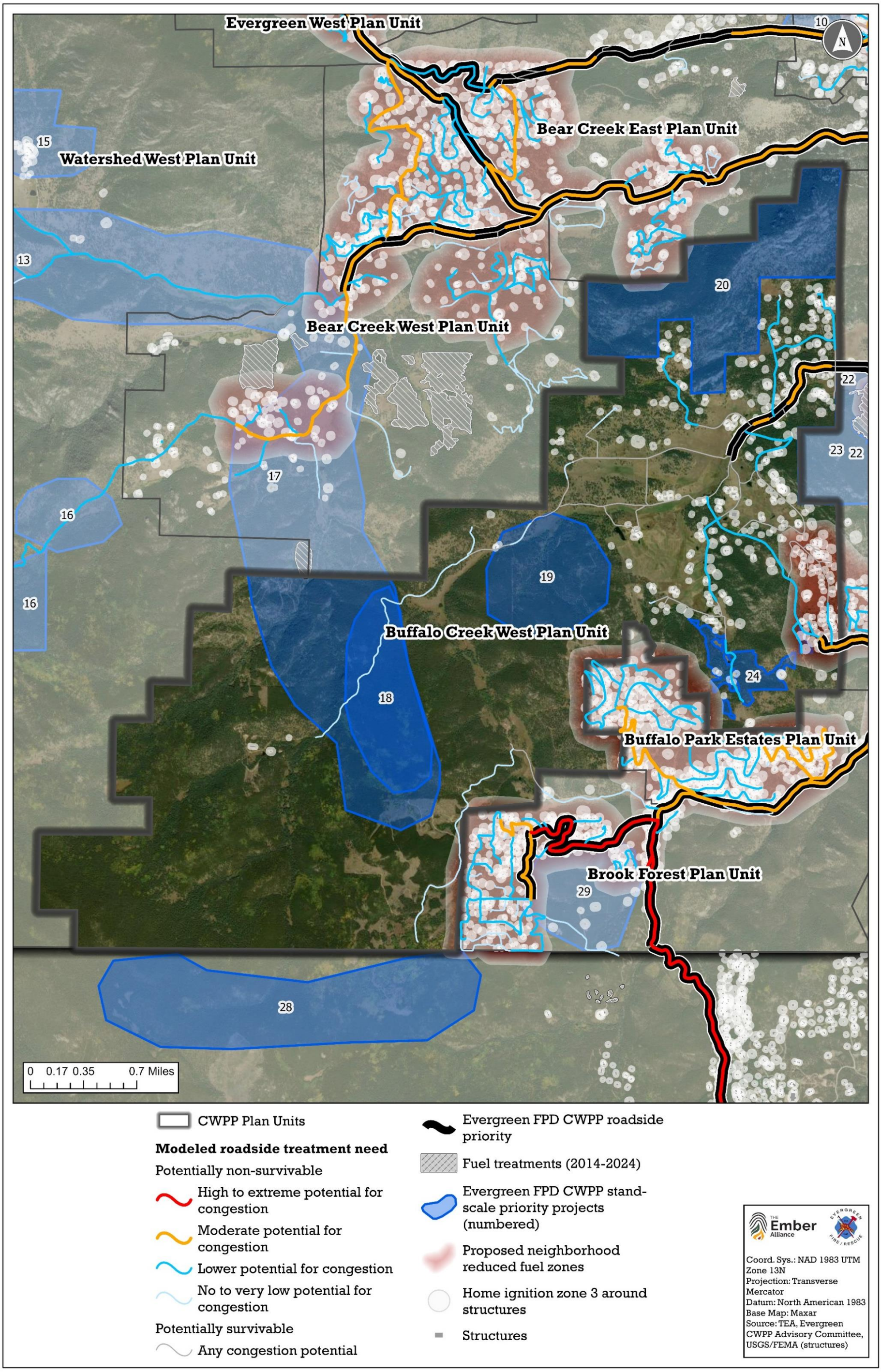
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.

- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Buffalo Park Estates

Most extreme relative risk rating

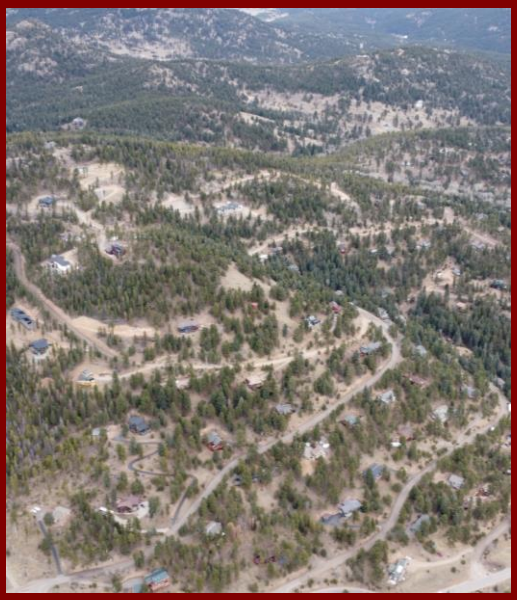


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

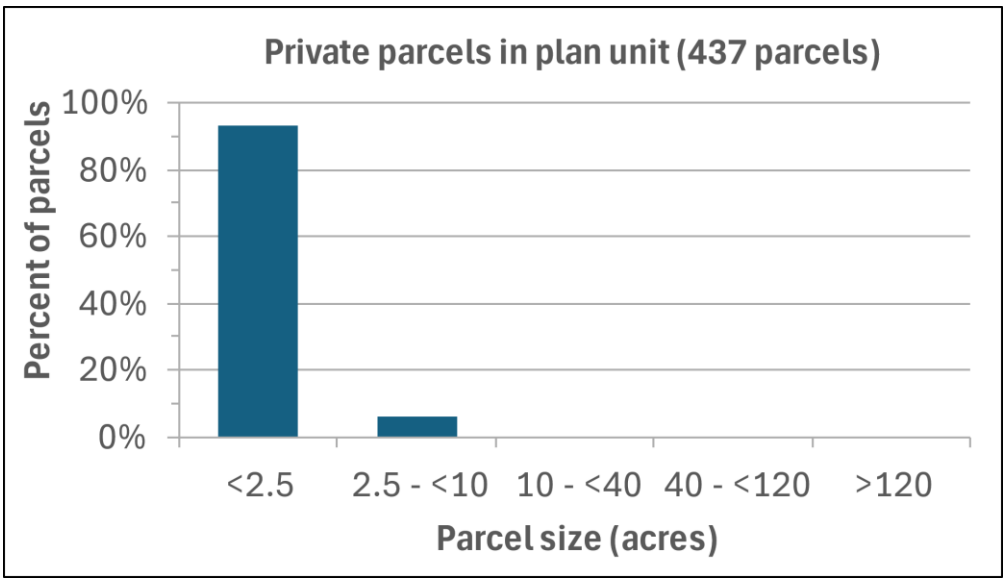
Under extreme fire weather and during a fire:

- **49%** of the area could experience very high to extreme fire behavior.
- **51%** of the area could experience moderate to high rates of fire spread.
- **90%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **100%** of roadways have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **moderate** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: All of this small plan unit is private property. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 414 structures (e.g., houses, businesses, sheds, outbuildings) and 437 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres) and the rest are small (<10 acres).

Landownership	Percent of plan unit
Private property	100%
Total plan unit size: 772 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Much of the plan unit has moderate to steep slopes covered in dense lodgepole pine forests, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce, and ponderosa pine forests. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Other parts of the plan unit have ponderosa pine forests with low to moderate tree densities and scattered aspen. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops.

The density of homes scattered throughout the forest in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can

have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Practically all roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and lack of alternative egress routes, as well as traffic from recreators at Maxwell Falls, could result in extreme levels of congestion during an emergency. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
South Brook Forest Road	Moderate	Second priority	Yes
Aspen Meadow Drive	Moderate		
Blue Spruce Lane	Moderate		
Brook Forest Drive	Moderate		
Ponderosa Way	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no hydrants or cisterns located in this plan unit. However, there are two cisterns south of the plan unit at Evergreen Station 8 and 7936 Brook Forest Road. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Organized annual slash chipping weekend(s) averaging 36 properties per year.
- Conducted five weekend mitigation projects.
- Held two plan unit and one working group multi-agency informational meetings at Fire Station 8.
- 121 defensible space inspections conducted, obtaining contact information for 79% of homeowners.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high

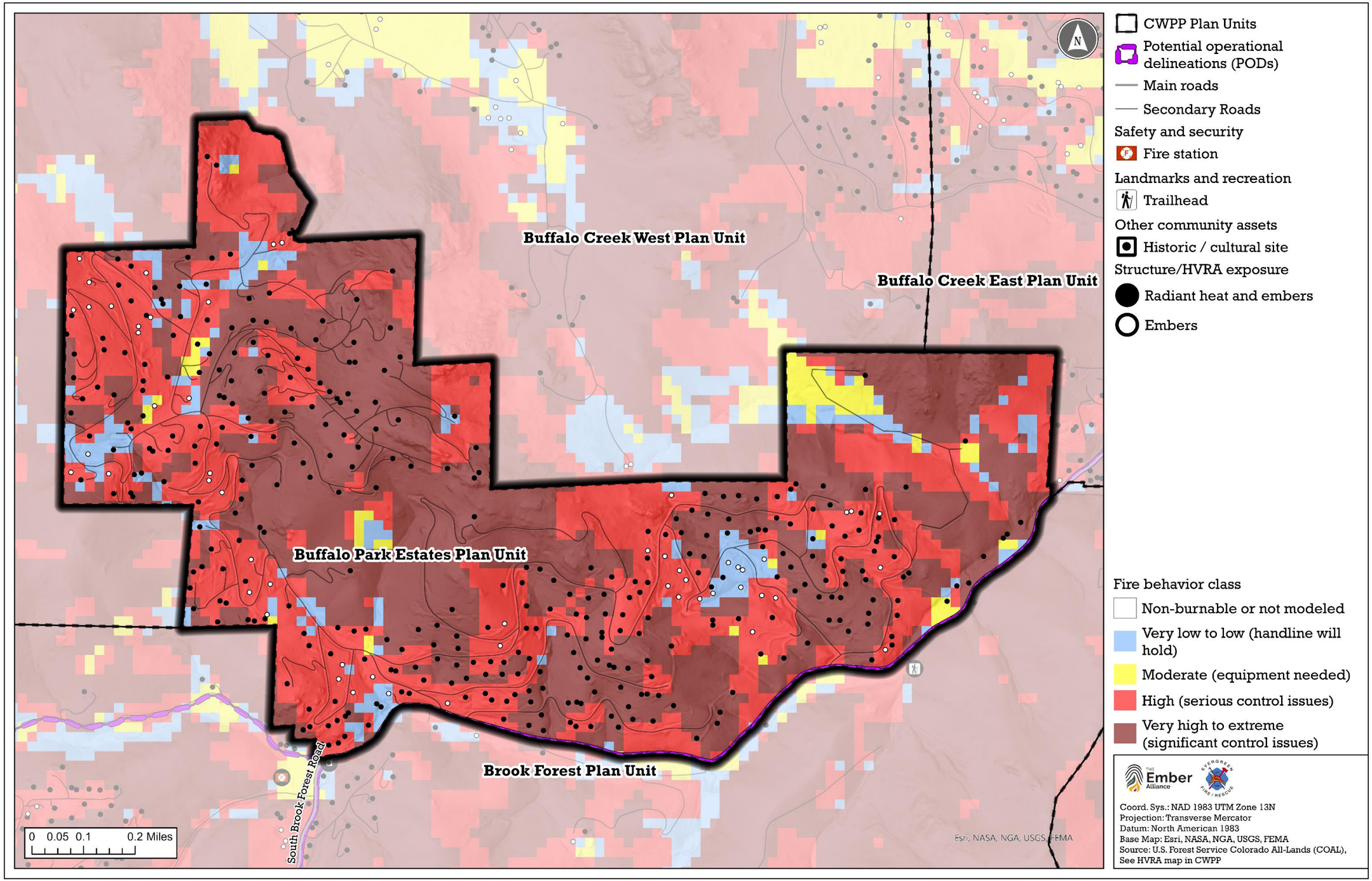
potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).

- Work with EFR and Jefferson County to identify a feasible secondary egress route out of the plan unit. There is currently only one primary egress route along this plan unit.
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and strategic communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Evacuation awareness and preparedness is critical in this plan unit.
- Continue focused Neighborhood Roadside Mitigation Event and Community Education Events.

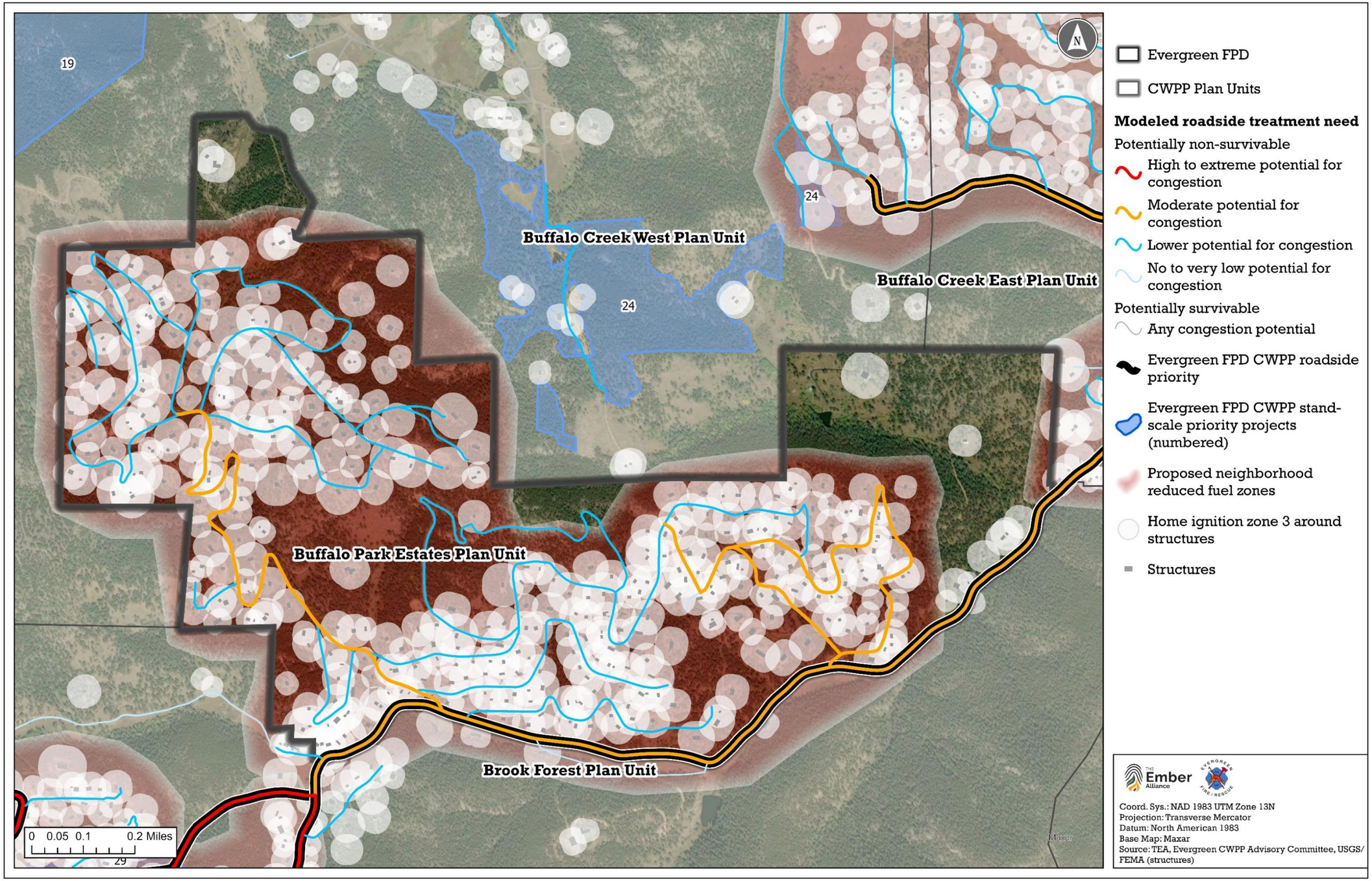
Recommendations for Residents

- Establish contact with your Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1)

working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



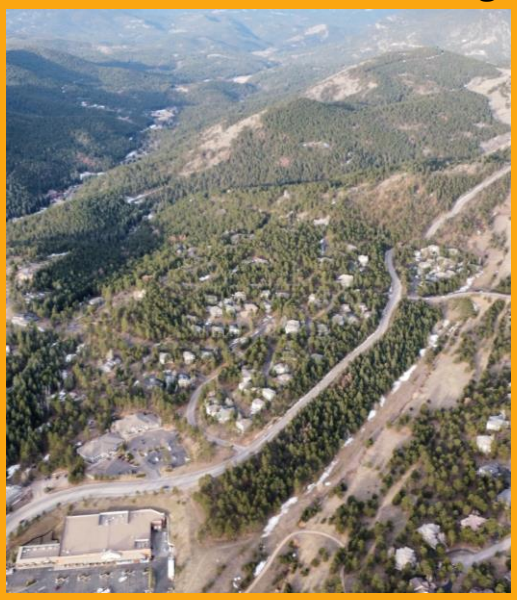
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Central Evergreen

High relative risk rating



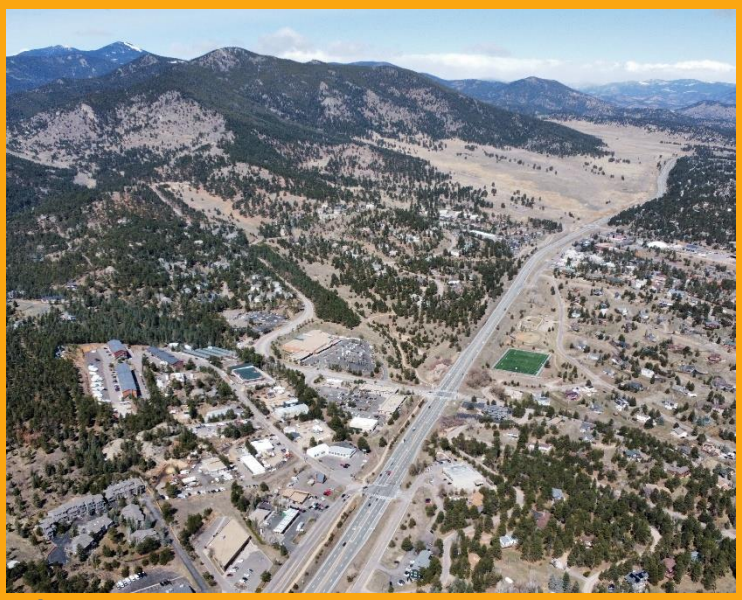


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

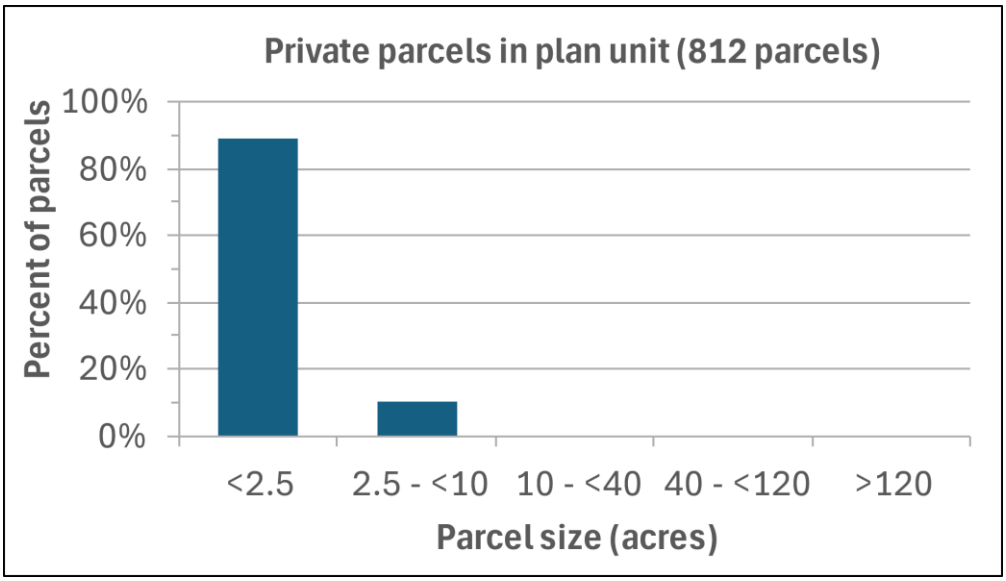
Under extreme fire weather and during a fire:

- **35%** of the area could experience very high to extreme fire behavior.
- **54%** of the area could experience moderate to high rates of fire spread.
- **45%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **65%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **high** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost two-thirds of this plan unit is public land, including Elk Meadow Park, Bergen Peak, Dedisse Park, and Bergen Peak State Wildlife Area. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 443 structures (e.g., houses, businesses, sheds, outbuildings) and 812 private parcels (excluding rights of ways) in this plan unit. Most private parcels are very small (<2.5 acres) and the rest are small (<10 acres). Some properties fall within HOAs. There is an extensive commercial district in this plan unit, as well as several highly valued resources and assets (HVRAs) in this plan unit, including the Evergreen Post Office, Montessori School of Evergreen, and Rocky Mountain Academy of Evergreen (see below for a table with HVRAs).

Landownership	Percent of plan unit
Jefferson County	44% (Elk Meadow Park)
Private property	33%
Denver Mountain Parks	22% (Bergen Peak and Dedisse Park)
Colorado Parks & Wildlife	2% (Bergen Peak State Wildlife Area)
Total plan unit size: 2,999 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "high" relative risk category, but potential fire behavior is variable across this plan unit. The western portion of the plan unit has moderate to steep slopes covered in dense lodgepole pine, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce, or ponderosa pine forests with variable densities. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslopes. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Low- to moderate-density ponderosa pine forests in parts of the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and can support active crown fires.

The density of homes interspersed with forests in the southern part of this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

The eastern portion of the plan unit is covered in grasslands. Under hot, dry, and windy conditions, grasslands can fuel fast-moving wildfires with long flame lengths. Fast-moving wildfires could outpace the suppression capabilities of initial firefighters arriving on scene, and radiant heat from intense grassfires could ignite nearby structures and threaten the safety of wildland firefighters.

Thinning and prescribed burns conducted by Jefferson County Open Space on Elk Meadows Park reduced tree densities, removed ladder and surface fuels, and improved habitat for some wildlife and plant species. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some

homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-home ignitions. There is an extreme potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Some homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are numerous multi-unit properties in this plan unit, so coordination among owners and/or the property management organization is crucial to accomplish home hardening and fuel removal around these structures. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Assisted living / adult care	Augustana Elk Run Assisted Living	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Assisted living / adult care	Life Care Center of Evergreen	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Assisted living / adult care	Mt Evans Home Health Care & Hospice	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Cemetery	Evergreen Cemetery	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Childcare center	Montessori School of Evergreen	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Childcare center	The Learning Center Preschool of Evergreen	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Communication tower	Bergen Peak	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

Historic / cultural site	Barn in Elk Meadow	Low to moderate density of embers from burning vegetation	High (50-<75%)
Historic / cultural site	Bear Creek Cemetery	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Historic huts built by the CCC on Dedisse	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Medical	Jefferson Center for Mental Health	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Post office	Evergreen Post Office	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
School	Montessori School of Evergreen	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
School	Rocky Mountain Academy of Evergreen	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic, and some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from businesses and recreators at Elk Meadow Park, Evergreen Lake, and the Evergreen Golf Course, could result in extreme levels of congestion during an emergency.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	**Potential evacuation congestion**	**Evergreen FPD CWPP priority roadway**	**Potential control line / POD boundary**
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Stagecoach Boulevard	Moderate	Second priority	Yes
Upper Bear Creek Road	Moderate	Second priority	Yes
Troutdale Scenic Drive	Moderate		
Overlook Trail	Moderate		
Bergen Peak Drive	Moderate		
Elk View Drive	Moderate		
Tanoa Road	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. If wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in

this plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. Poor road access is particularly notable in the Woods and Troutdale areas.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased engagement with EFR.
- Documented fire mitigation activities.
- Provided education to the community.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

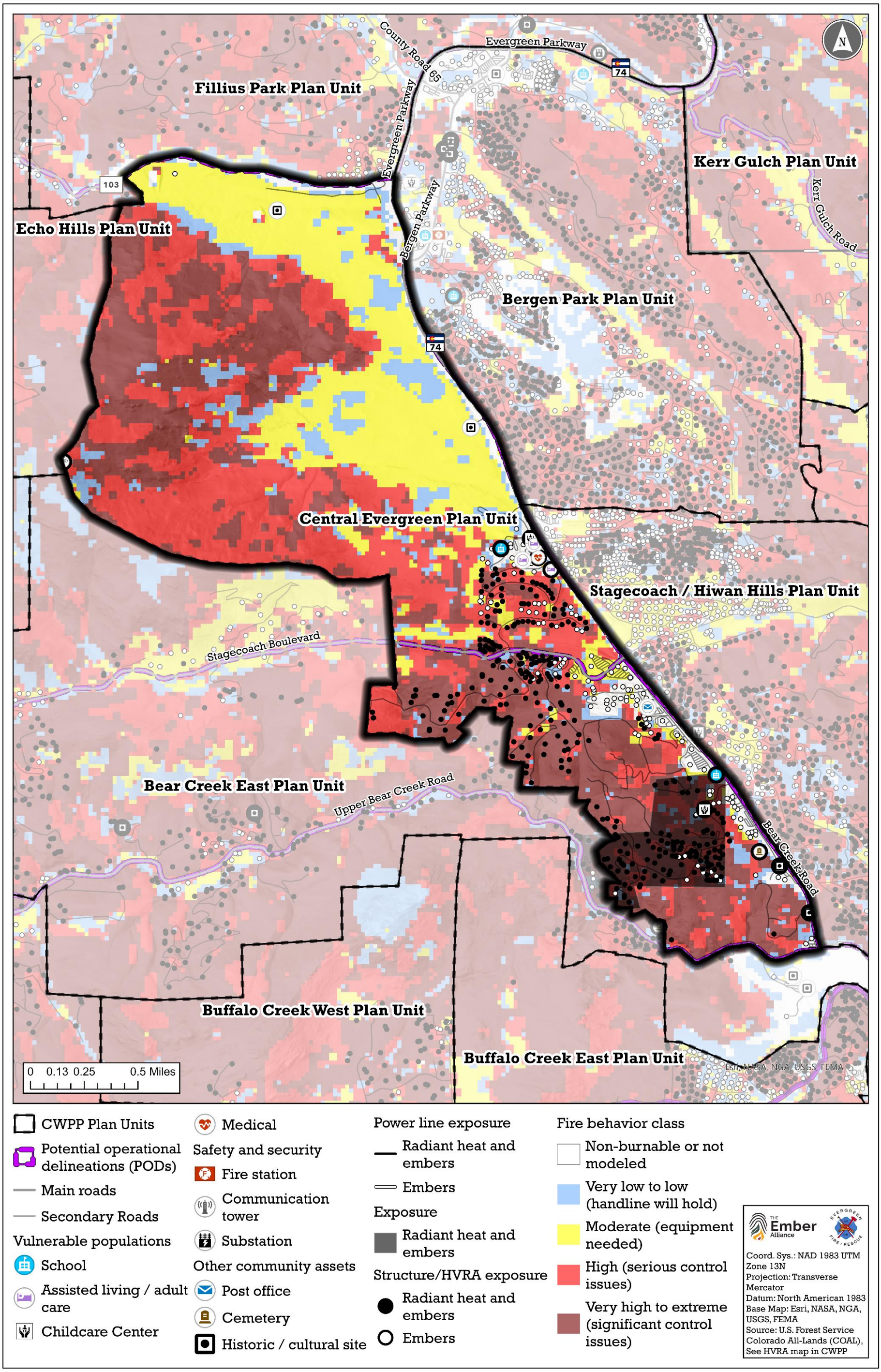
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- Work with all of the HOAs across the plan unit, especially around coordinating open space treatments.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit, with coordination through HOAs.
- Continued HOA coordination and communication.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods and coordinate with HOAs that have open space for additional opportunities.
- Conduct strategic HOA work on community and shared properties.
- Focus on roadside mitigation along Stagecoach and Troutdale Scenic Drive.
- Continue focused Neighborhood Roadside Mitigation Event and Community Education Events.

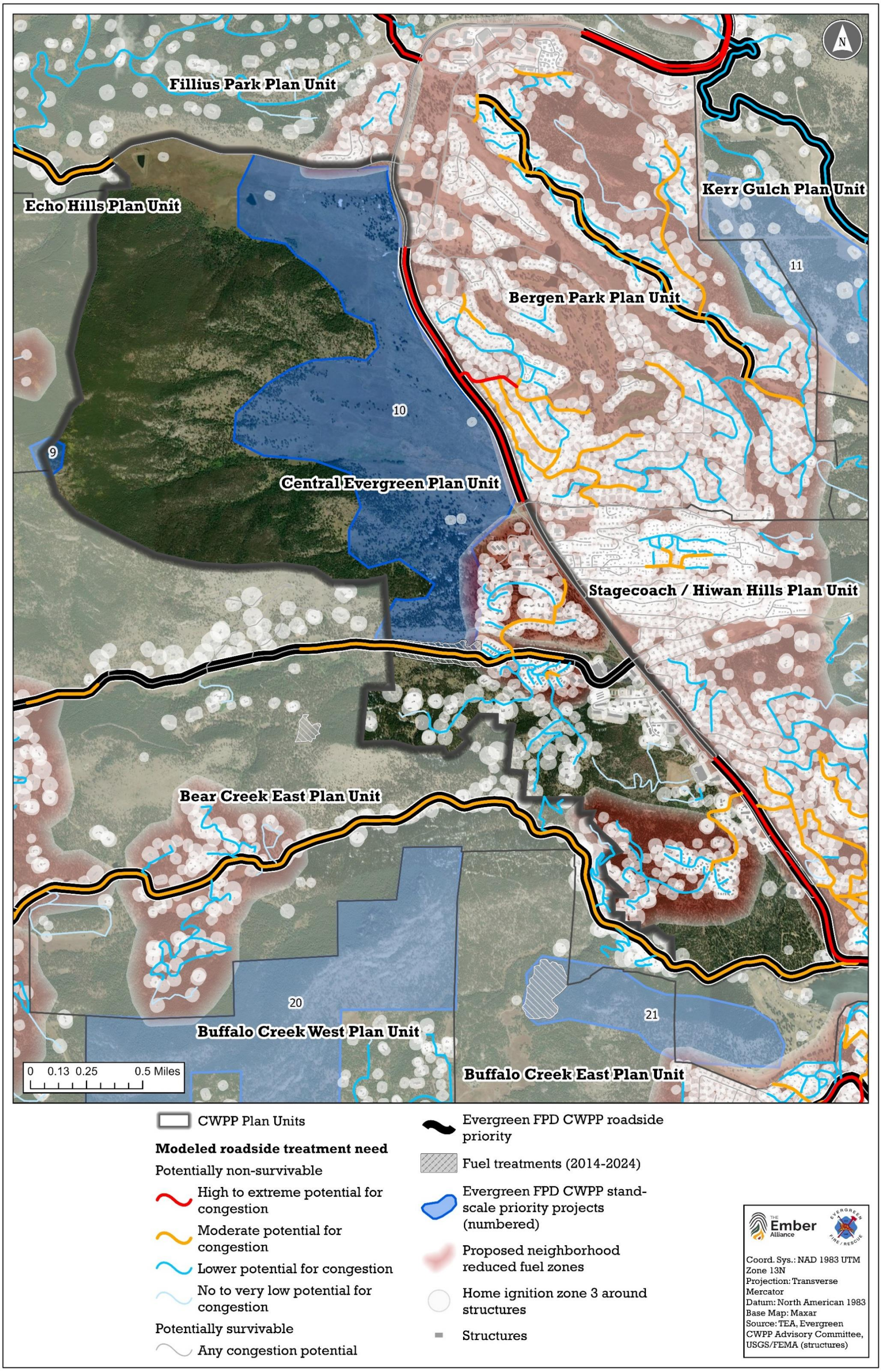
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Danks Drive

Higher relative risk rating

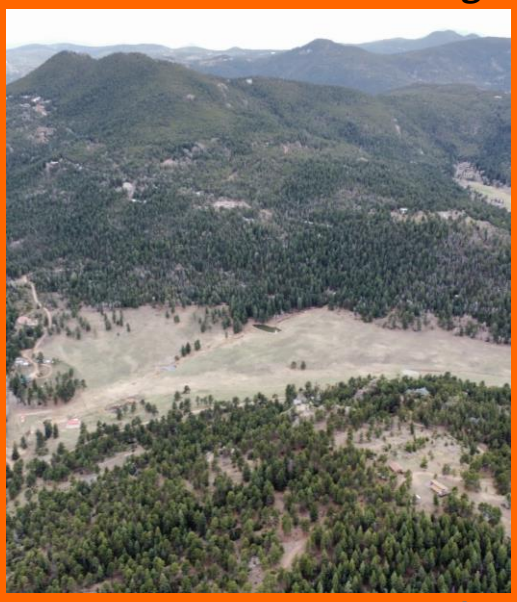


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

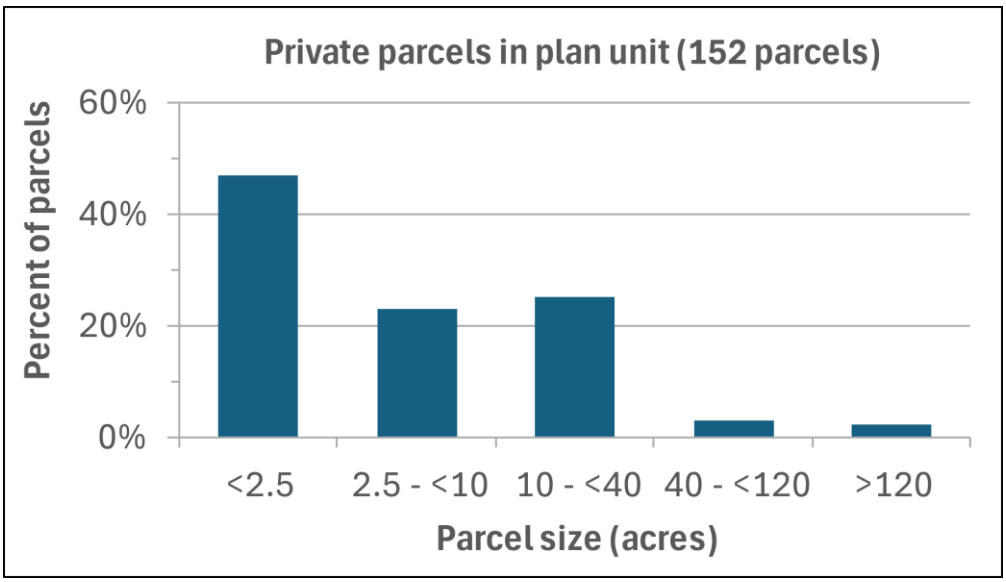
Under extreme fire weather and during a fire:

- **49%** of the area could experience very high to extreme fire behavior.
- **52%** of the area could experience moderate to high rates of fire spread.
- **76%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **73%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all of this plan unit is private property (98%). Public land in this plan unit is North Turkey Creek managed by Denver Mountain Parks. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 135 structures (e.g., houses, businesses, sheds, outbuildings) and 152 private parcels (excluding rights of ways) in this plan unit. There is a mix of small private parcels (<10 acres) and medium-sized private parcels (10 - <40 acres) in this plan unit, plus a couple of large parcels (>40 acres).

Landownership	Percent of plan unit
Private property	98%
Denver Mountain Parks	2% (North Turkey Creek)
Total plan unit size: 2,096 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category, but potential fire behavior is variable across the plan unit. About a third of the plan unit has steep north- and northwest-facing slopes covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Another third of the plan unit is covered in ponderosa pine forests with variable densities. Some forests on drier, south-facing slopes support low- to moderate- tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

About a third of the plan unit is relatively flat and covered in grasslands, shrublands, or riparian vegetation. Grasslands and shrublands can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, these vegetation types can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Riparian vegetation along North Turkey Creek and the shallow valley that parallels Danks Drive have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks, Jefferson Conservation District, and private landowners have undertaken forest restoration treatments in this plan unit to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "high" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. There is a high potential for home-to-home ignitions in the Marschner neighborhood with its higher density of homes. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit.

This plan unit includes the Evergreen Memorial Park Cemetery that could be exposed to radiant heat and a high density of embers from burning vegetation and/or nearby burning structures. On-the-ground assessments of this property can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Cemetery	Evergreen Memorial Park Cemetery	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in some congestion during an emergency. There are some properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First or second priority (depending on section)	Yes
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no hydrants and no known cisterns over 10,000 gallons in this plan unit; however, there are four dip sites. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes

them less accessible to firefighters. The higher density of homes in the Marschner neighborhood could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased mitigation information to residents.
- Hosted neighborhood slash events.
- Hosted neighborhood mitigation events.
- SFA Grant included DMP and JCD treatments.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

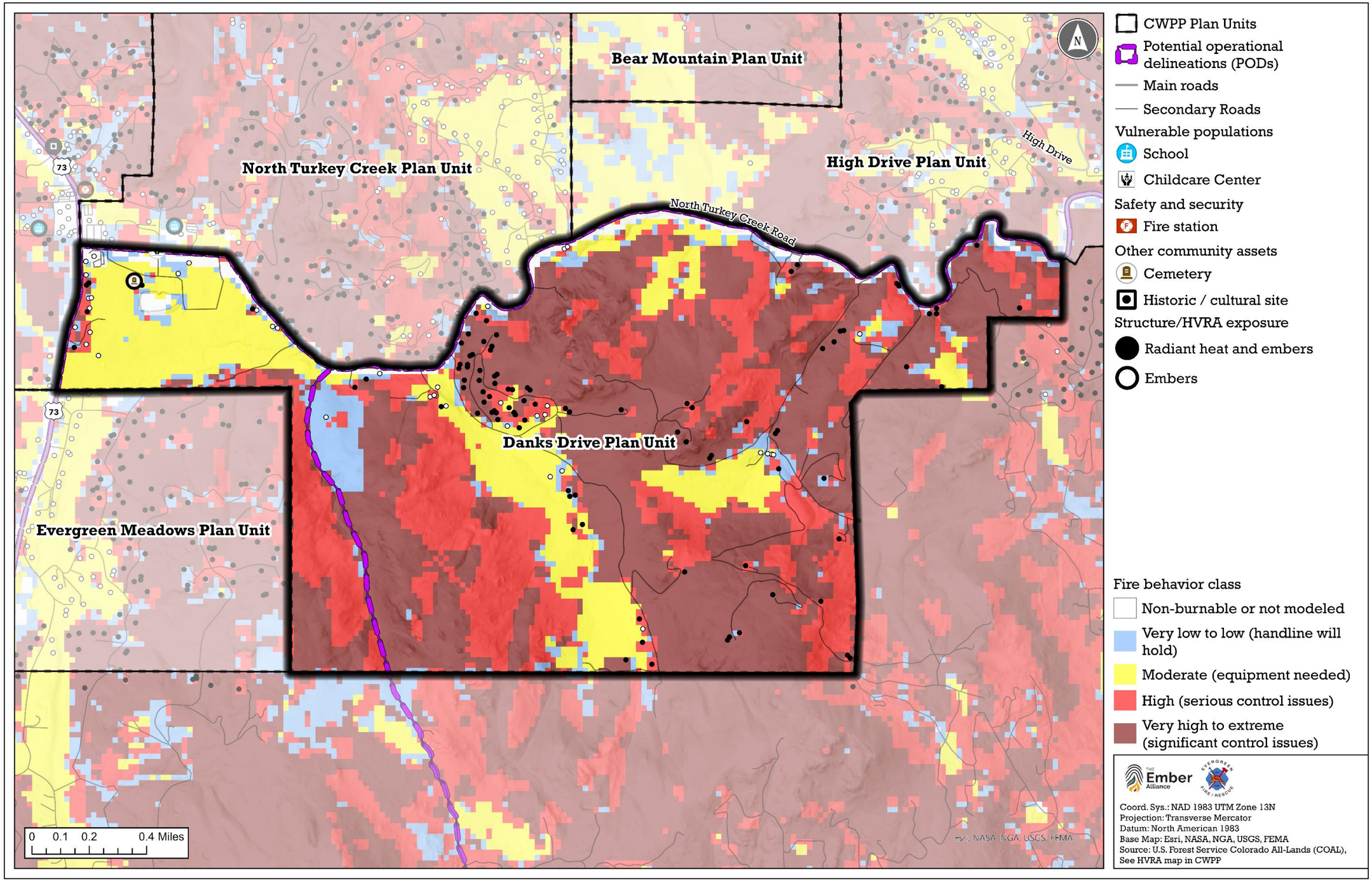
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Plan unit would benefit from JCD and/or CSFS work with private landowners.
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Partner with neighboring Plan Units in developing Mitigation and Education Events.

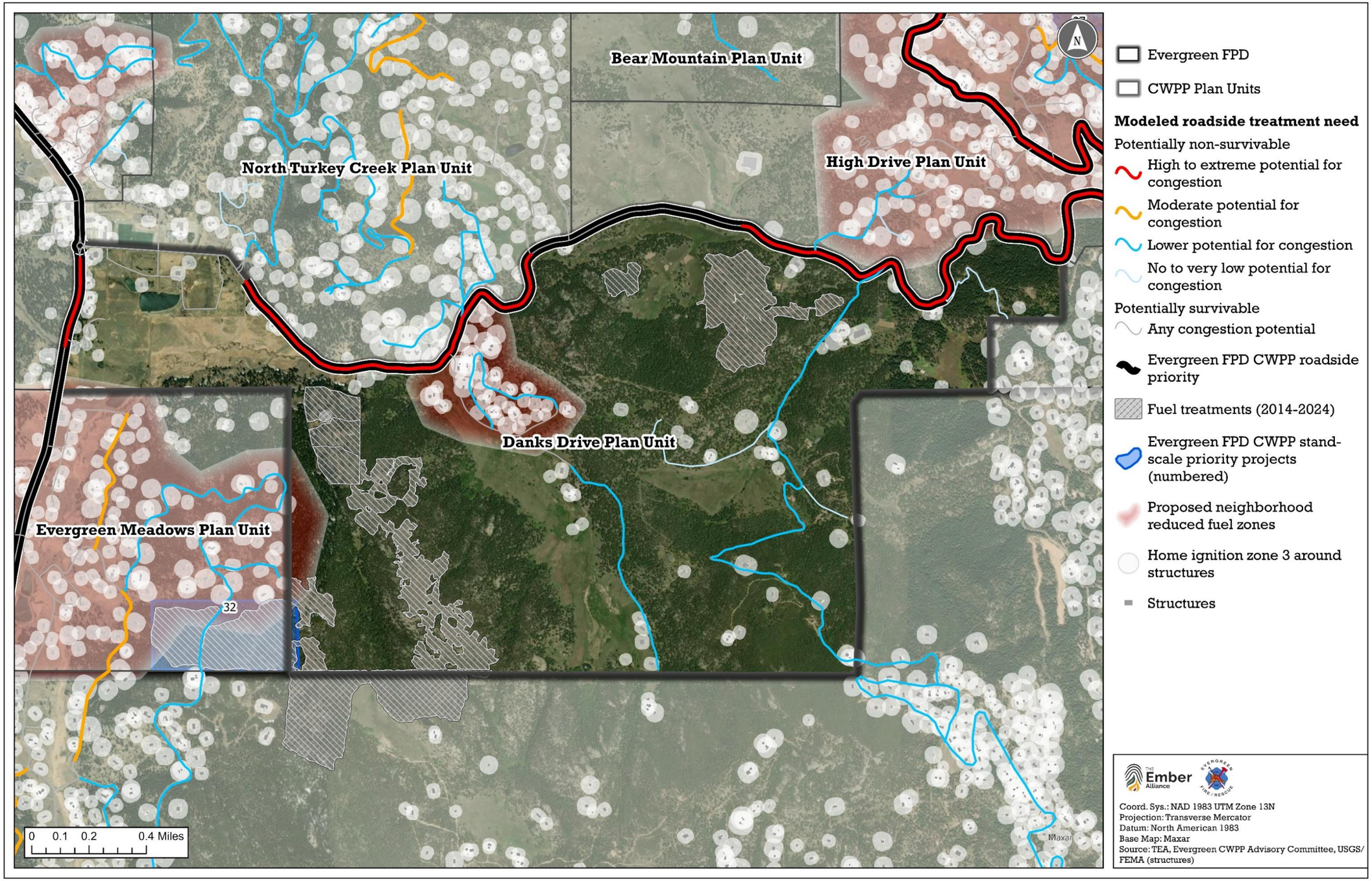
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.

- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Echo Hills

Most Extreme relative risk rating

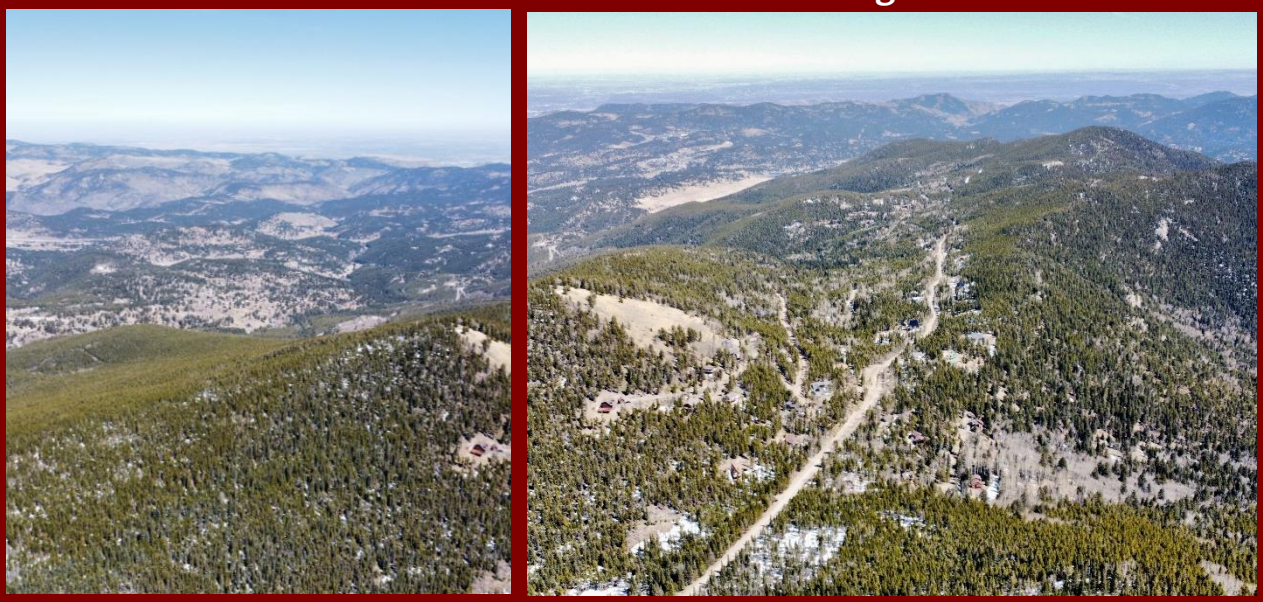


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

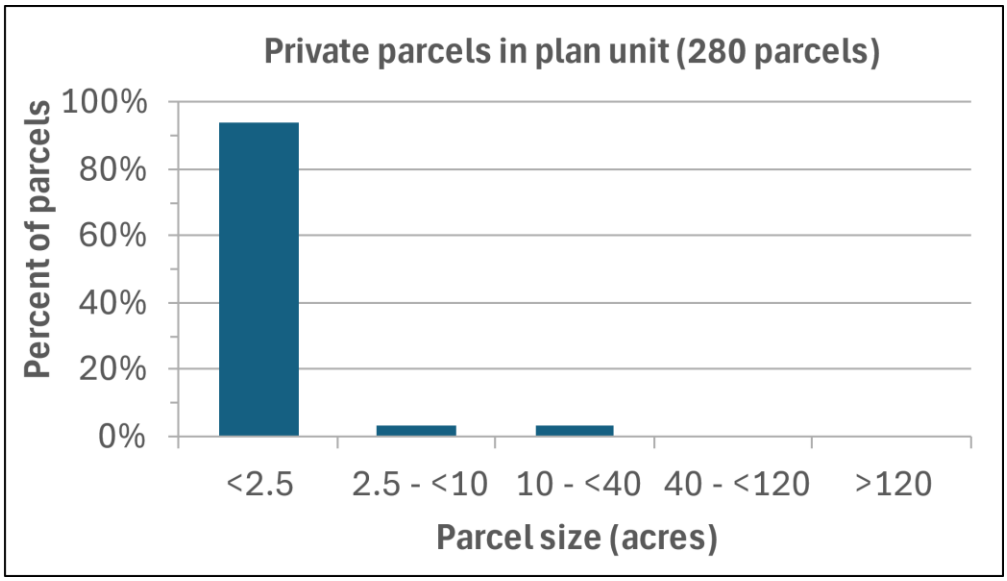
Under extreme fire weather and during a fire:

- **51%** of the area could experience very high to extreme fire behavior. Testing 123 KCH
- **47%** of the area could experience moderate to high rates of fire spread.
- **87%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **100%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: A little over a third of this plan unit is private property. Public land in this plan unit are the Arapaho and Roosevelt National Forest, Mount Pence, Bergen Peak, and Bergen Peak State Wildlife Area. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 162 structures (e.g., houses, businesses, sheds, outbuildings) and 280 private parcels (excluding rights of ways) in this plan unit. Almost all private parcels are very small (<2.5 acres).

Landownership	Percent of plan unit
Private property	36%
Denver Mountain Parks	27% (Mount Pence and Bergen Peak)
U.S. Forest Service	26% (Arapaho and Roosevelt National Forest)
Colorado Parks & Wildlife	10% (Bergen Peak State Wildlife Area)
Bureau of Land Management	1%
Total plan unit size: 2,008 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Almost all of the plan unit has steep slopes covered in dense lodgepole pine forests. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

The U.S. Forest Service undertook a series of patch cuts in lodgepole pine on the Arapaho Roosevelt National Forest to break up the continuity of the tree canopy. The potential for extreme fire behavior is lower in these treated areas.

A few of the drier, south-facing slopes in this plan unit support moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in more remote areas with long response times. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops.

Aspen trees occur in large clumps or in scattered patches around this plan unit. Aspen tends to have higher fuel moisture and are less likely to support active or passive crown fires. However, during drought, aspen trees can be consumed by wildfire. Fortunately, the sprouting ability of aspen often allows them to repopulate burned areas.

The density of homes scattered throughout the forest in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and

decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Practically all roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and lack of alternative egress routes could result in some congestion during an emergency. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes (portions of roadway)
Sinton Road	Moderate	Third priority	Yes

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no hydrants in this plan unit, and only one known cistern over 10,000 gallons and one dip site. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Ready, Set, Go! Program: Clear Creek County endorses the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased Community Wildfire Ambassador presence in the community and involvement with EFR.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

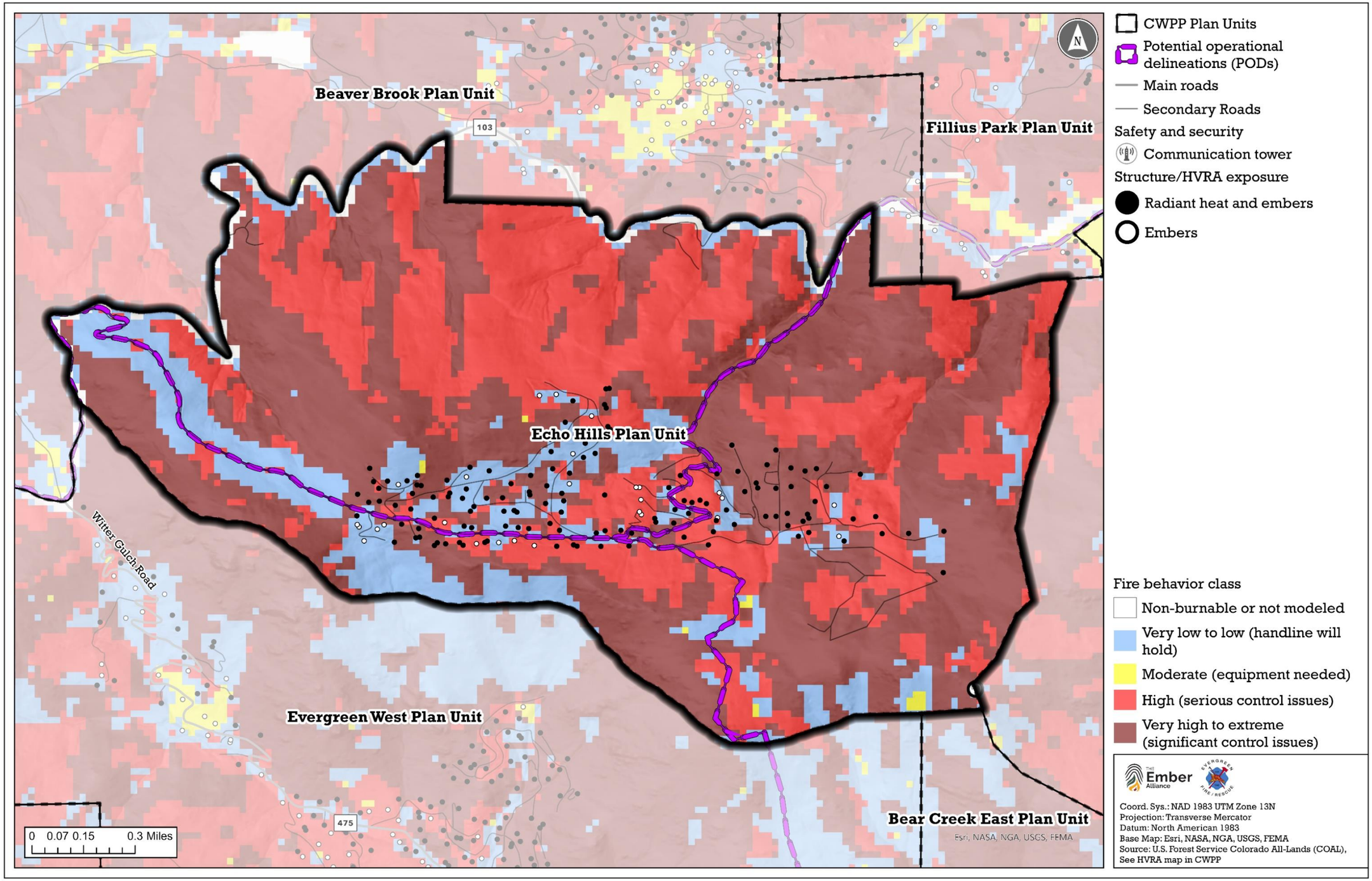
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.

- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Work to increase water supply.
- Work to improve roadways.
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Partner with the County and CDOT to conduct roadway improvements.
- Expand outreach and communication through HOAs.
- Explore opportunities for additional water sources.
- Explore implementation of a Community Roadside Mitigation Event and continue HOA Potluck Education Event.

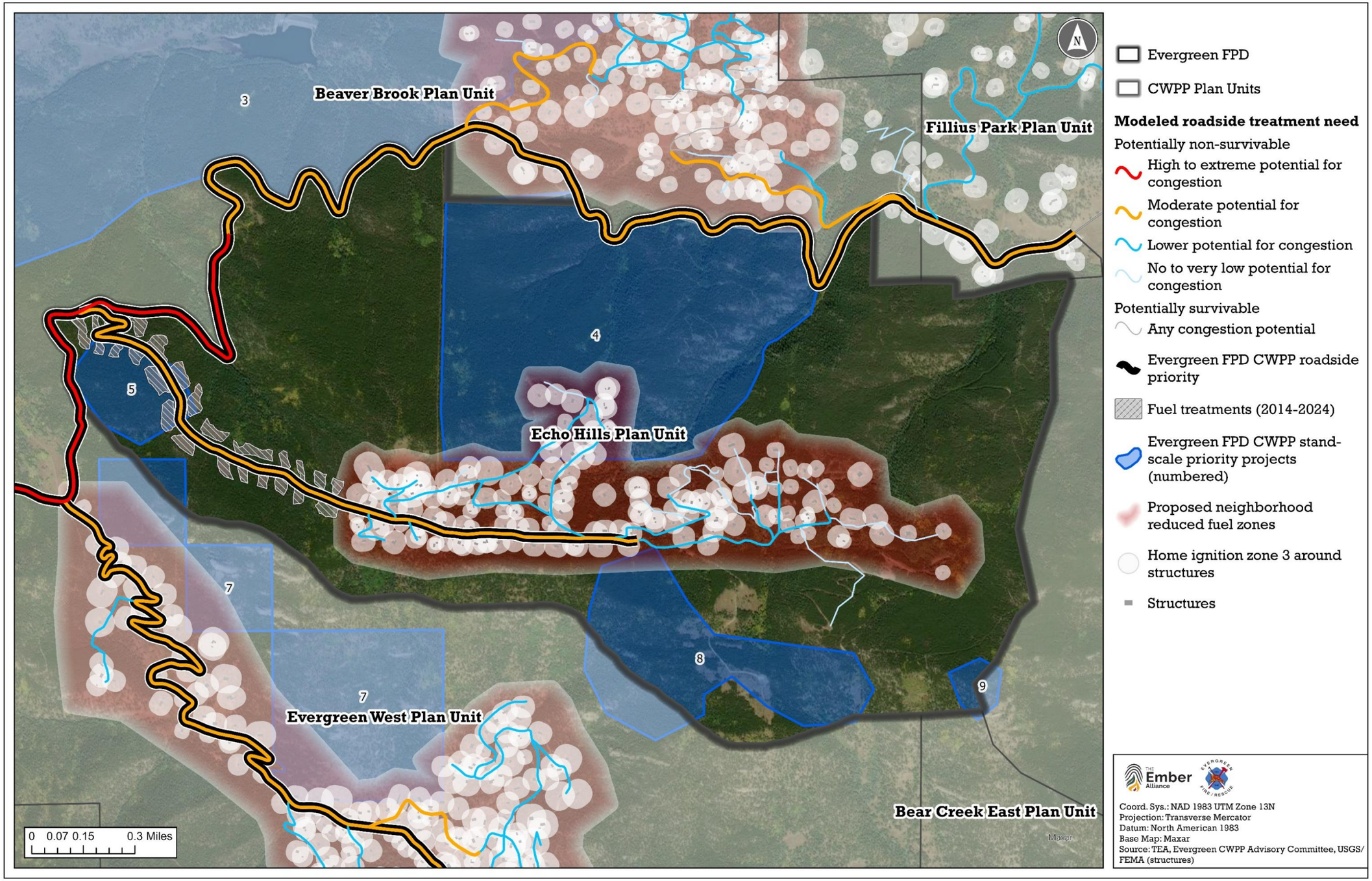
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have

battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Evergreen Meadows

High relative risk rating

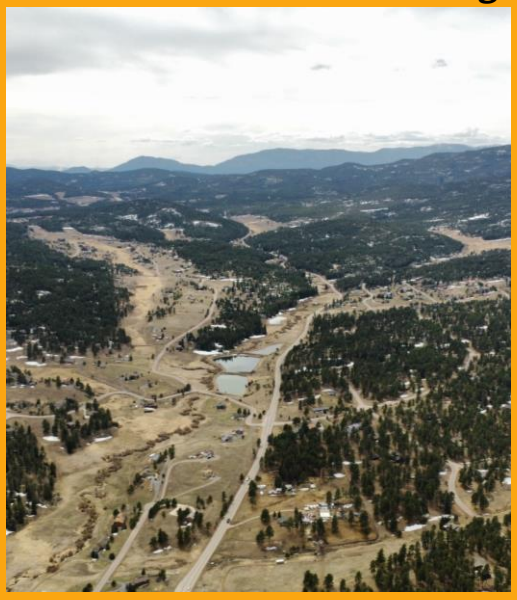


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

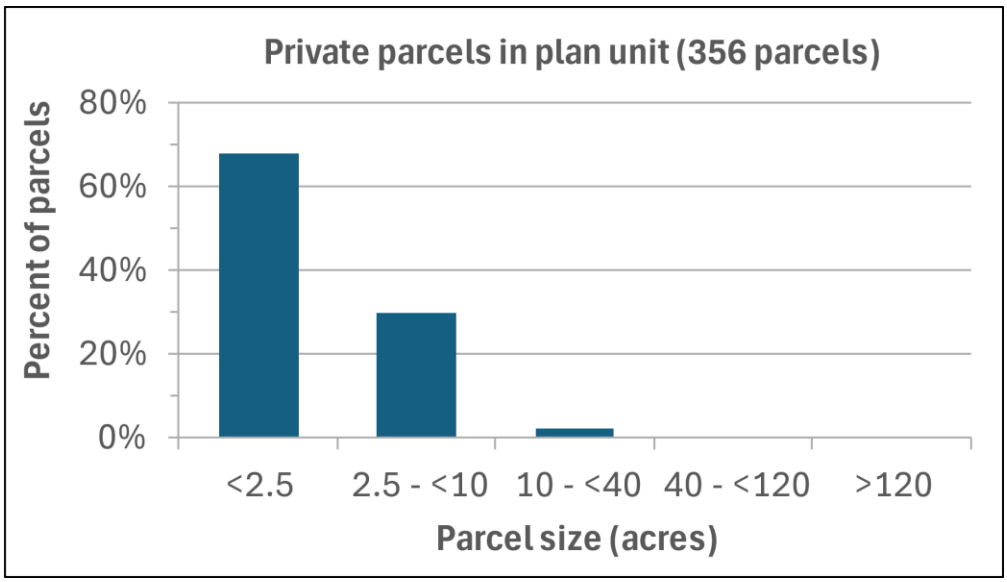
Under extreme fire weather and during a fire:

- **47%** of the area could experience very high to extreme fire behavior.
- **53%** of the area could experience moderate to high rates of fire spread.
- **84%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **78%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all of this small plan unit is private property (93%). Public land in this plan unit are Berrian Mountain managed by Denver Mountain Parks and small properties managed by Jefferson County Open Space. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 344 structures (e.g., houses, businesses, sheds, outbuildings) and 356 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres). The area is covered by a voluntary homeowners association.

Landownership	Percent of plan unit
Private property	93%
Denver Mountain Parks	6% (Berrian Mountain)
Jefferson County	1%
Total plan unit size: 1,183 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category, but potential fire behavior is variable across the plan unit. Parts of the plan unit have moderate to steep north- and northwest-facing slopes covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Other parts of the plan unit are covered in ponderosa pine forests with moderate- to high- tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops.

Riparian vegetation and grasslands cover the central part of the plan unit. Grasslands can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, these vegetation types can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Riparian vegetation along North Turkey Creek and shallow valleys across the plan unit have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks has undertaken forest restoration treatments on Berrian Mountain Park to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in high levels of congestion during an emergency. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73^	High to extreme	Second priority	Yes
Centaur Drive	Moderate		
Gray Fox Drive	Moderate*		
South Alsab Trail	Moderate		
South Citation Trail	Moderate		
South Grizzly Way	Moderate		
South Peace Chance Trail	Moderate		
South Red Fox Drive	Moderate		
Whirlaway Trail	Moderate		

^Note: While portions of Highway 73 were predicted to survivable conditions, all of Highway 73 is a priority roadway for the Evergreen FPD CWPP due to the potential for high to extreme congestion, and this road's strategic importance as a potential control line. On-the-ground assessments can determine what work might need to be done along different sections of this roadway.

*Moderate congestion and non-survivable conditions are predicted along the southern part of Gray Fox Drive south of the Evergreen FPD boundary.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "high" relative risk category. There is only one dry hydrant and one dip site available in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Began JCD landscape project on northeast corner of plan unit.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

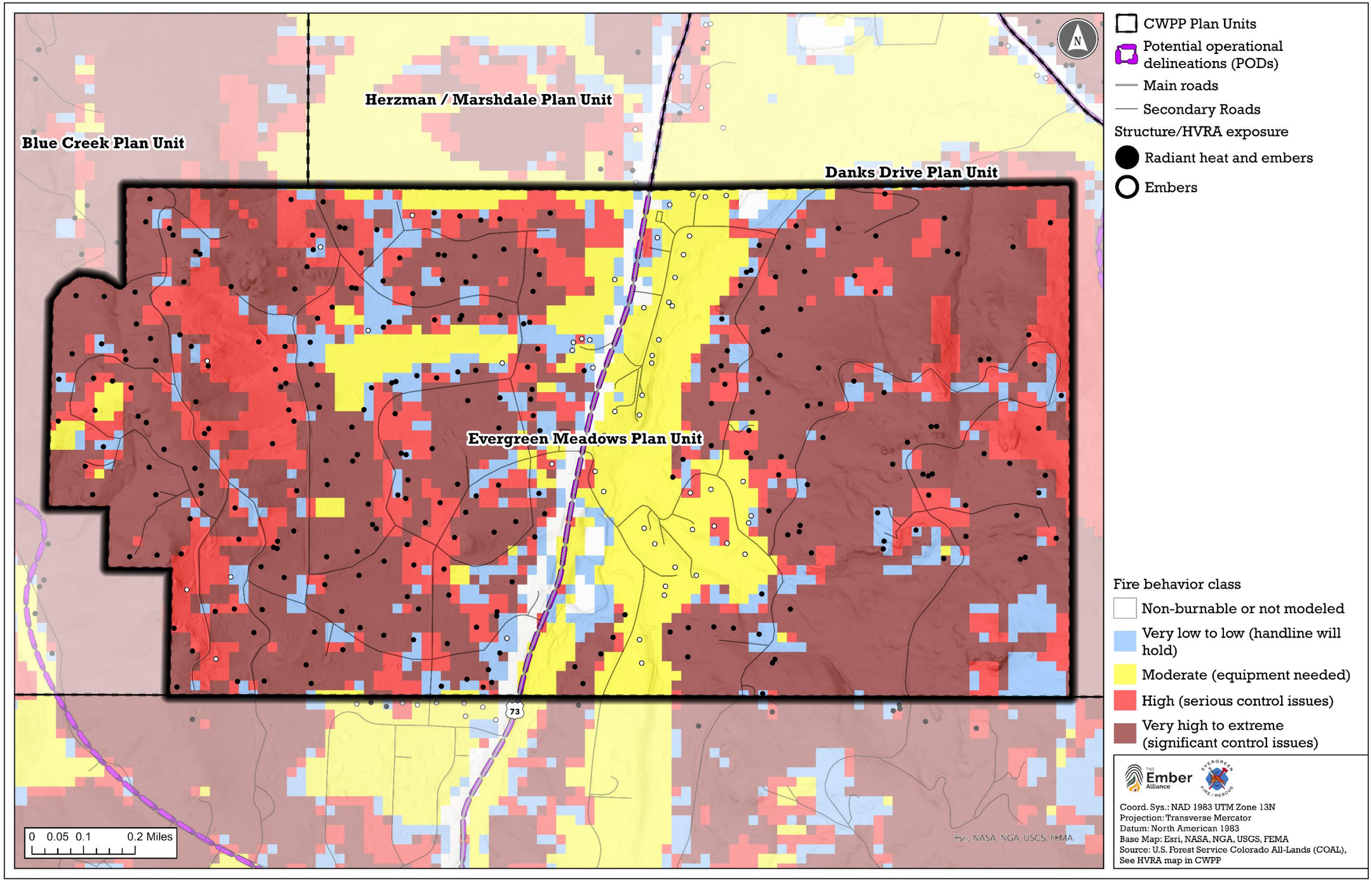
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Establish communication infrastructure across plan unit, specifically for other Fire District areas.
- Explore implementation of a Community Roadside Mitigation Event(s) and HOA Education Event(s).

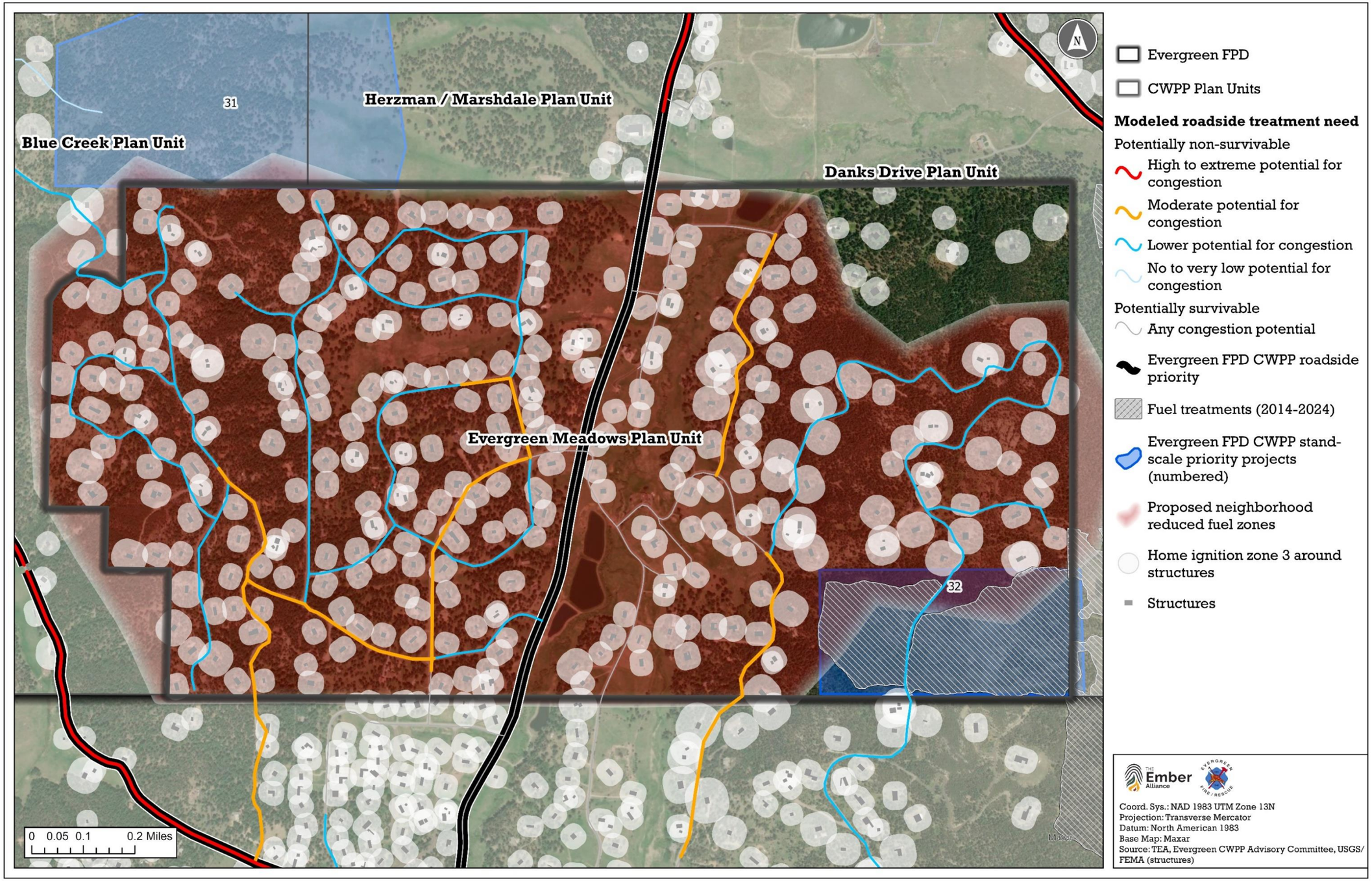
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.

- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Evergreen West

Extreme relative risk rating

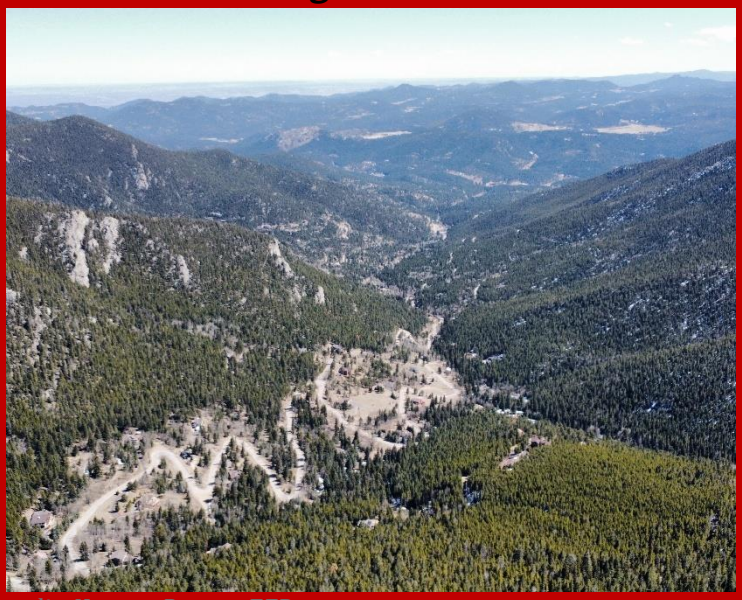


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

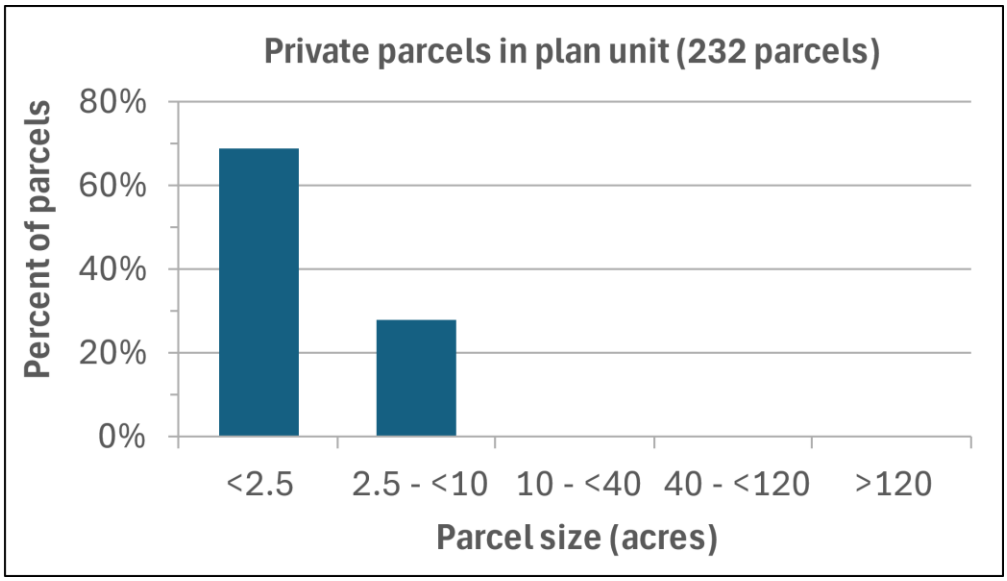
Under extreme fire weather and during a fire:

- **53%** of the area could experience very high to extreme fire behavior.
- **43%** of the area could experience moderate to high rates of fire spread.
- **74%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **100%** roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: About half of this plan unit is private property. Public land in this plan unit are the Arapaho and Roosevelt National Forest, Bergen Peak State Wildlife Area, Snyder Mountain, and Mount Judge. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 190 structures (e.g., houses, businesses, sheds, outbuildings) and 232 private parcels (excluding rights of ways) in this plan unit. All private parcels are small (<10 acres).

Landownership	Percent of plan unit
Private property	48%
Colorado Parks & Wildlife	19% (Bergen Peak State Wildlife Area)
Denver Mountain Parks	18% (Snyder Mountain and Mount Judge)
U.S. Forest Service	15% (Arapaho and Roosevelt National Forest)
Bureau of Land Management	1%
Total plan unit size: 2,218 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Almost all of the plan unit has very steep slopes covered in dense conifer forests. North- and northwest-facing slopes in the southern half of the plan unit support dense lodgepole pine forests at higher elevations and dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce at mid elevations. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

A few of the drier, south-facing slopes in this plan unit support moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops.

Aspen trees occur in large clumps or in scattered patches around this plan unit. Aspen tend to have higher fuel moisture and are less likely to support active or passive crown fires. However, during drought, aspen trees can be consumed by wildfire. Fortunately, the sprouting ability of aspen often allows them to repopulate burned areas.

The density of homes scattered throughout the forest in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the “extreme” category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home

free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Practically all roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in some congestion during an emergency. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes
Witter Gulch Road	Moderate	Second priority	
Aspen Place	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no wet hydrants in this plan unit, and only one cistern with a capacity of 10,000 gallons or greater and one dip site. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. The plan unit is far from fire stations and could experience an extended response time.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Formed 501(c)(3) community nonprofit.
- Awarded over $50K in grant funding.
- Raised over $20K in private donations.
- Conducted Witter Gulch roadside mitigation with EFR with 80% participation rate.
- Conducted Snyder Mountain roadside mitigation with residents resulting in $47K in contractor work and over 600 hours of volunteer work.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

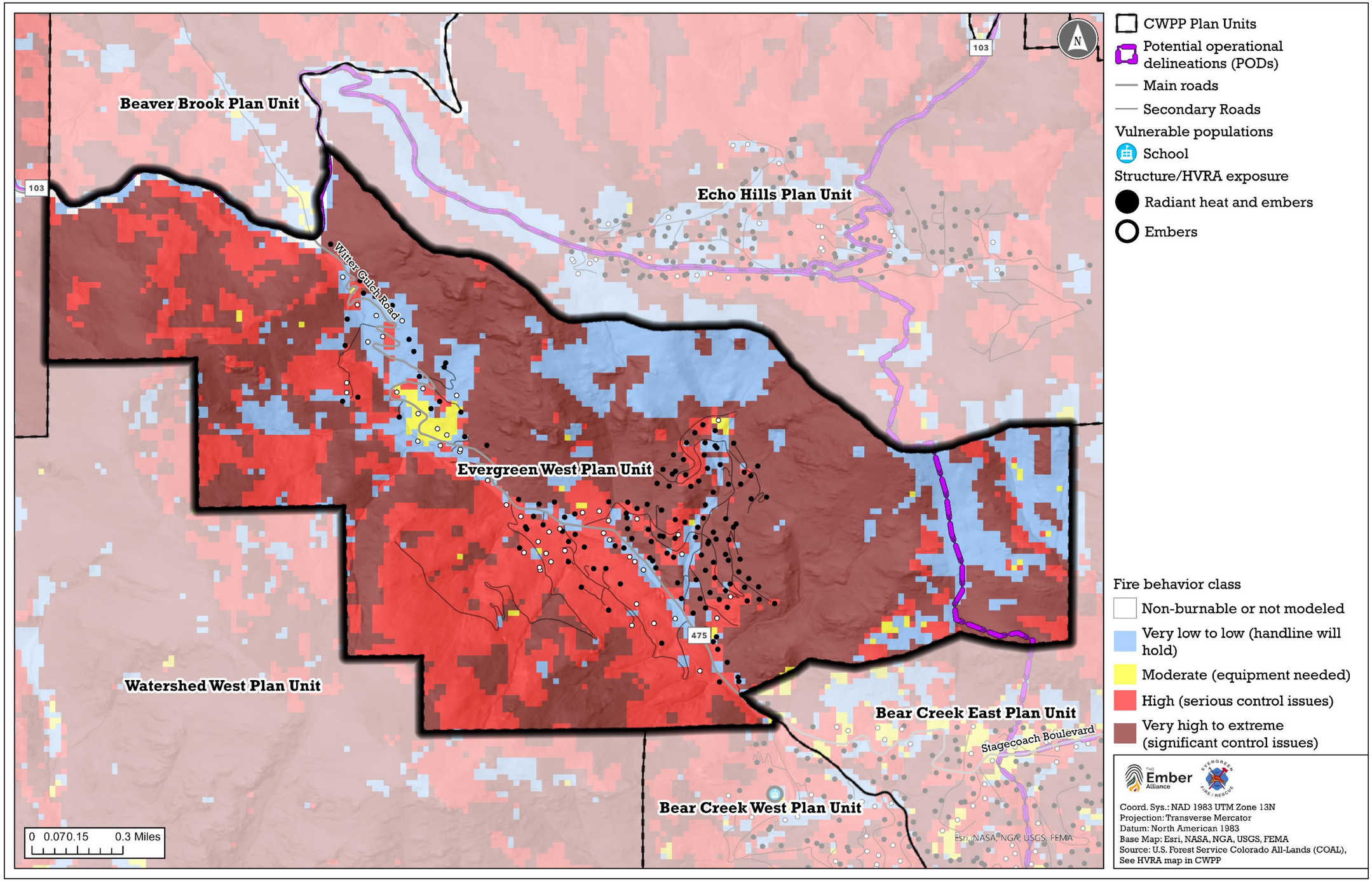
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Continued Community Wildfire Ambassador Team support.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Continued aggressive roadside mitigation along Witter Gulch, Snyder Mountain, and Aspen Place (as well as all other secondary roads).
- Partner with neighboring plan units in developing Mitigation & Education Events.

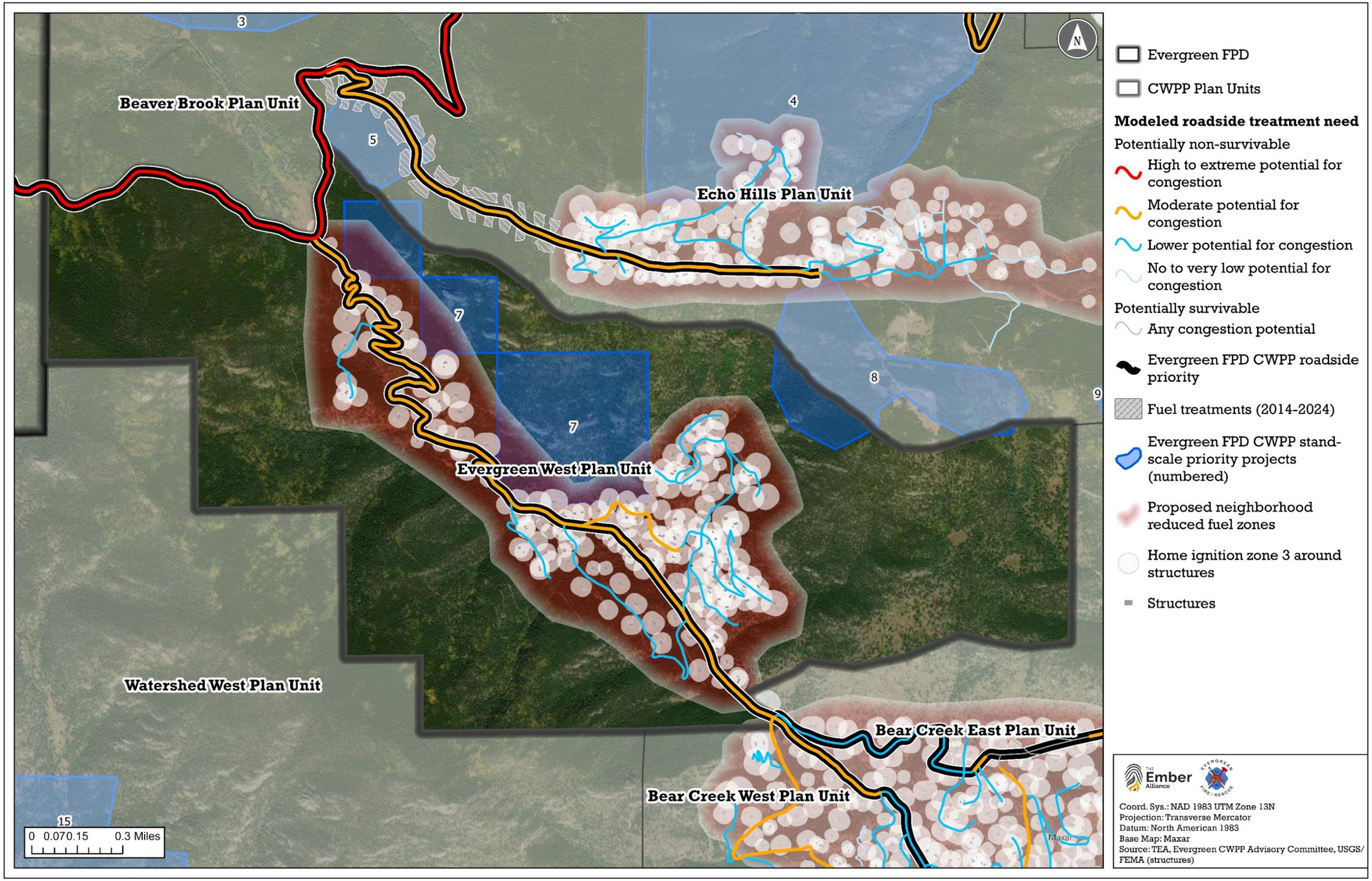
Recommendations for Residents

- Establish contact with your Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones.** Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).

- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Filius Park

High relative risk rating

Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

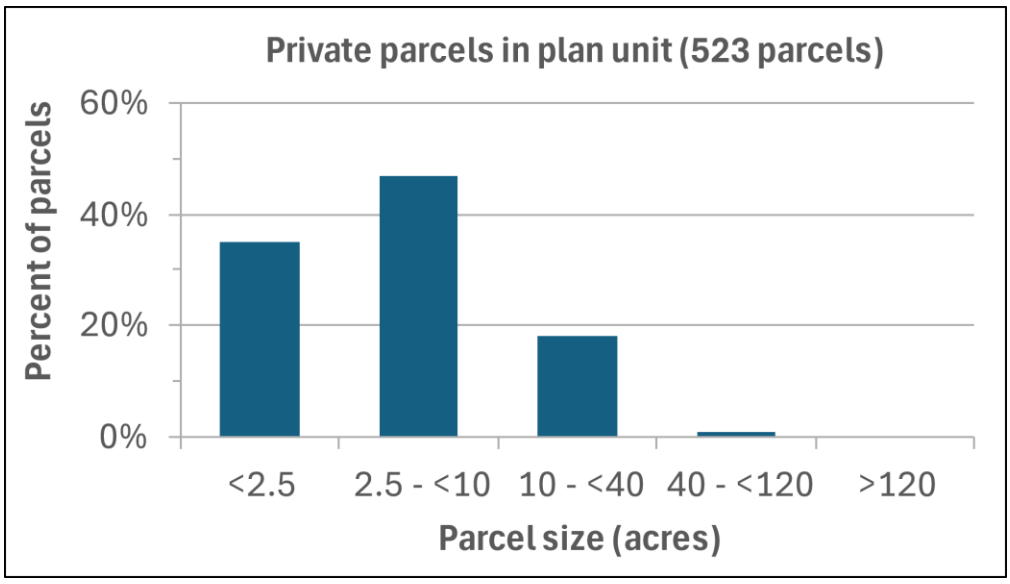
Under extreme fire weather and during a fire:

- **41%** of the area could experience very high to extreme fire behavior.
- **49%** of the area could experience moderate to high rates of fire spread.
- **76%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **74%** of roadways have potentially non-survivable conditions.
- This plan unit has a **moderate** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **moderate** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all of this plan unit is private property (97%). Public land in this plan unit is Fillius Park managed by Denver Mountain Parks. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 626 structures (e.g., houses, businesses, sheds, outbuildings) and 523 private parcels (excluding rights of ways) in this plan unit. Most private parcels range are very small to moderate sizes (<40 acres), and many properties fall within HOAs. There are several highly valued resources and assets (HVRAs) in this plan unit, including Evergreen Fire Rescue Station 7 (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	97%
Denver Mountain Parks	3% (Fillius Park)
Total plan unit size: 3,777 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Vegetation in this plan unit is a patchwork of grasslands, variable-density ponderosa pine forests, and high density mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Low-density ponderosa pine forests in parts of the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Under hot, dry, and windy conditions, grasslands across the plan unit could fuel fast-moving wildfires with long flame lengths. Fast-moving wildfires can outpace the suppression capabilities of initial firefighters arriving on scene, and long flame lengths emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Shallow valleys and swales scattered across the plan unit have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions in pockets of dense development in this plan unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. More than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Some homes have additional hazards within 30 feet of the primary structure, such as wood piles,

propane tanks, flammable lawn furniture, trash, campers, wooden sheds, barns, or accessory dwelling units. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are some accessory dwelling units, barns, and outbuildings in this plan unit, and if hazards are not mitigated around these structures, they can pose a risk to nearby primary structures if they ignite during a wildfire. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Fire station	Evergreen Fire Rescue Station 7	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Fillius - Historic CCC Built Huts	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Humphrey Museum – Soda Creek	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Substation		High density of embers from burning vegetation	Moderate (25-<50%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. There are some properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
County Road 65	High to extreme	Second or third priority (depending on section)	
County Road 103	Moderate	First priority	
South Soda Creek Road	Moderate	Third priority	
Soda Creek Drive	Moderate		
South Stiles Drive	Moderate		
Valley Road	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "high" relative risk category. There are a limited number of hydrants in the southern portion of this plan unit. High-density developments in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with

wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- HOAs have hosted clean-up events and chipping events.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

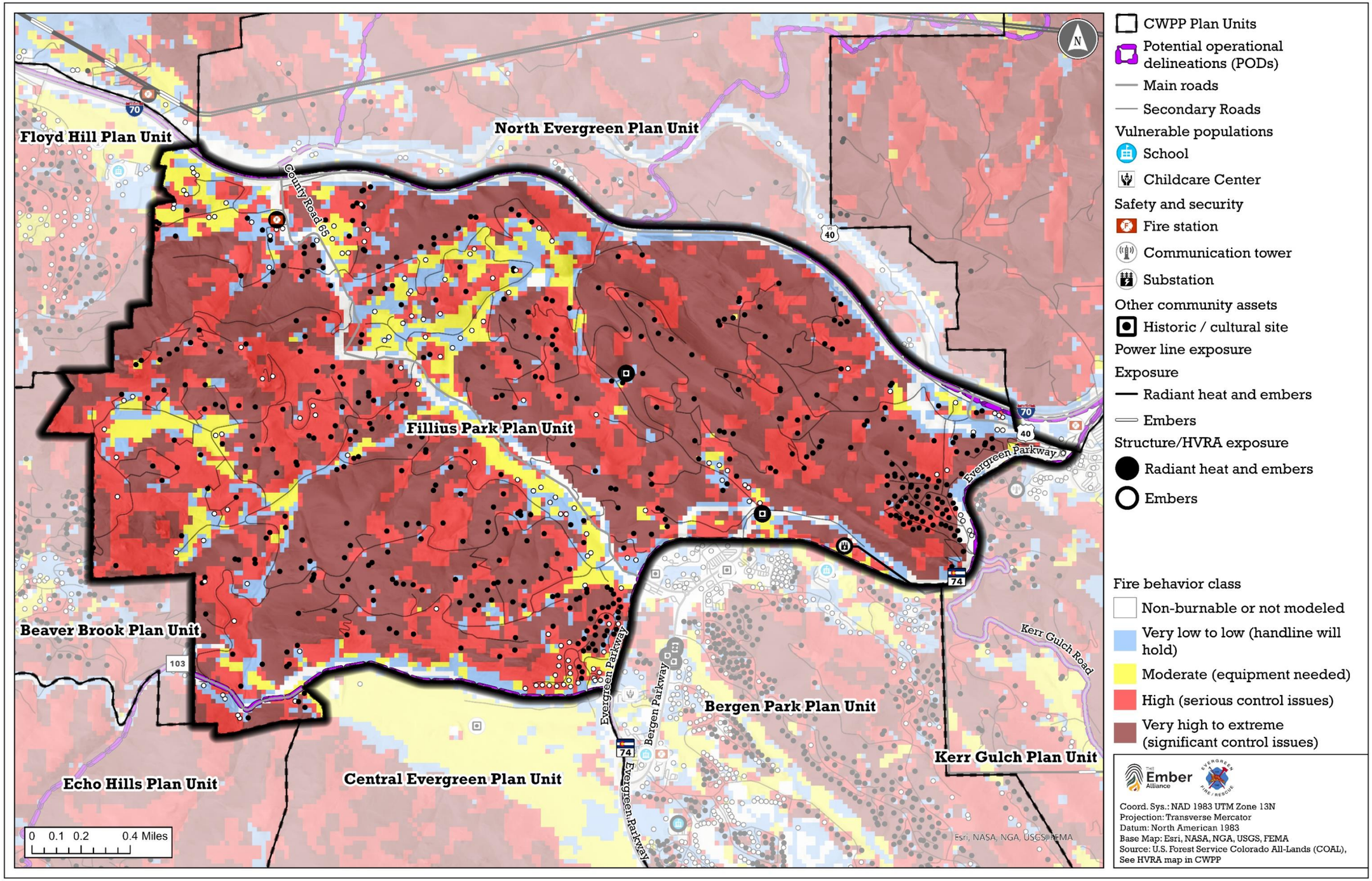
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.

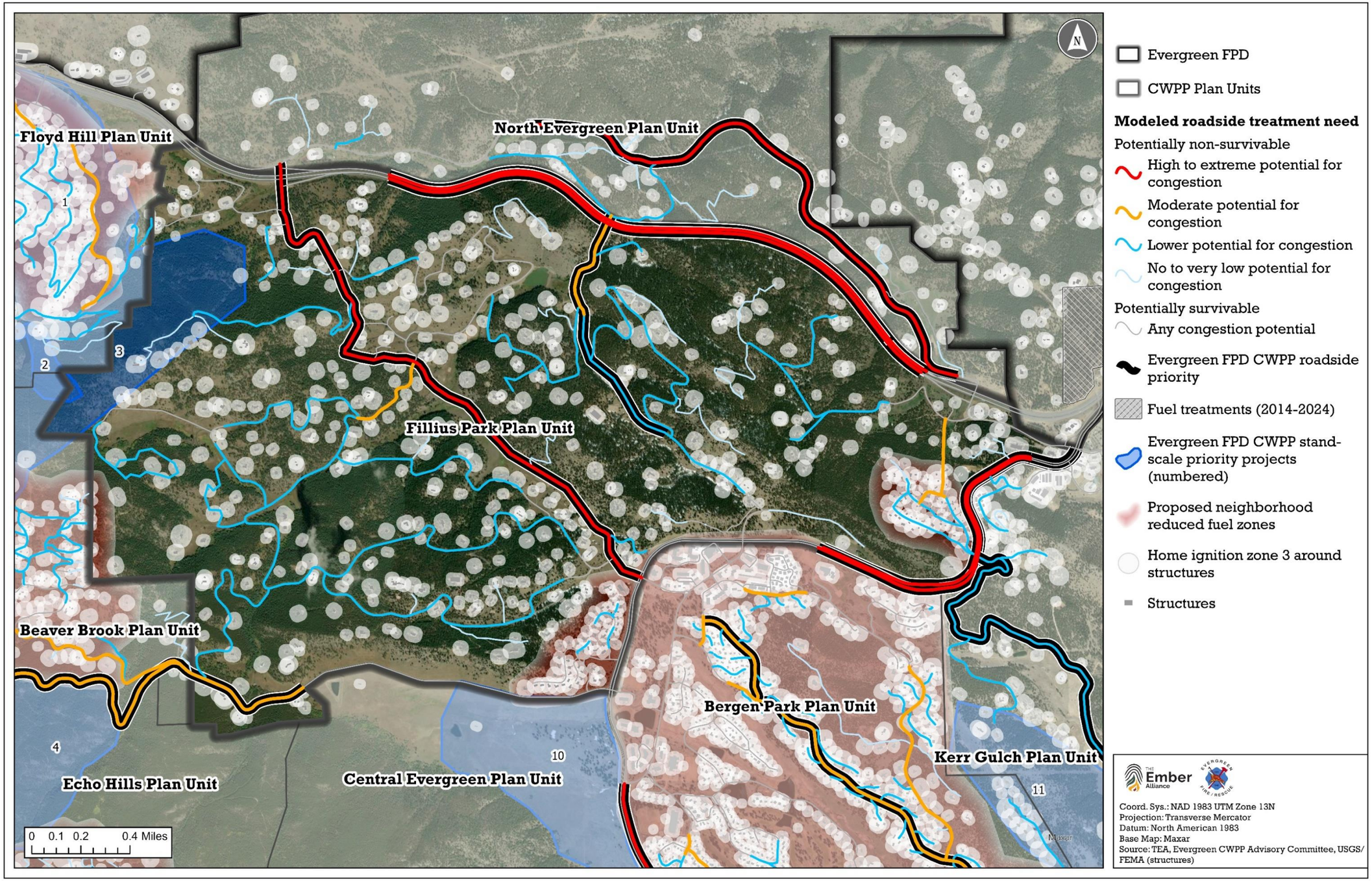
- Establish HOA communication and coordination in conjunction with Community Wildfire Ambassador recruitment.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Continue focused Neighborhood Roadside Mitigation Event(s) and HOA Potluck Education Event(s).

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



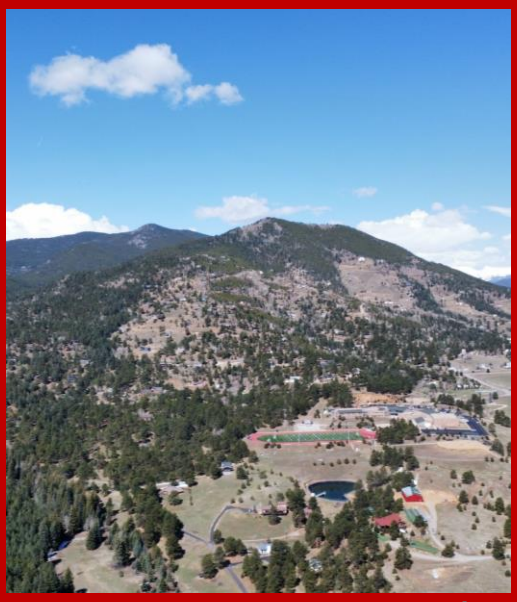
Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Floyd Hill

Extreme relative risk rating



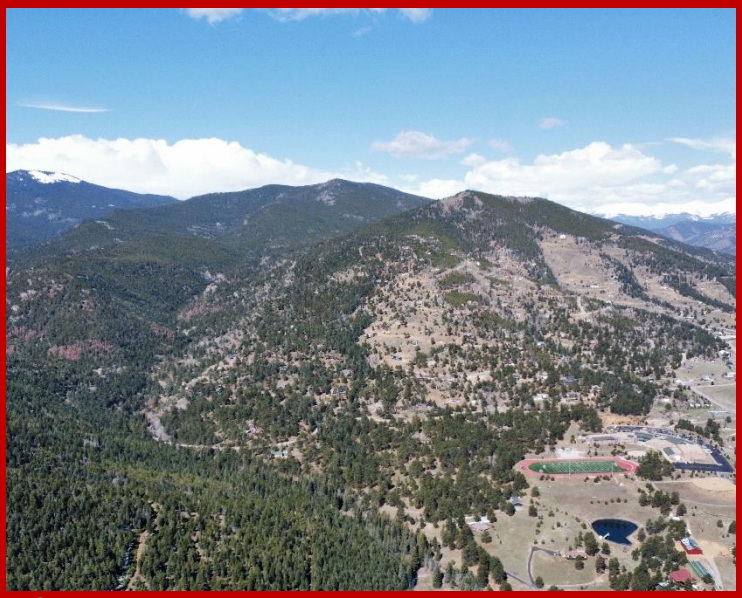


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

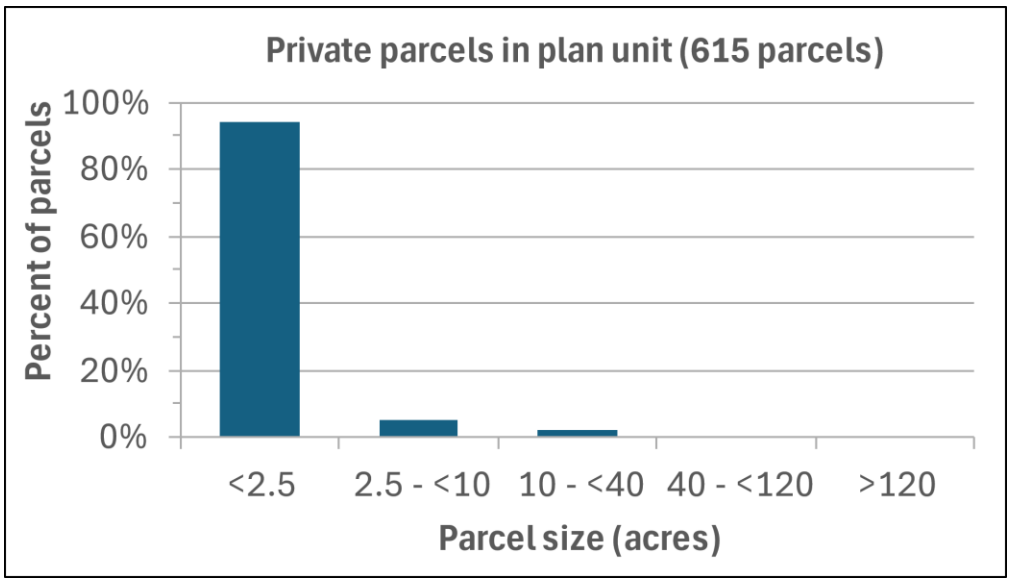
Under extreme fire weather and during a fire:

- **43%** of the area could experience very high to extreme fire behavior.
- **42%** of the area could experience moderate to high rates of fire spread.
- **63%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **65%** of the roads have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: Three-fourths of this plan unit is private property. Public land in this plan unit include the Arapaho and Roosevelt National Forest and Beaverbrook Watershed Open Space. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 337 structures (e.g., houses, businesses, sheds, outbuildings) and 615 private parcels (excluding rights of ways) in this plan unit. Almost all private parcels are very small (<2.5 acres), and some properties fall within HOAs. There are several highly valued resources and assets (HVRAs) in this plan unit, including Clear Creek Middle / High School (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	75%
U.S. Forest Service	16% (Arapaho and Roosevelt National Forest)
Clear Creek County	7% (Beaverbrook Watershed Open Space)
Colorado State Land Board	2%
Total plan unit size: 1,237 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. The southern part of plan unit has steep slopes covered in dense lodgepole pine forests. Mid-elevation areas are covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support ponderosa pine forests with variable tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Aspen trees occur in large clumps or in scattered patches around this plan unit. Aspen tend to have higher fuel moisture and are less likely to support active or passive crown fires. However, during drought, aspen trees can be consumed by wildfire. Fortunately, the sprouting ability of aspen often allows them to repopulate burned areas.

Lower slopes are covered in grasslands that can fuel fast-moving wildfires with long flame lengths under hot, dry, and windy conditions. Long flame lengths emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-

home ignitions. There is an extreme potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are some multi-unit properties in this plan unit, so coordination among owners and/or the property management organization is crucial to accomplish home hardening and fuel removal around these structures. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Childcare center	Bearly Tawl	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Communication tower		Low to moderate density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
School	Clear Creek Middle / High School	Low to moderate density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and lack of alternative egress routes could result in some congestion during an emergency. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
US 40	High to extreme	First priority	
Beaver Brook Canyon Road	Moderate		
Saddleback Drive	Moderate		
Aspen Drive	Moderate		
Meadow View Drive	Moderate		
Saddle Ridge Drive	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no wet hydrants and a limited number of cisterns in this plan unit. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments on steep slopes across this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with

wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

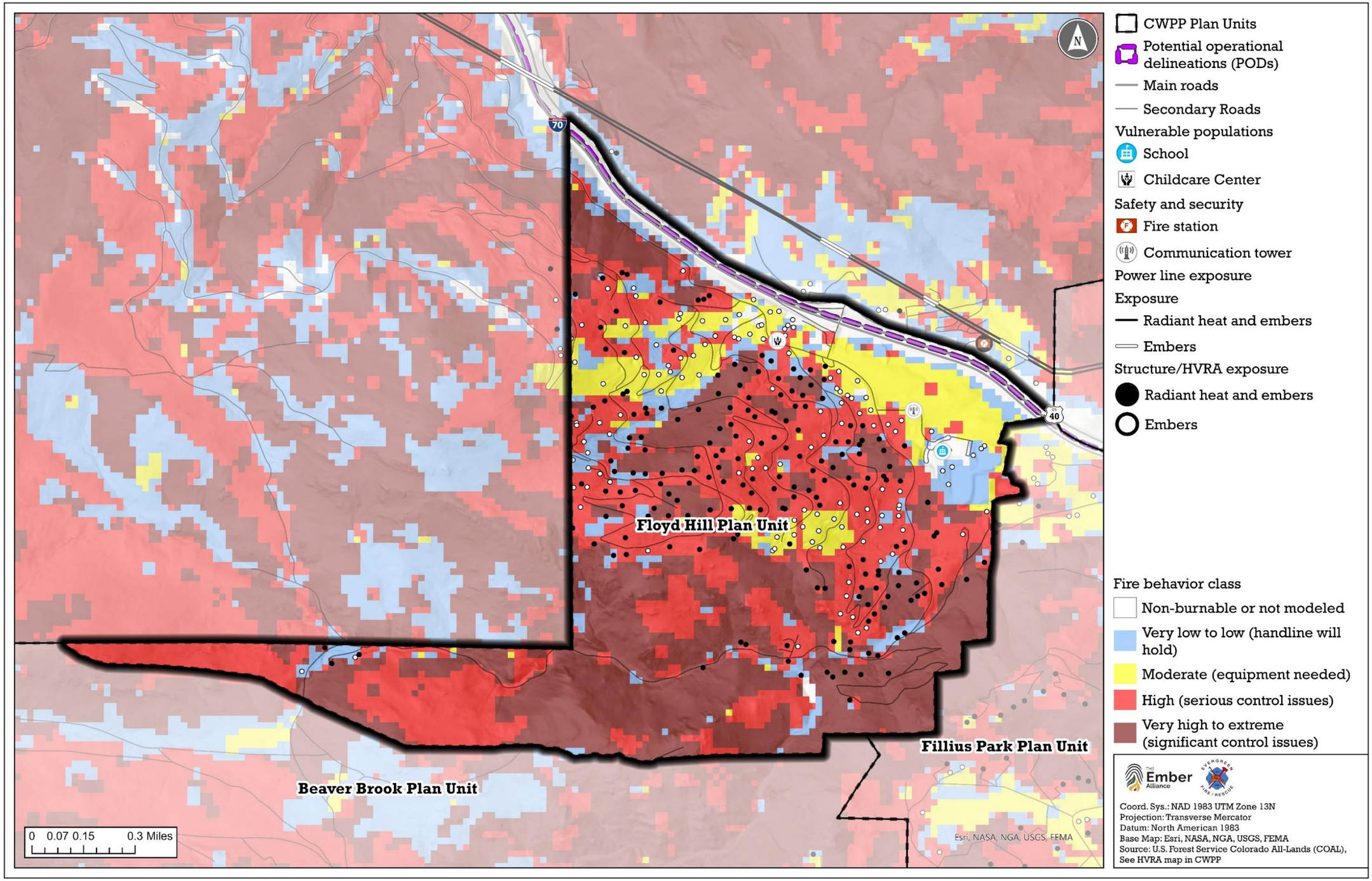
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Establish Community Wildfire Ambassador Team and coordinate outreach across the plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Partner with Clear Creek Fire Authority.

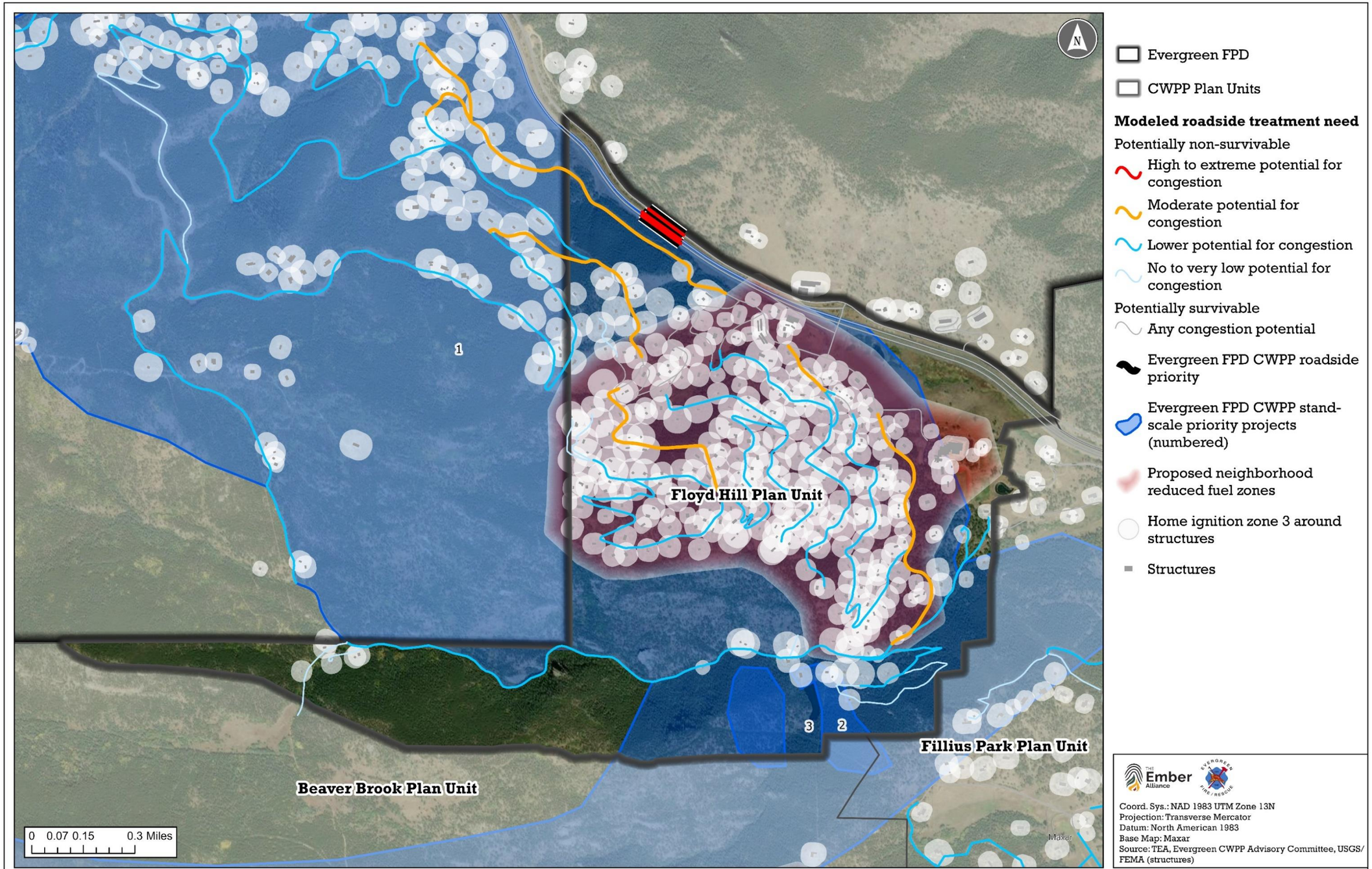
- Partner with neighboring plan units in developing Mitigation & Education Events.

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure*** **2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Herzman/Marshdale

Extreme relative risk rating

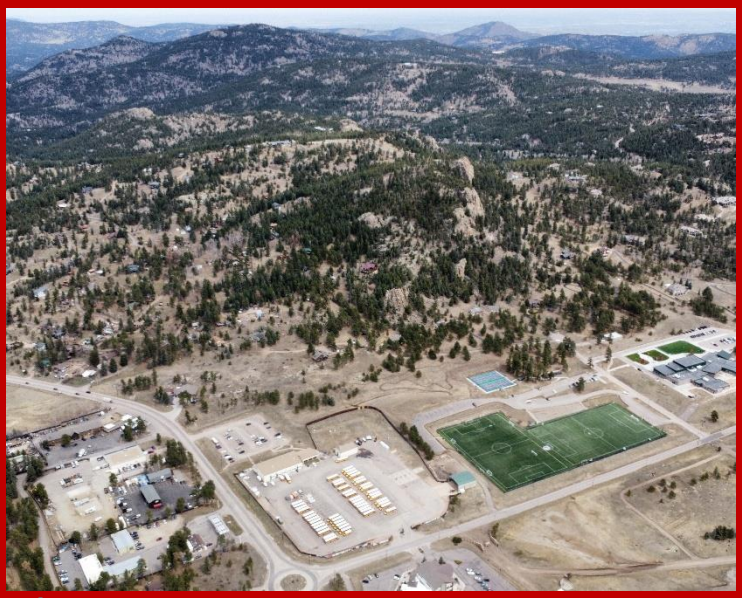


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

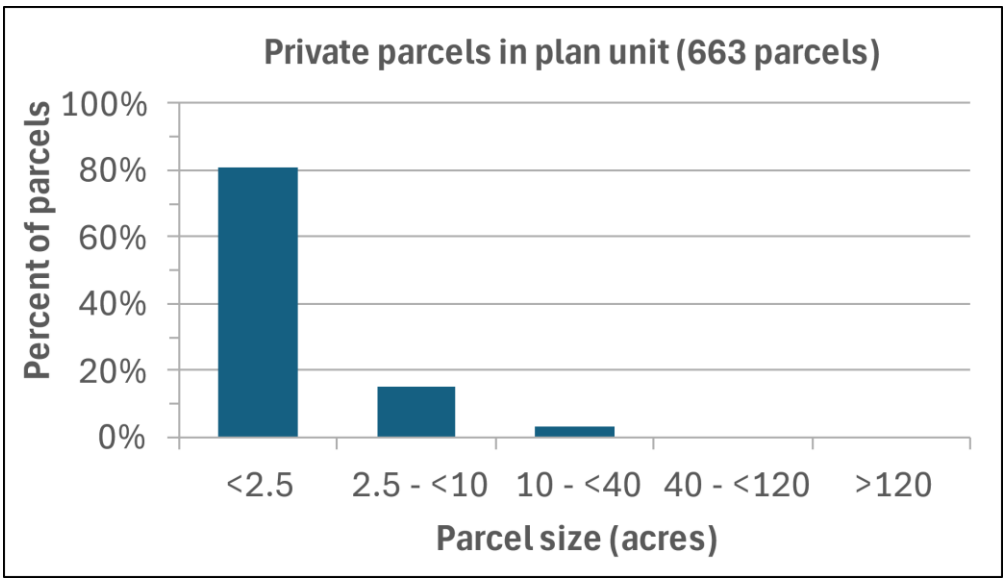
Under extreme fire weather and during a fire:

- **53%** of the area could experience very high to extreme fire behavior.
- **52%** of the area could experience moderate to high rates of fire spread.
- **79%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **75%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **moderate** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: A majority of this plan unit is private property (82%). Public land in this plan unit are Cub Creek Park and Bell Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 500 structures (e.g., houses, businesses, sheds, outbuildings) and 663 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres), and some properties fall within HOAs. There are several highly valued resources and assets (HVRAs) in this plan unit, including Evergreen Fire Rescue Stations 3 and 4, Montessori School of Evergreen, and two historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	82%
Denver Mountain Parks	19% (Cub Creek Park and Bell Park)
Total plan unit size: 2,371 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme, but potential fire behavior is highly variable across the plan unit. The northern and western parts of the plan unit have steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Grasslands occur in the flat and southern part of the plan unit and along shallow valleys running parallel to Highway 73. These valleys have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, under hot, dry, and windy conditions, grasslands can carry fast-moving wildfires with long flame lengths. Fast-moving wildfires can outpace the suppression capabilities of initial firefighters arriving on scene, and long flame lengths emit significant radiant heat that can ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks has undertaken extensive forest restoration treatments and roadside fuel treatments in Cub Creek and Bell Parks to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions. These treatments can also create safer conditions for citizens during evacuations.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is a high potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Communication tower		Radiant heat and high density of embers from burning vegetation	Highest (75-100%)
Fire station	Evergreen Fire Rescue Station 3	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Fire station	Evergreen Fire Rescue Station 4	High density of embers from burning vegetation	High (50-<75%)
Historic / cultural site	Marshdale Lodge (Bistro)	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Pearl Jarvis Home / Old Senior Resource Center	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
School	Montessori School of Evergreen	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in extreme levels of congestion during an emergency. There are some properties with livestock, which can increase evacuation time.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First or second priority (depending on section)	Yes
South Brook Forest Road	Moderate	Second priority	Yes
Camel Heights Road	Moderate		
Cragmont Drive	Moderate		
South Cubmont Drive	Moderate		
South Kiem Road	Moderate		
South Skyline Drive	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are no wet hydrants in this plan unit, but there are about five known cisterns with a capacity of at least 10,000 gallons and two dip sites. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Conducted defensible space inspections.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

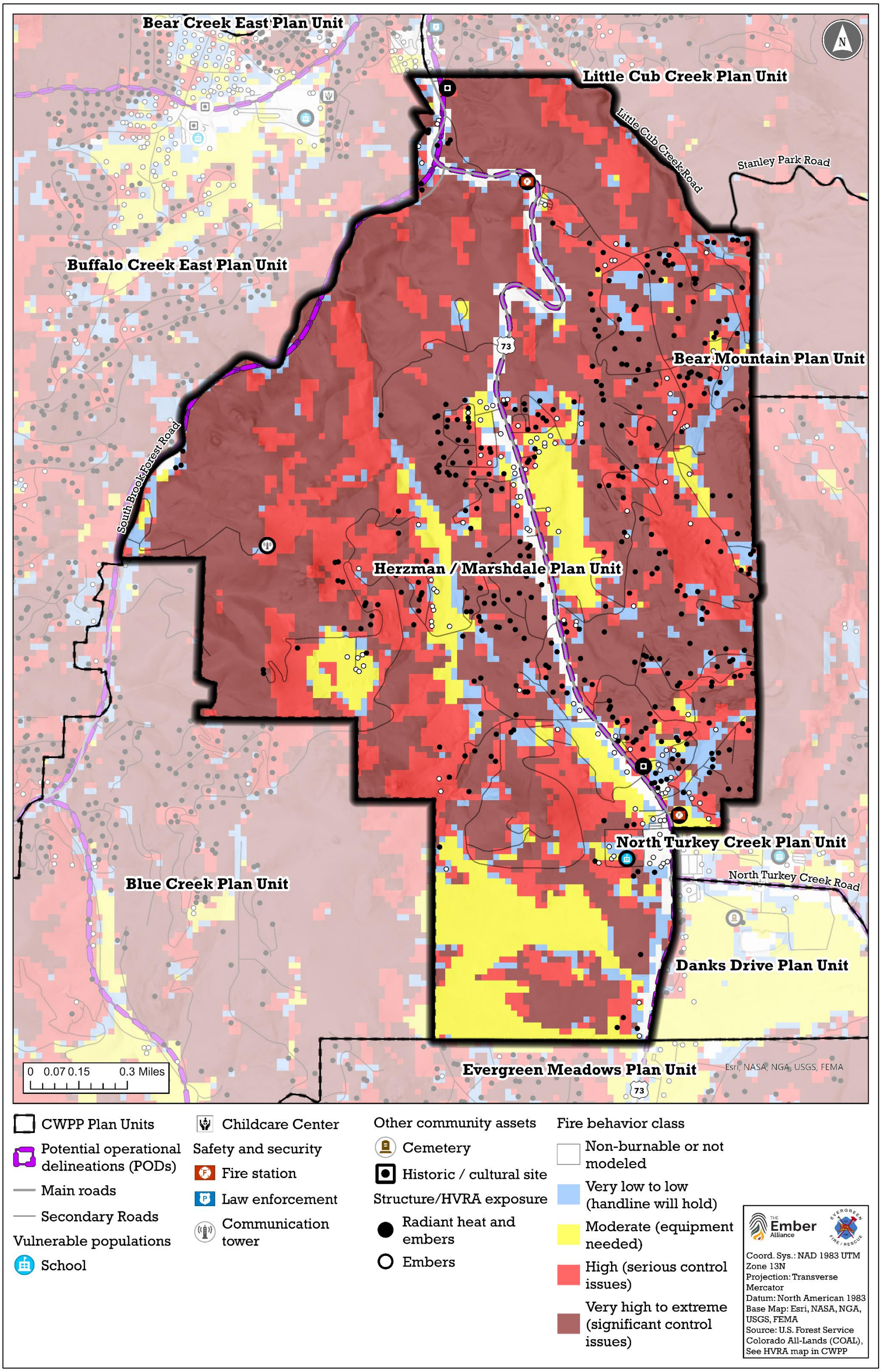
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.

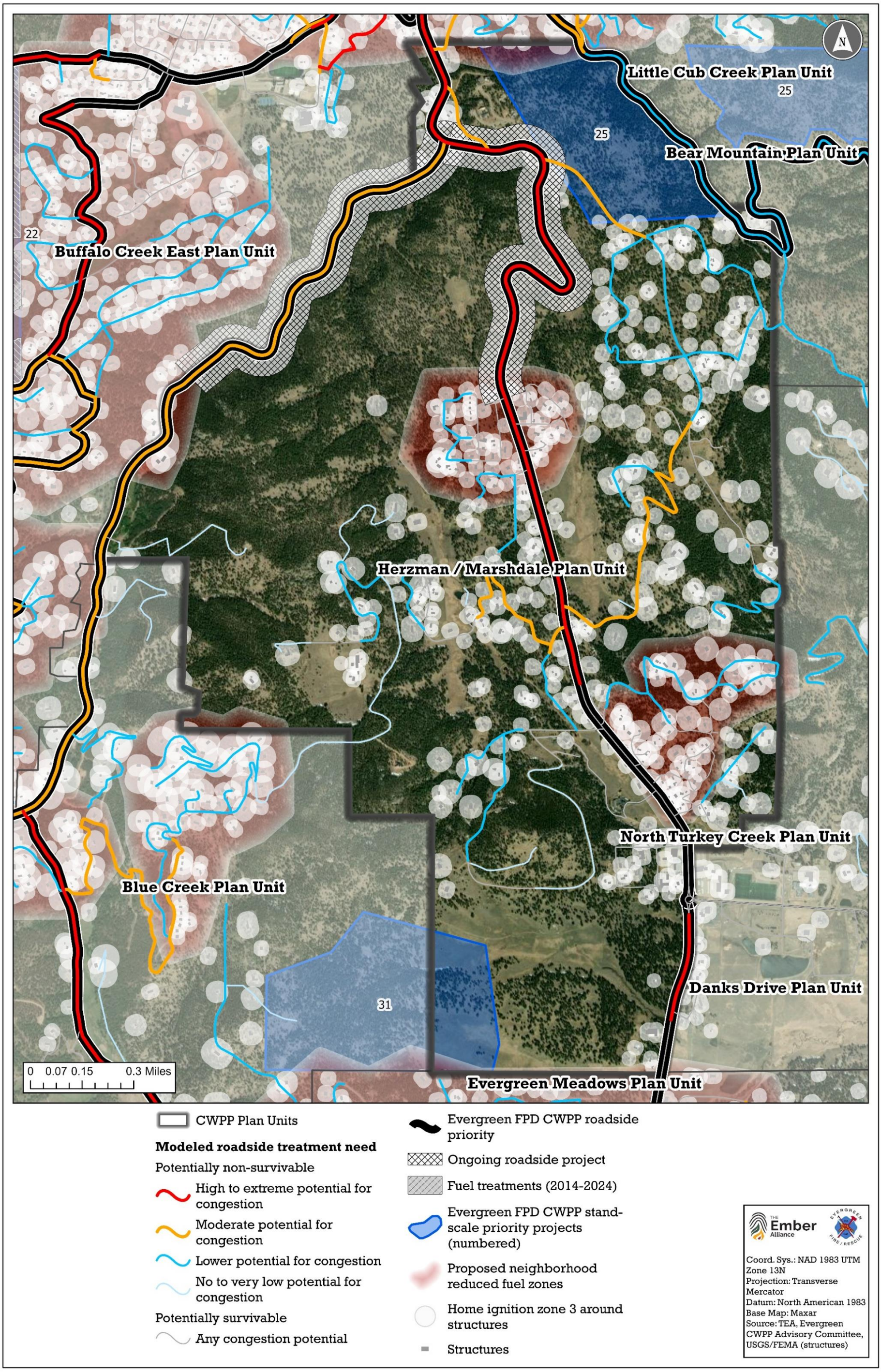
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Enhance connectivity of plan unit neighborhoods.
- Consider business properties just above roundabout present in the plan unit.
- Explore implementation of a Community Roadside Mitigation Event and Potluck and/or HOA Education Event(s).

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

High Drive

Extreme relative risk rating

Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

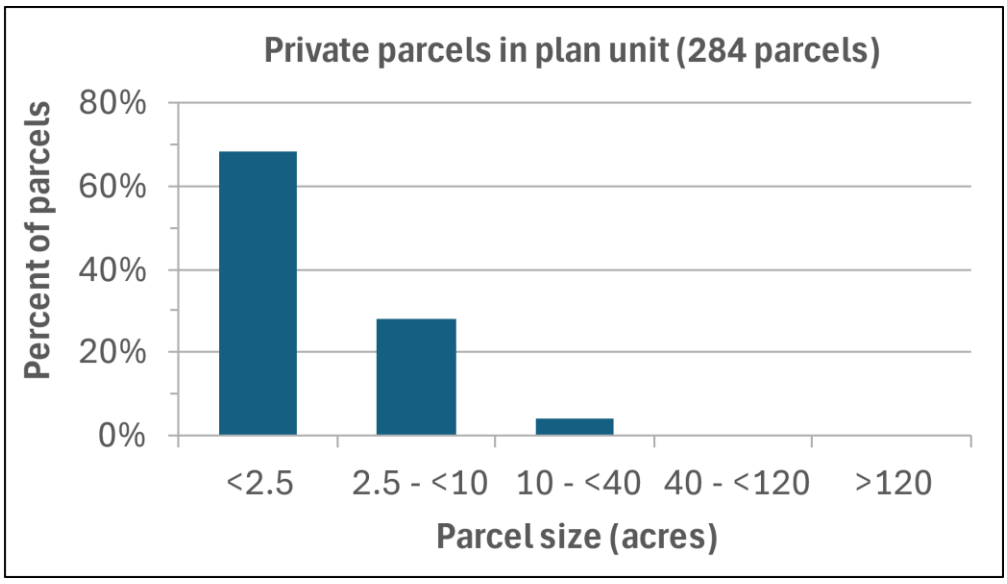
Under extreme fire weather and during a fire:

- **52%** of the area could experience very high to extreme fire behavior.
- **65%** of the area could experience moderate to high rates of fire spread.
- **78%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **73%** of the roads have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Most of this plan unit is private property (90%). Public land in this plan unit is Birch Hill managed by Denver Mountain Parks. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 362 structures (e.g., houses, businesses, sheds, outbuildings) and 284 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres).

Landownership	Percent of plan unit
Private property	90%
Denver Mountain Parks	10% (Birch Hill)
Total plan unit size: 1,538 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme, but potential fire behavior is highly variable across the plan unit. Part of the plan unit has steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support low- to moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Grasslands and shrublands occur in the western and central part of the plan unit, and these vegetation types can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, grasslands and shrublands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

The shallow valley that is oriented north-to-south in the southern part of the plan unit has higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses in this valley can dry out rapidly under hot, dry, and windy conditions, and dry grass can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

The High Drive plan unit is at lower elevation within the district, between 7,000 and 8,250 feet. This results in a vegetation pattern that appears quite different from other plan units and is more equivalent to some areas in the Inter-Canyon Fire Protection District. There is more Gambel Oak, as well as more Rocky Mountain Juniper trees than in other areas of the district. Some properties are dominated by oak brush, which requires heavy maintenance activity to control.

Denver Mountain Parks, Jefferson Conservation District, and private landowners have undertaken forest restoration treatments in the northeastern part of the plan unit to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from recreators at Elk Meadow Park, Evergreen Lake, and the Evergreen Golf Course, could result in some congestion during an emergency. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes
High Drive	High to extreme	Second priority	
Meadow Drive	Moderate		
South Valley Circle	Moderate		
South Valley Drive	Moderate		
Westway Drive	Moderate		
Peaceful Hills	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no wet hydrants in this plan unit, and only one known cistern with a capacity of at least 10,000 gallons and one dip site. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Community Wildfire Ambassador appointed in April 2022.
- Community Wildfire Ambassador contacted or knocked on doors of more than 90% of the 300 properties, and gained contact information when possible, as well as distributing CSFS HIZ brochure.
- Set up Google Drive for plan unit information, and one or more google contacts has been created for each property to make it easier for information transfer to residents.
- Utilized NextDoor's North Turkey Creek group (1100 members) and Facebook's Peaceful Hills group (225 members) for communications.
- Conducted home assessments for about 98 different homes.
- Approximately 50 Fire Aside electronic reports generated.
- Community Wildfire Ambassador has accompanied 4 different EFR mitigation inspectors on more that 90 of the home assessments.

- Approximately 10-12 property owners have taken advantage of the COSWAP grant opportunity.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

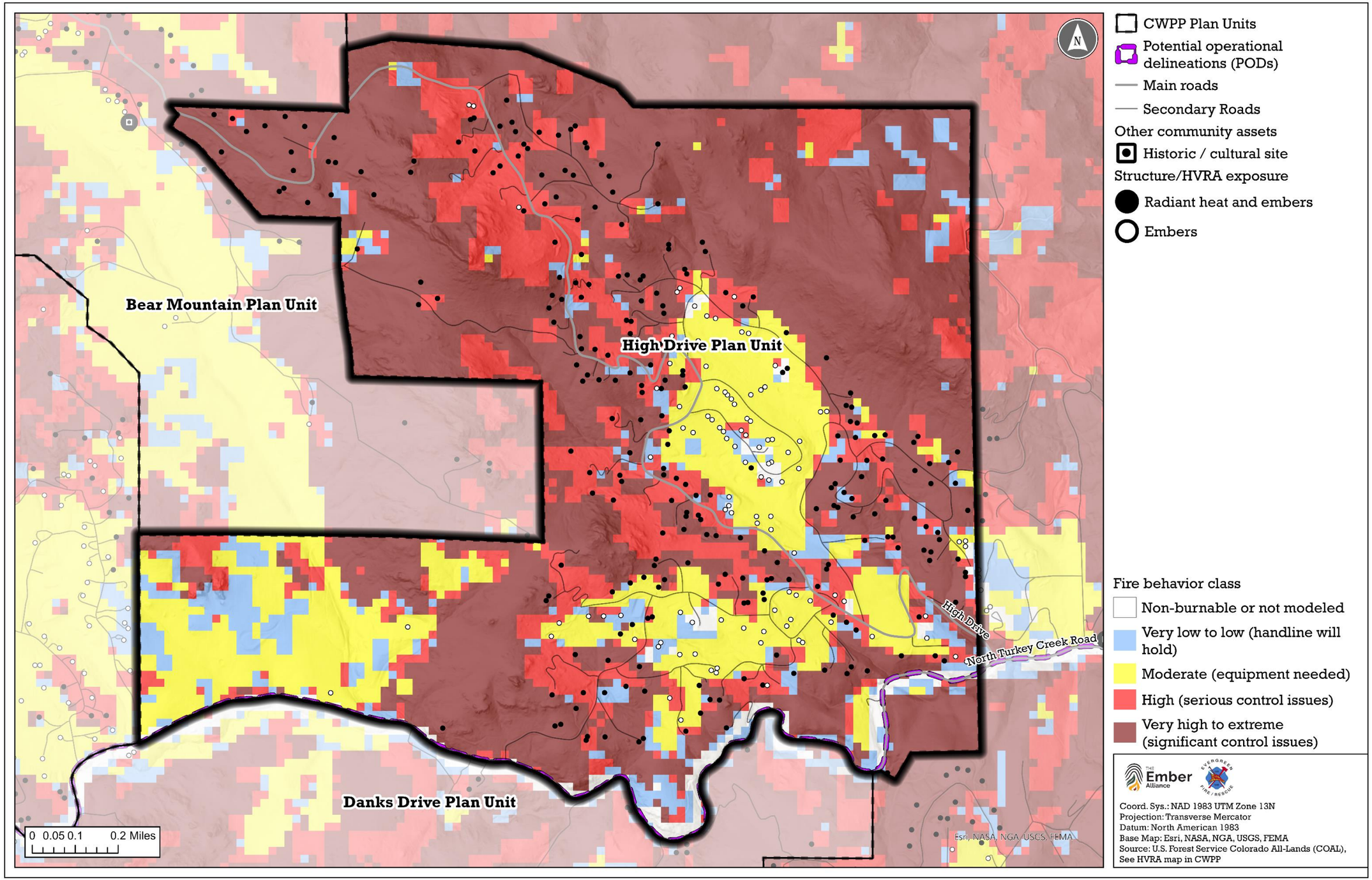
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
-
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods as well as the Lone Peak priority treatment area from the 2020 CWPP.
- Partner with neighboring plan units in developing Mitigation and Education Events.

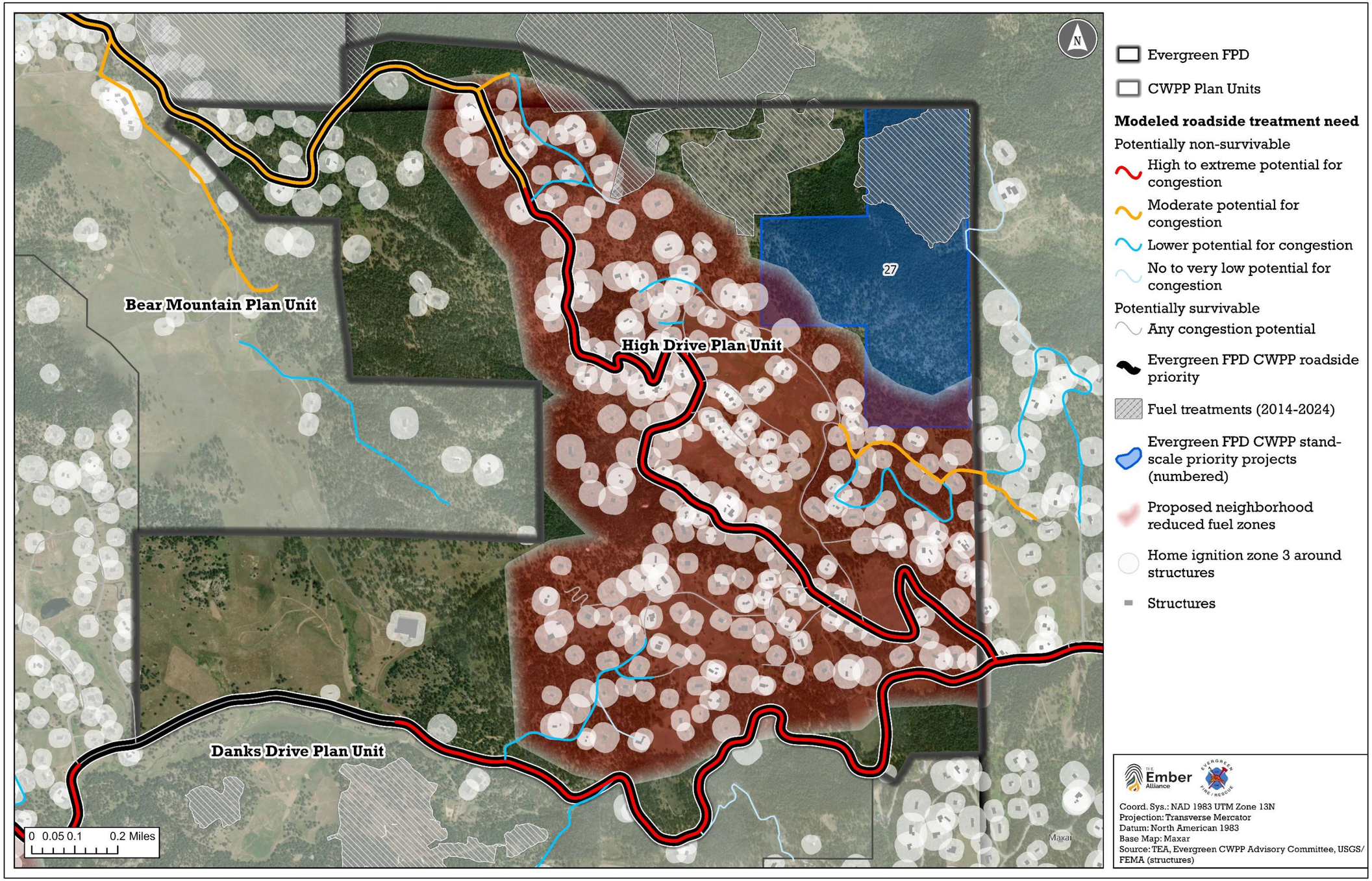
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.

- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Kerr Gulch

Higher relative risk rating

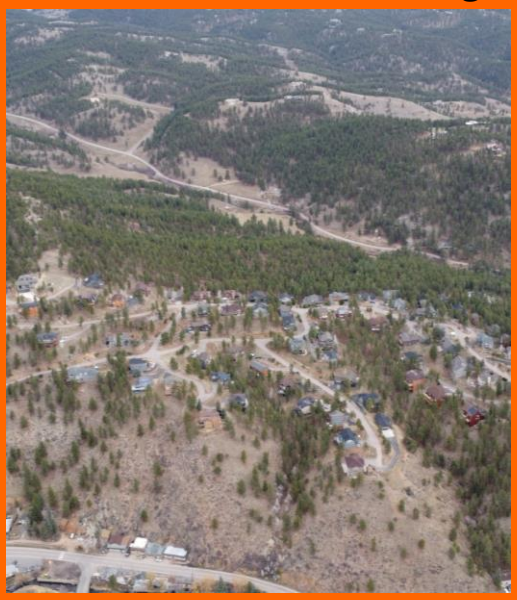


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

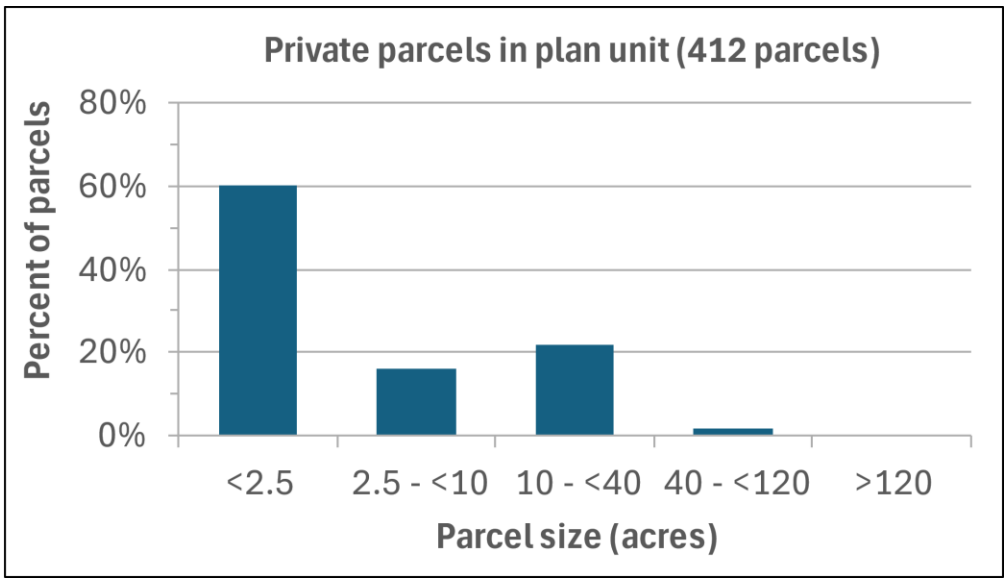
Under extreme fire weather and during a fire:

- **43%** of the area could experience very high to extreme fire behavior.
- **60%** of the area could experience moderate to high rates of fire spread.
- **49%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **75%** of roadways have potentially non-survivable conditions.
- This plan unit has a **moderate** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: All of this plan unit is private property. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 248 structures (e.g., houses, businesses, sheds, outbuildings) and 412 private parcels (excluding rights of ways) in this plan unit. Private parcels range from very small (<2.5 acres) to medium-sized (10-40 acres). There are several businesses in the El Rancho area, and highly valued resources and assets (HVRAs) in this plan unit include Evergreen Country Day School and a communication tower (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	100%
Total plan unit size: 2,596 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Much of the plan unit has moderate to steep slopes covered in ponderosa pine forests with variable densities. Low-density ponderosa pine forests in parts of the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires and outpace the suppression capabilities of initial firefighters arriving on scene. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops.

Several north and northwest-facing slopes support dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires up steep slopes. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

The valleys along Kerr Gulch and Swede Gulch support grasslands, shrublands, and riparian vegetation. Under hot, dry, and windy conditions, grasslands and shrublands could fuel fast-moving wildfires with long flame lengths. Long flame lengths emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Riparian vegetation such as willows, sedges, and cottonwood tend to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-home ignitions. There is an extreme potential for home-to-home ignitions in pockets of dense development in this plan unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from

the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in this plan unit.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Assisted living / adult care	Seven Dimensions Behavioral Health, LLC	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Communication tower		High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
School	Evergreen Country Day School	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Kerr Gulch Road	Lower^	Third priority	Yes

^While the segment of Kerr Gulch Road in Kerr Gulch Plan Unit was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still a priority roadway for the Evergreen FPD CWPP because

of its strategic importance for access to the area by firefighters and as a potential control line. To the south of the Kerr Gulch Plan Unit, Kerr Gulch Road could experience moderate congestion going through Kittredge.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are less than five known cisterns with a capacity of at least 10,000 gallons and four dip sites in this plan unit, but there are a limited number of wet hydrants. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. High-density developments in pockets of this plan unit could create dangerous and damaging conditions if wildfire were to begin spreading from home to home. Such fires can quickly outpace the ability of firefighters to defend homes.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Community Wildfire Ambassador contacted nearly 100% of residents.
- Maintained strong Community Wildfire Ambassador program with neighborhood leads.

- Established monthly communications.
- Encouraged home assessments and chipping program.
- Increased home assessments.
- Updated plan unit map.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

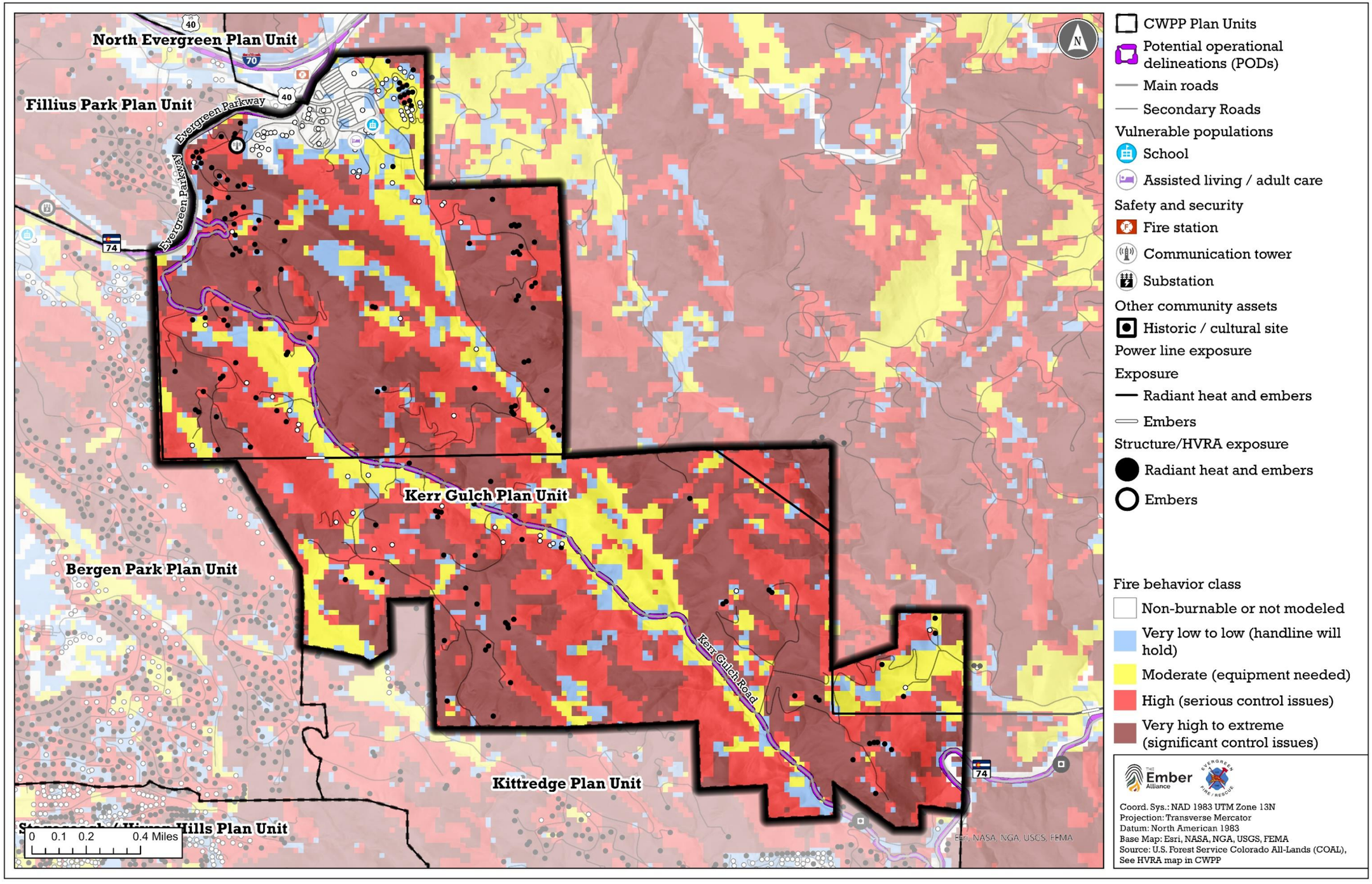
Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see maps in other CWPIPs for reference). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

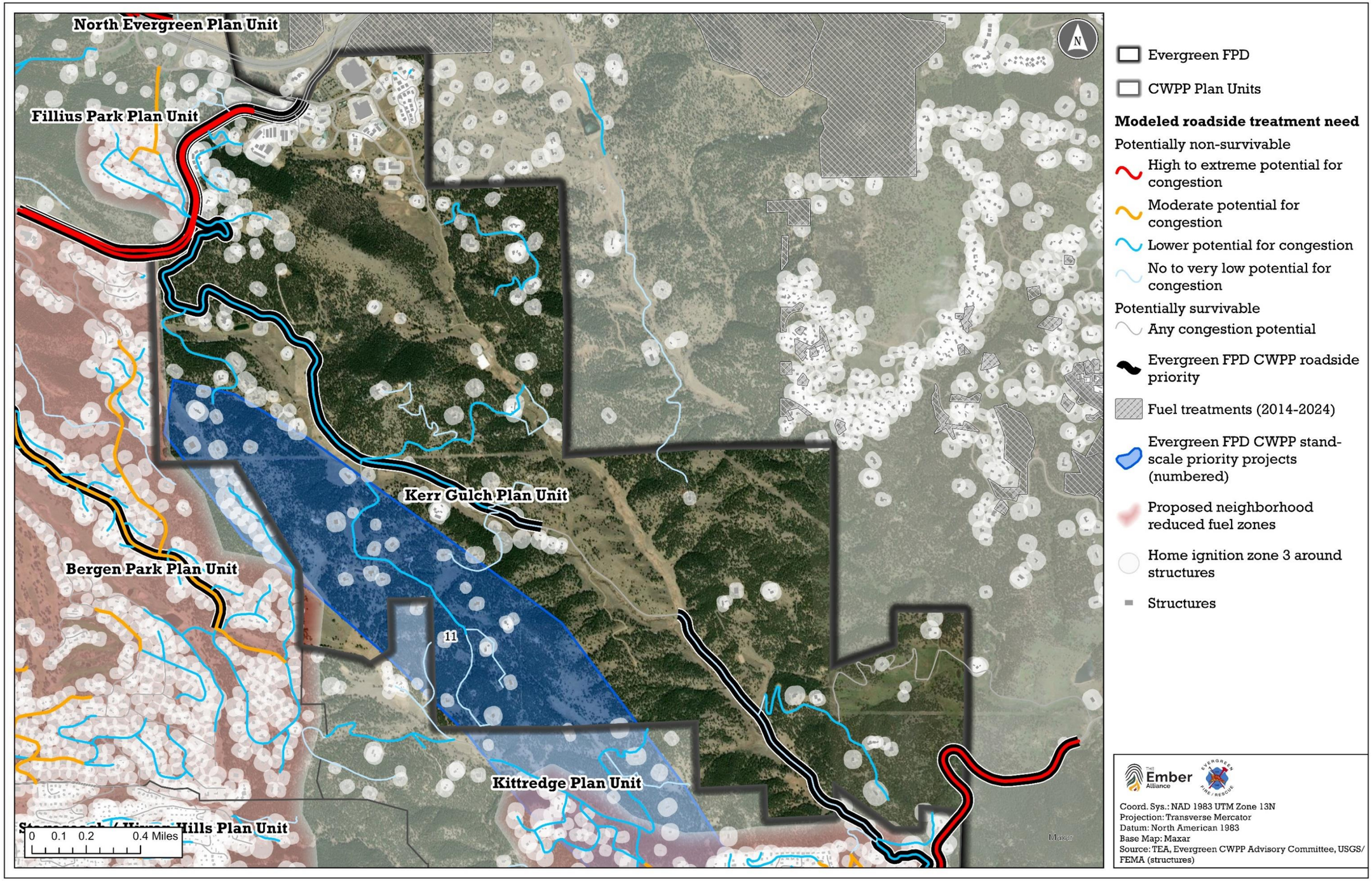
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Focus on secondary road mitigation as framework for the Community Wildfire Ambassador Team collaboration model.
- Explore implementation of a Community Roadside Mitigation Event and continue Potluck and/or HOA Education Event(s).

Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure*** **2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes. Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk.*

Kittredge

Higher relative risk rating

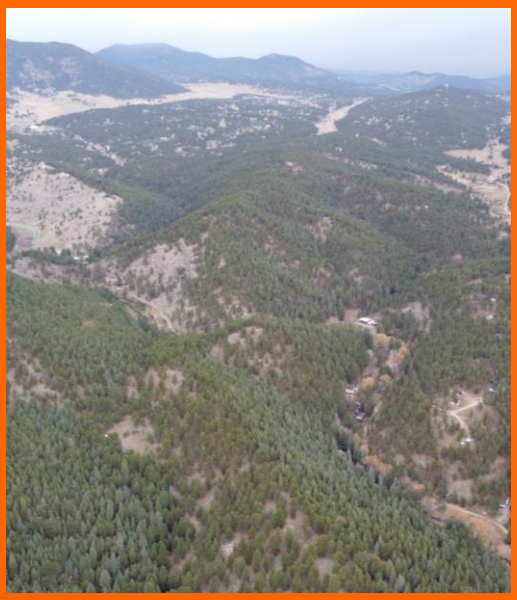


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

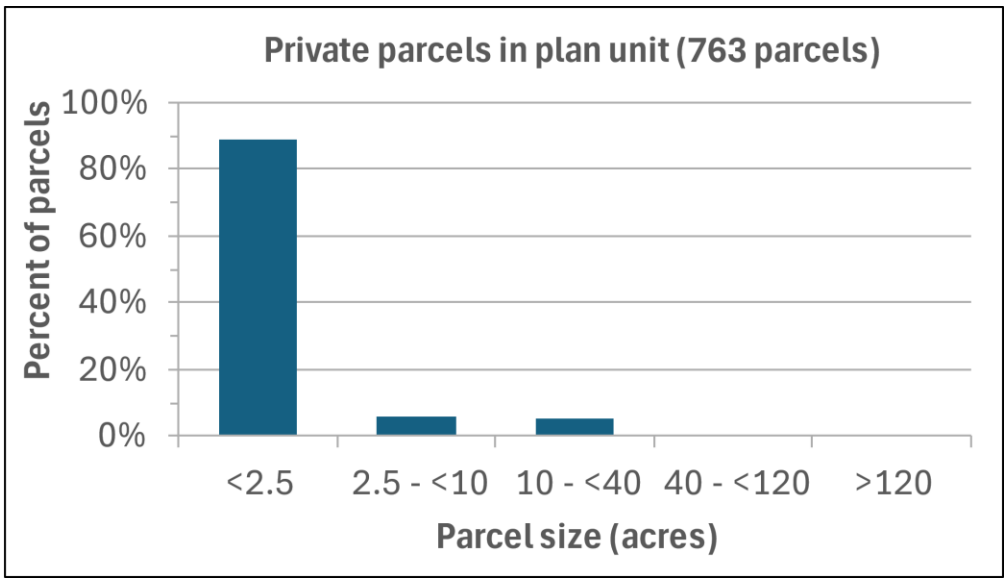
Under extreme fire weather and during a fire:

- **47%** of the area could experience very high to extreme fire behavior.
- **45%** of the area could experience moderate to high rates of fire spread.
- **55%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **85%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has the **highest** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Over half of this plan unit is private property. Public land in this plan unit are O'Fallon Park, Pence Park, and Kittredge Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 542 structures (e.g., houses, businesses, sheds, outbuildings) and 763 private parcels (excluding rights of ways) in this plan unit. Almost all private parcels are very small (<2.5 acres). Kittredge includes a downtown area with businesses, and highly valued resources and assets (HVRAs) in this plan unit include Evergreen Fire Rescue Station 6 and Kittredge Post Office (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	57%
Denver Mountain Parks	43% (O'Fallon Park and Pence Park)
Jefferson County	<1% (Kittredge Park)
Total plan unit size: 2,612 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Much of the plan unit has steep slopes covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce or ponderosa pine forests with variable densities. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslopes. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Low- to moderate-density ponderosa pine forests in parts of the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires and outpace the suppression capabilities of initial firefighters arriving on scene. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and can support active crown fires.

The shallow valleys running parallel to South Kittredge Park Road and Myers Gulch Road support grasslands, shrublands, and riparian vegetation. Under hot, dry, and windy conditions, grasslands and shrublands can fuel fast-moving wildfires with long flame lengths. Long flame lengths emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Riparian vegetation such as willows, sedges, and cottonwood tend to have high fuel moisture and can serve to slow the spread of wildfire, but riparian vegetation can burn and carry wildfire during droughts.

The density of homes interspersed with trees and grasses in Kittridge can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-home ignitions. There is an extreme potential for home-to-home ignitions in downtown Kittredge and pockets of dense development in this plan unit. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Homes tend to be newer and built with more ignition-resistant material on

the north side of Highway 74. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are also some non-owner-occupied residences in this plan unit, and it is the responsibility of the property owners to make their rentals safe.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Fire station	Evergreen Fire Rescue Station 6	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Ice House	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Historic huts built by the CCC on O'Fallon	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Old Kittridge School	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Post office	Kittredge Post Office	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "higher" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network, as well as traffic from businesses and recreators at O'Fallon Park and Panorama Point Trailhead, could result in some congestion during an emergency. There are some properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Kerr Gulch Road	Moderate	Third priority	Yes
Myers Gulch Road	Moderate	Third priority	Yes
Hill Top Drive	Moderate		
Meadow View Road	Moderate		
South Piney Ridge Road	Moderate		
Sweetbriar Trail	Moderate		
Welch Avenue	Moderate		

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are hydrants in the north portion of the plan unit and one dip site. There are no known cisterns with a capacity of at least 10,000 gallons. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. If wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with

wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Held bi-annual community chipping initiative and a trash drop-off to remove slash.
- Held annual wildfire education event that has grown in attendance and is tied into community organization.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

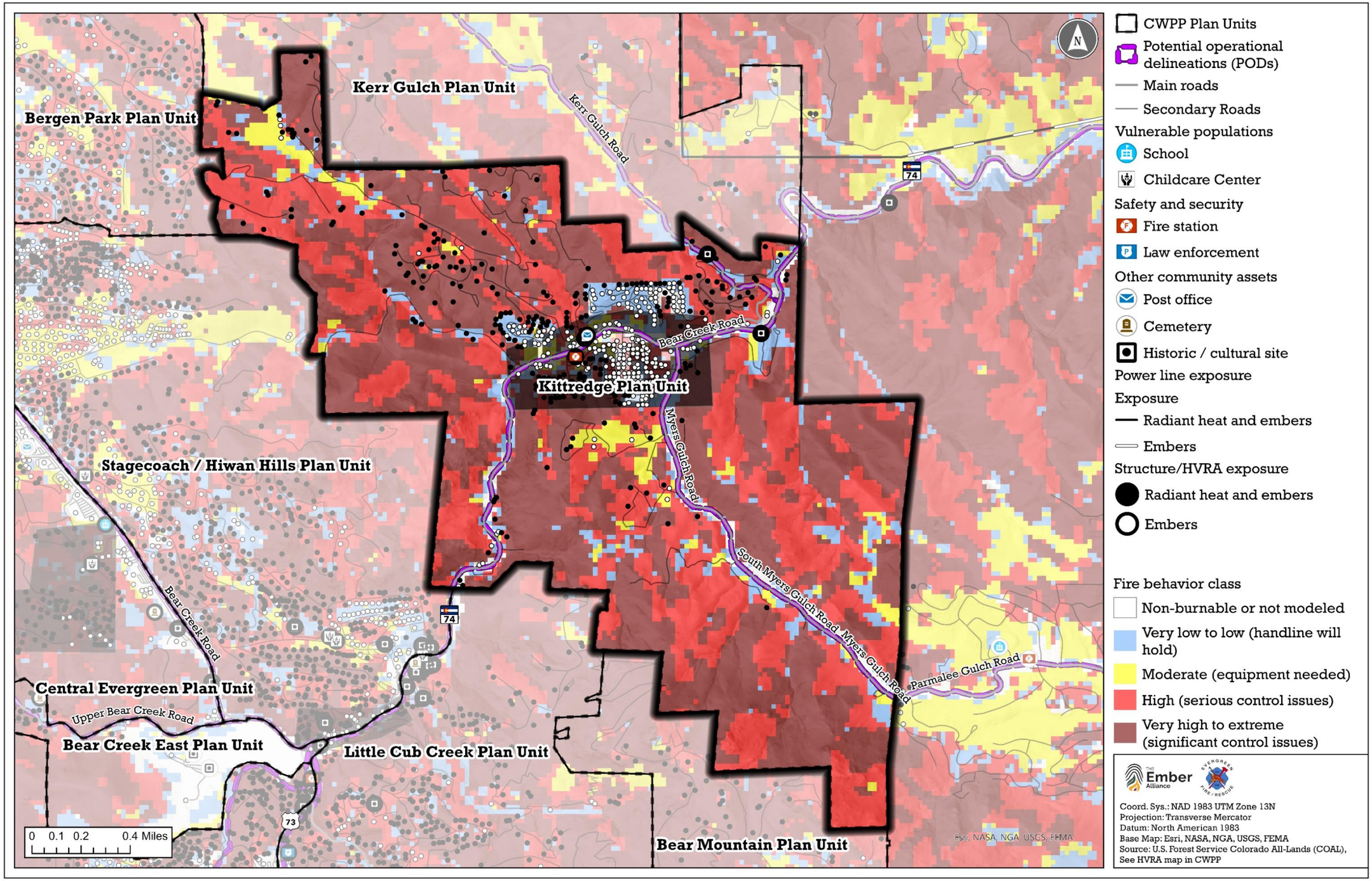
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with EFR and Jefferson County to identify a feasible secondary egress route out of the plan unit. There is currently only one primary egress route along this plan unit.
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.

- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Work with the County for Hwy 74 mitigation.
- Explore conducting roadside mitigation on Myers Ridge Road.
- Explore potential landscape treatments across the large acre parcels along the west and northwest flank of plan unit.
- Continue implementation of Community Slash Events and Community Education Events
- Explore implementation of Community Mitigation Event(s) and expansion of Education Event(s) across the plan unit.

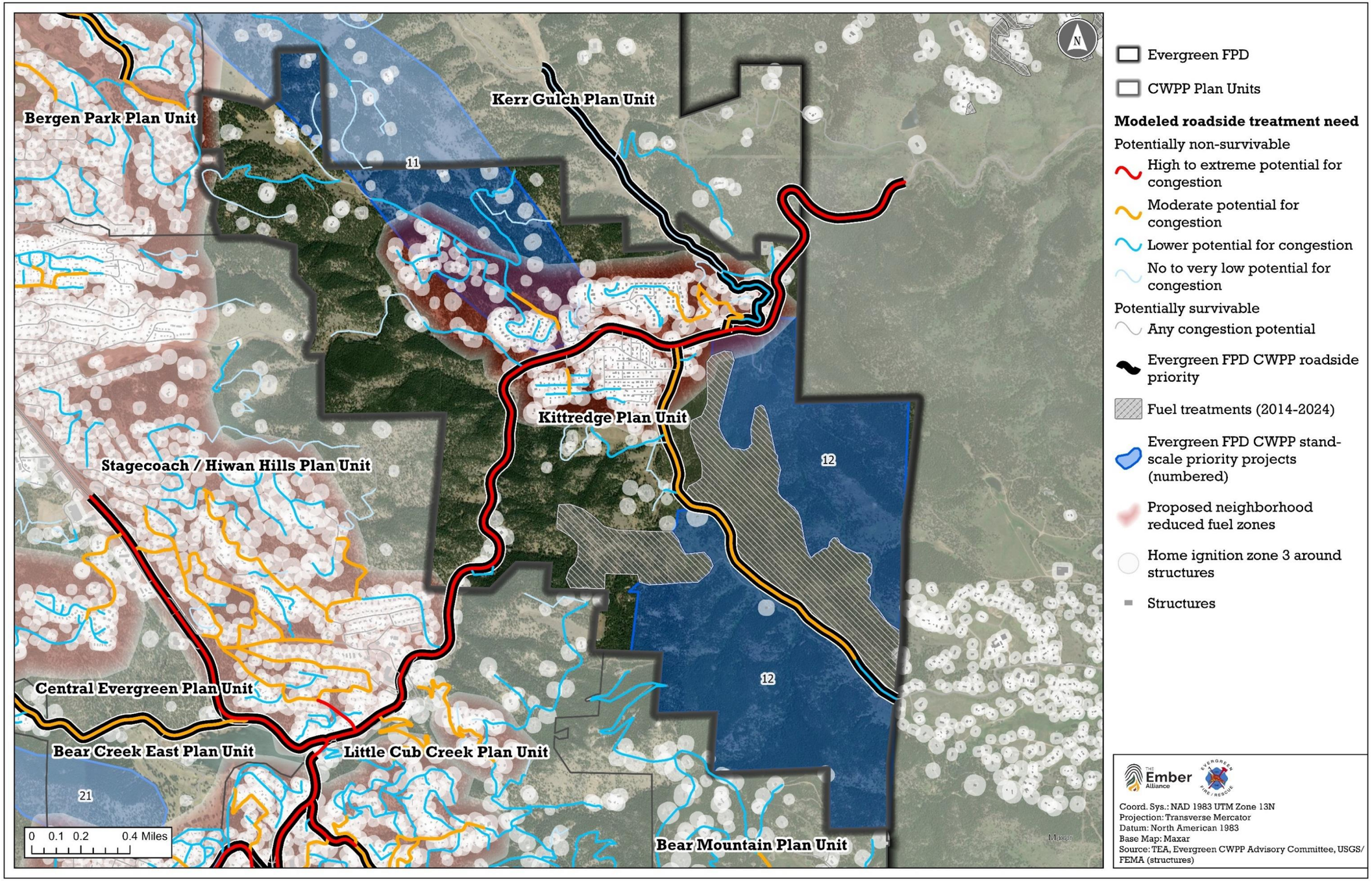
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore

reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Little Cub Creek

Most extreme relative risk rating

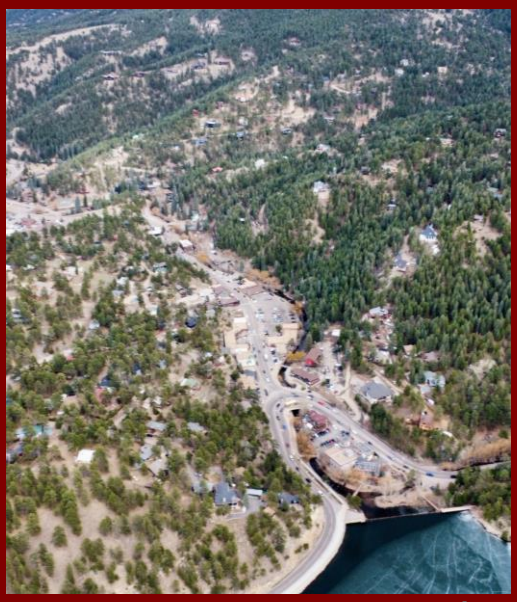


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

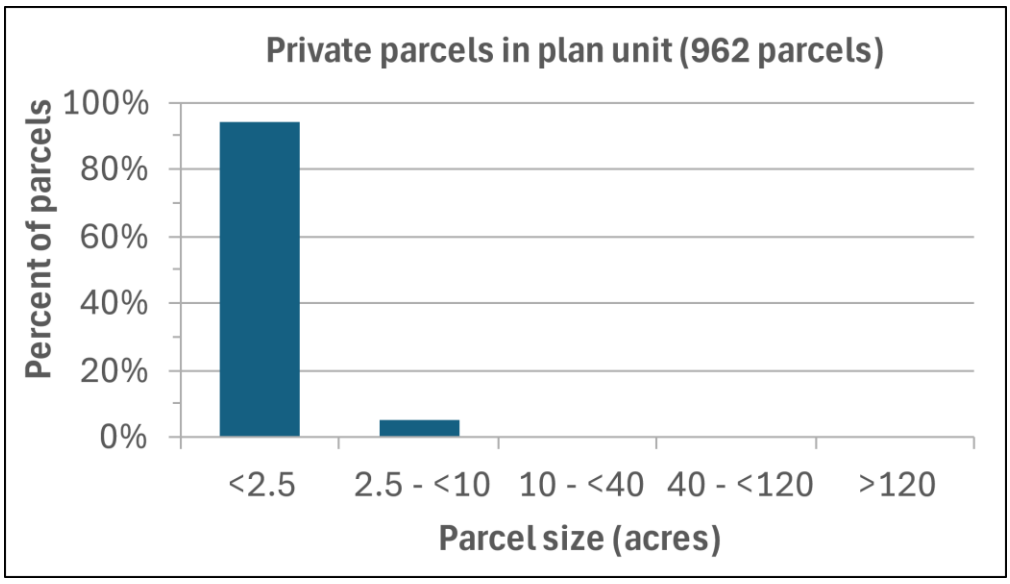
Under extreme fire weather and during a fire:

- **64%** of the area could experience very high to extreme fire behavior.
- **60%** of the area could experience moderate to high rates of fire spread.
- **90%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **98%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **high** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: A majority of this plan unit is private property (80%). Public land in this plan unit is Bell Park managed by Denver Mountain Parks. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 324 structures (e.g., houses, businesses, sheds, outbuildings) and 962 private parcels (excluding rights of ways) in this plan unit. Almost all private parcels are very small (<2.5 acres). This plan unit includes portions of the Evergreen downtown with numerous businesses. Highly valued resources and assets (HVRAs) in this plan unit include a cemetery and seven historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	80%
Denver Mountain Parks	20% (Bell Park)
Total plan unit size: 1,038 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. The northern and western parts of the plan unit have steep slopes covered in dense conifer forests. North- and northwest-facing slopes support dense, mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Some drier, south-facing slopes in this plan unit support low- to moderate-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

The density of homes scattered throughout the forest in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks has undertaken extensive forest restoration treatments and roadside fuel treatments in Cub Creek and Bell Parks to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions. These treatments can also create safer conditions for citizens during evacuations.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the “extreme” category for hazards in the home ignition zone. The main threats to homes in this plan unit are radiant heat and embers from burning vegetation or nearby structures. There is an extreme potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Practically no homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and

other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are numerous multi-unit properties in this plan unit, so coordination among owners and/or the property management organization is crucial to accomplish home hardening and fuel removal around these structures. Coordination by the Evergreen Business Association might help encourage business owners to engage in structure hardening and fuel mitigation. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Cemetery	All Souls Grove Columbarium	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Childcare center	Episcopal Day School of Evergreen	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Bancroft Cabin – Nature Center	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Evergreen Conference Lower Complex	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Old EVFD Fire Station	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Saint Marks	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Saint Raphael's	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Forest Heights Lodge	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Highland Haven - Dailey Cabin	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

Law enforcement	Jefferson County Sheriff's Office Mountain Precinct	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in some congestion during an emergency.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Highway 73	High to extreme	First priority	Yes
Little Cub Creek Road	High to extreme	Second priority	
Stanley Park Road	Lower^	Second priority	
Independence Trail	Moderate		
Camel Heights Road	Moderate		
Forest Hill Road	Moderate		
Mountain Park Road	Moderate		
South Road A	Moderate		
Trinchera Trail	Moderate		

^While Stanley Park Road was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still a priority roadway for the Evergreen FPD CWPP because of its strategic importance for access to the area by firefighters. Depending on the direction of fire spread, this road might be heavily utilized by evacuees.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are multiple hydrants available in this plan unit; however, the condition and usability of these hydrants are not known. Most of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. If wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Established Community Wildfire Ambassador Team.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by

individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

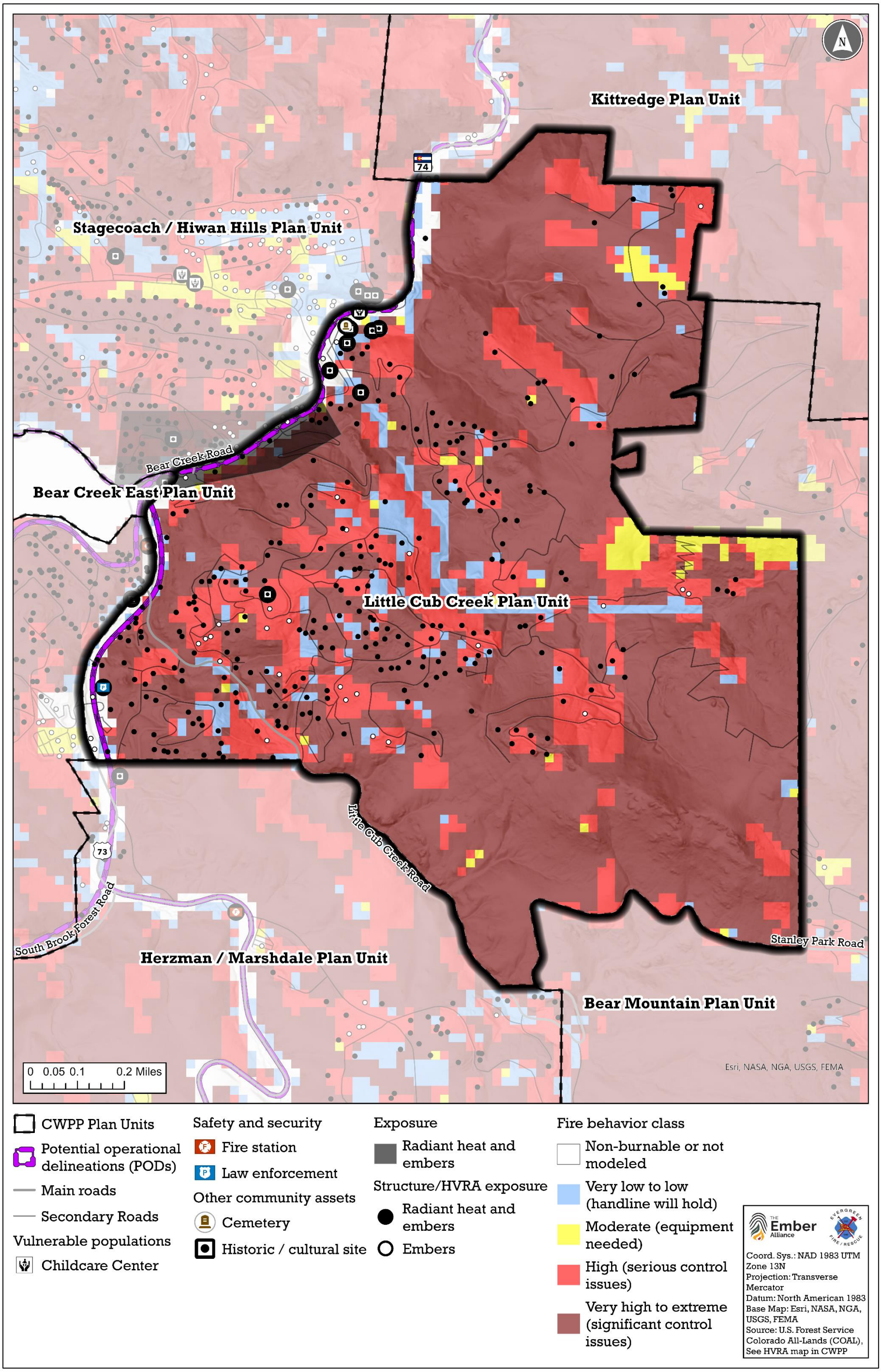
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- Work with Jefferson County for roadway improvements.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment and communication across plan unit.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Evacuation awareness and preparedness is critical in this plan unit.
- Continue focused Neighborhood Roadside Mitigation Event(s) and Potluck Education Event(s).

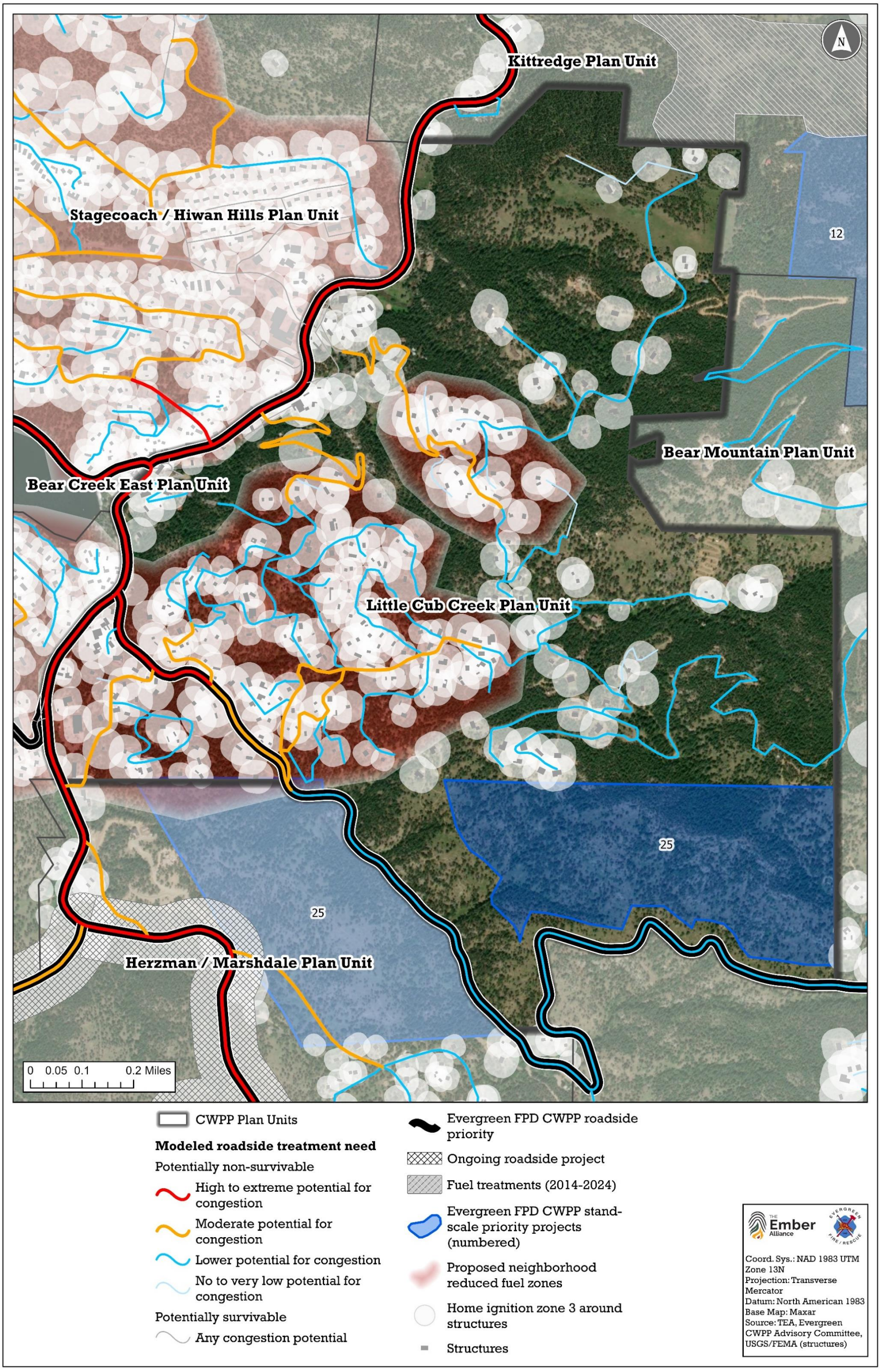
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones.** Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).

- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

North Evergreen

High relative risk rating

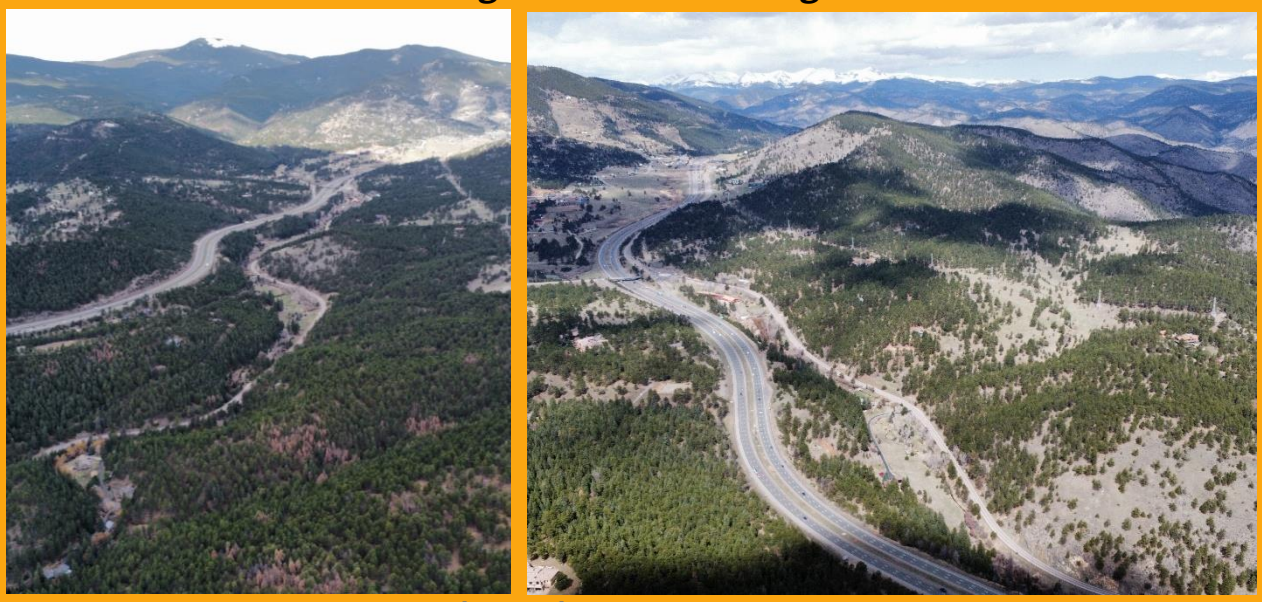


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

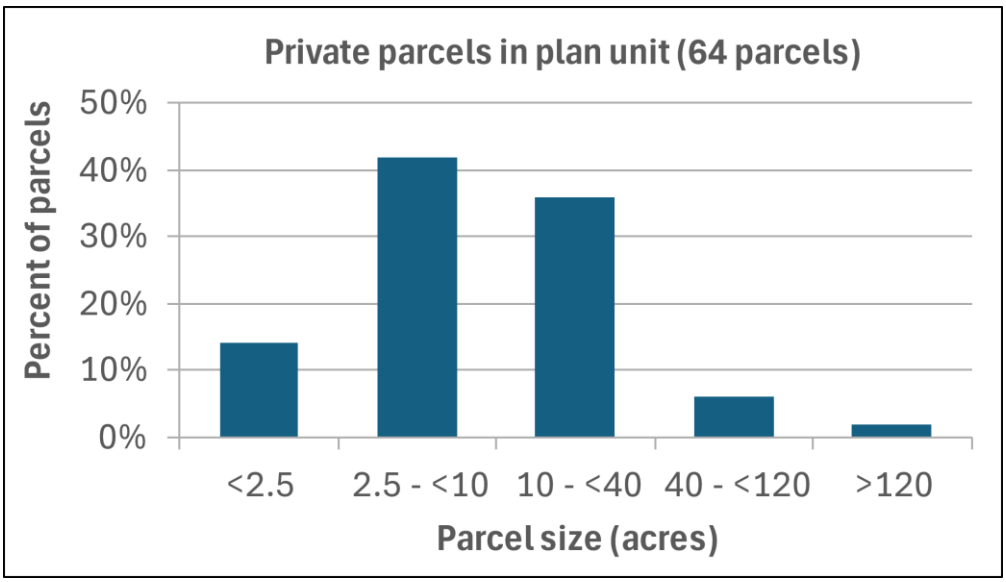
Under extreme fire weather and during a fire:

- **48%** of the area could experience very high to extreme fire behavior.
- **60%** of the area could experience moderate to high rates of fire spread.
- **71%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **71%** of the roads have potentially non-survivable conditions.
- This plan unit has a **moderate** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Practically all this plan unit is private property (99%). Public land in this plan unit is a small portion of Clear Creek Canyon Park. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 75 structures (e.g., houses, businesses, sheds, outbuildings) and 64 private parcels (excluding rights of ways) in this sparsely populated plan unit. Most private parcels are small (2.5 - <10 acres) and medium-sized (10 - <40 acres), but there are several larger parcels in this plan unit.

Landownership	Percent of plan unit
Private property	99%
Jefferson County	1% (Clear Creek Canyon Park)
Total plan unit size: 2,437 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category. Much of this plan unit has moderate to steep south-facing slopes covered in ponderosa pine forests with variable tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Steep north- and northwest-facing slopes in the plan unit support dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

The northeastern part of the plan unit support grasslands and shrublands that can fuel fast-moving wildfires with long flame lengths under hot, dry, and windy conditions. Long flame lengths emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "high" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, wooden sheds, barns, or accessory dwelling units. A few homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are many accessory dwelling units, barns, and outbuildings in this plan unit, and if hazards are not mitigated around these structures, they can pose a risk to nearby primary structures if they ignite during a wildfire. See the map at the end of this CWPIP for potential exposure of structures to radiant heat and embers under extreme fire weather conditions.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Many roadways are lined with dense vegetation that could create hazardous conditions during wildfires. There are many properties with livestock, which can increase evacuation time. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
US 40	High to extreme	First priority	
Soda Creek Drive	Lower^		Yes

^While Soda Creek Drive was predicted to have lower congestion under the assumptions used for evacuation modeling, it is still an important roadway for mitigation in the North Evergreen Plan Unit because of its strategic value as a potential control line.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are no wet hydrants or known cisterns with a capacity of at least 10,000 gallons in this plan unit. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Received $19,300 grant for US-40 thinning.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see maps in other CWPIPs for reference). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

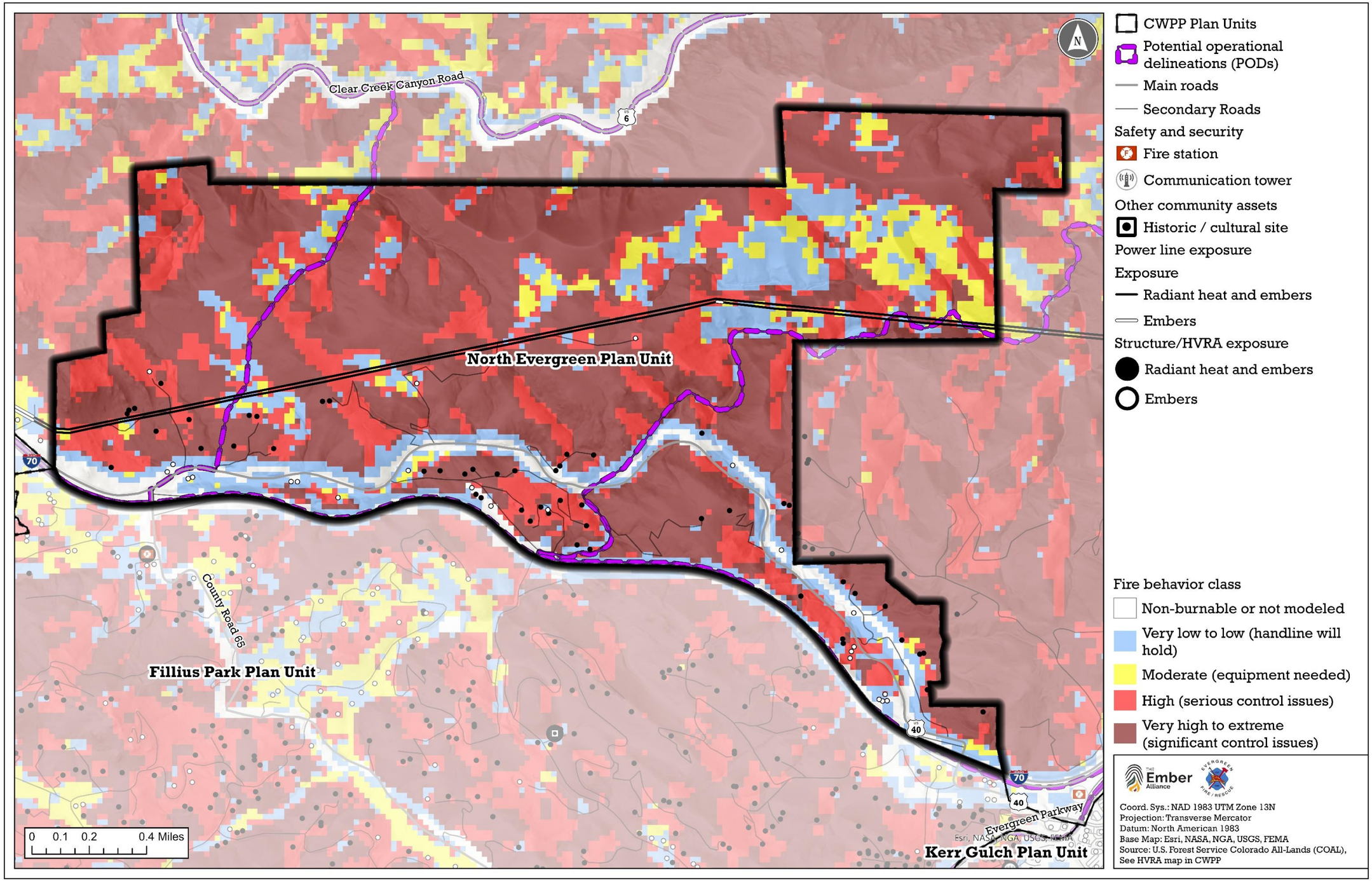
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).

- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Expand Community Wildfire Ambassador Team recruitment across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Enhance evacuation knowledge for Hwy 40.
- Conduct roadside mitigation of Hwy 40.
- Partner with JCD and CSFS for larger scale mitigation work on private properties

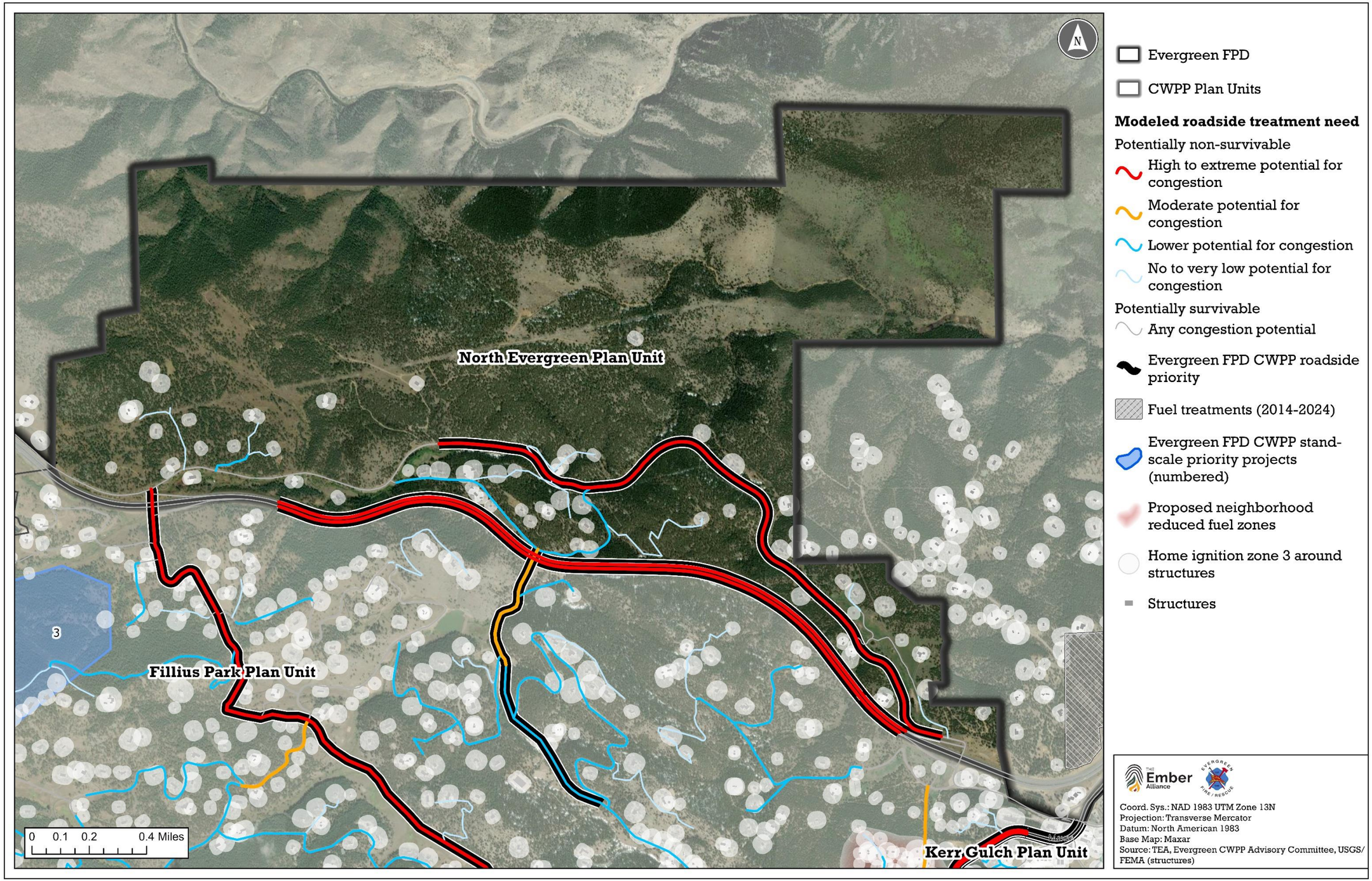
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6)

consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience.



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes.*

North Turkey Creek

Higher relative risk rating

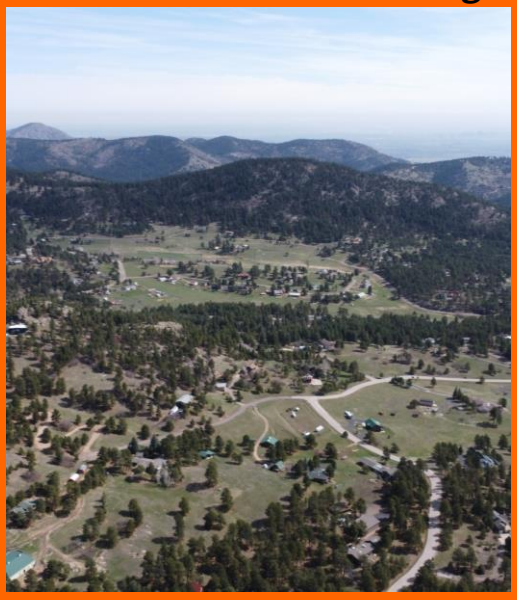


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

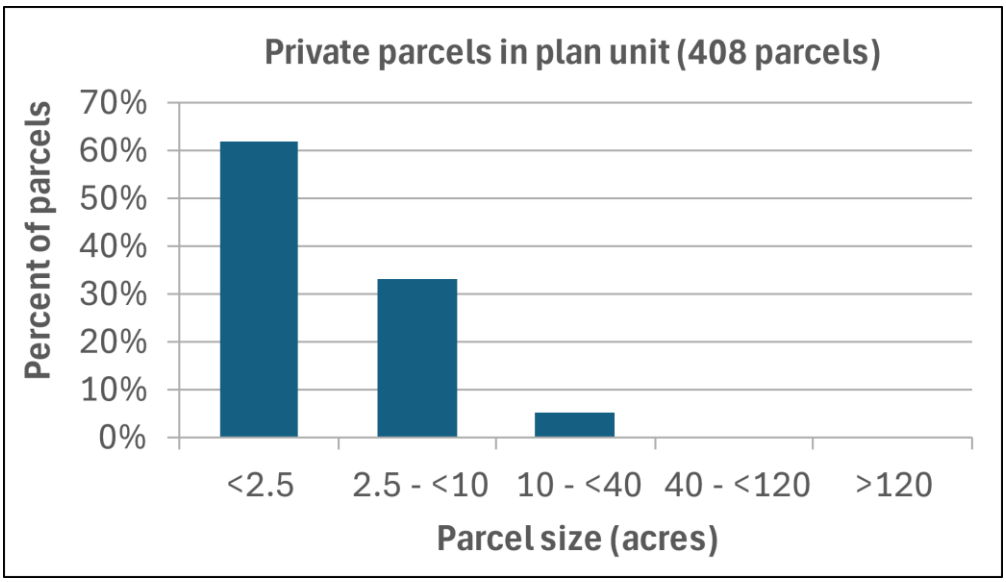
Under extreme fire weather and during a fire:

- **48%** of the area could experience very high to extreme fire behavior.
- **58%** of the area could experience moderate to high rates of fire spread.
- **75%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **76%** of roadways have potentially non-survivable conditions.
- This plan unit has a **high** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Almost all of this plan unit is private property (96%). Public land in this plan unit are Hobbs Peak and Stanley Park managed by Denver Mountain Parks. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 376 structures (e.g., houses, businesses, sheds, outbuildings) and 408 private parcels (excluding rights of ways) in this plan unit. Most private parcels are small (<10 acres), and some properties fall within HOAs. Marshdale Elementary School is located in North Turkey Creek.

Landownership	Percent of plan unit
Private property	96%
Denver Mountain Parks	4% (Hobbs Peak and Stanley Park)
Total plan unit size: 1,497 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "higher" relative risk category, but potential fire behavior is variable across the plan unit. Some parts of the plan unit have steep north- and northwest-facing slopes covered in dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Most of the plan unit is covered in ponderosa pine forests with variable densities. Some forests on drier, south-facing slopes support low- to moderate- tree densities. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Passive or active crown fires can develop where shrubs and small trees grow under tall trees and permit the transition of surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

The flat area in the southeastern part of the plan unit and the area along Little Cub Creek in the north support and grasslands. Grasslands can fuel fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Under hot, dry, and windy conditions, grasslands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

Riparian vegetation along Little Cub Creek and swales in the southeastern part of the plan unit have higher soil and fuel moisture during parts of the year, which can moderate fire behavior. However, grasses can dry out rapidly under hot, dry, and windy conditions can carry fast-moving wildfires with long flame lengths.

The density of homes interspersed with forests and grasslands in this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Denver Mountain Parks has undertaken forest restoration treatments in Stanley and Hobbs Peak Parks in this plan unit and in Bell Park to the north to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could provide protection to neighborhoods by moderating wildfire behavior and creating opportunities for firefighters to safely and effectively engage in suppression actions. Some of these treatments occurred along roads and can create safer conditions for citizens during evacuations.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "higher" category for hazards in the home ignition zone. The main threats to homes in this plan unit are intense radiant heat and embers from burning vegetation. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding and decking. Many properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit) in the plan unit.

This plan unit includes the Marshdale Elementary School that could be exposed to a high density of embers from burning vegetation and/or nearby burning structures. On-the-ground assessments of this property can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
School	Marshdale Elementary School	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in some congestion during an emergency. Cell service is moderately unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73^	High to extreme	Second priority	Yes
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes
Silverhorn Drive	Moderate		
South Kilimanjaro Drive	Moderate		
Little Cub Creek Road	Lower*		

^Note: While portions of Highway 73 were predicted to have survivable conditions, all of Highway 73 is a priority roadway for the Evergreen FPD CWPP due to the potential for high to extreme congestion, and this road's strategic importance as a potential control line. On-the-ground assessments can determine what work might need to be done along different sections of this roadway.

*While the portion Little Cub Creek Road in the North Turkey Creek Plan Unit was predicted to have lower congestion under the assumptions used for evacuation modeling, this road could experience moderate to extreme congestion north of North Turkey Creek.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are three dry hydrants and four dip sites in this plan unit, but there are no wet hydrants or known cisterns with a capacity of at least 10,000 gallons. Some of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Hosted multiple chipping events across HOAs.
- Created 5.4 acre shaded fuel break on Olympus drive.
- Completed 6.33 acre shaded fuel break on Timbers Drive (east).
- Denver Mountain Parks created a fuel break on Hobbs Peak.
- Increased home assessments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see maps in other CWPIPs for reference). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

Focus Areas for Ambassadors

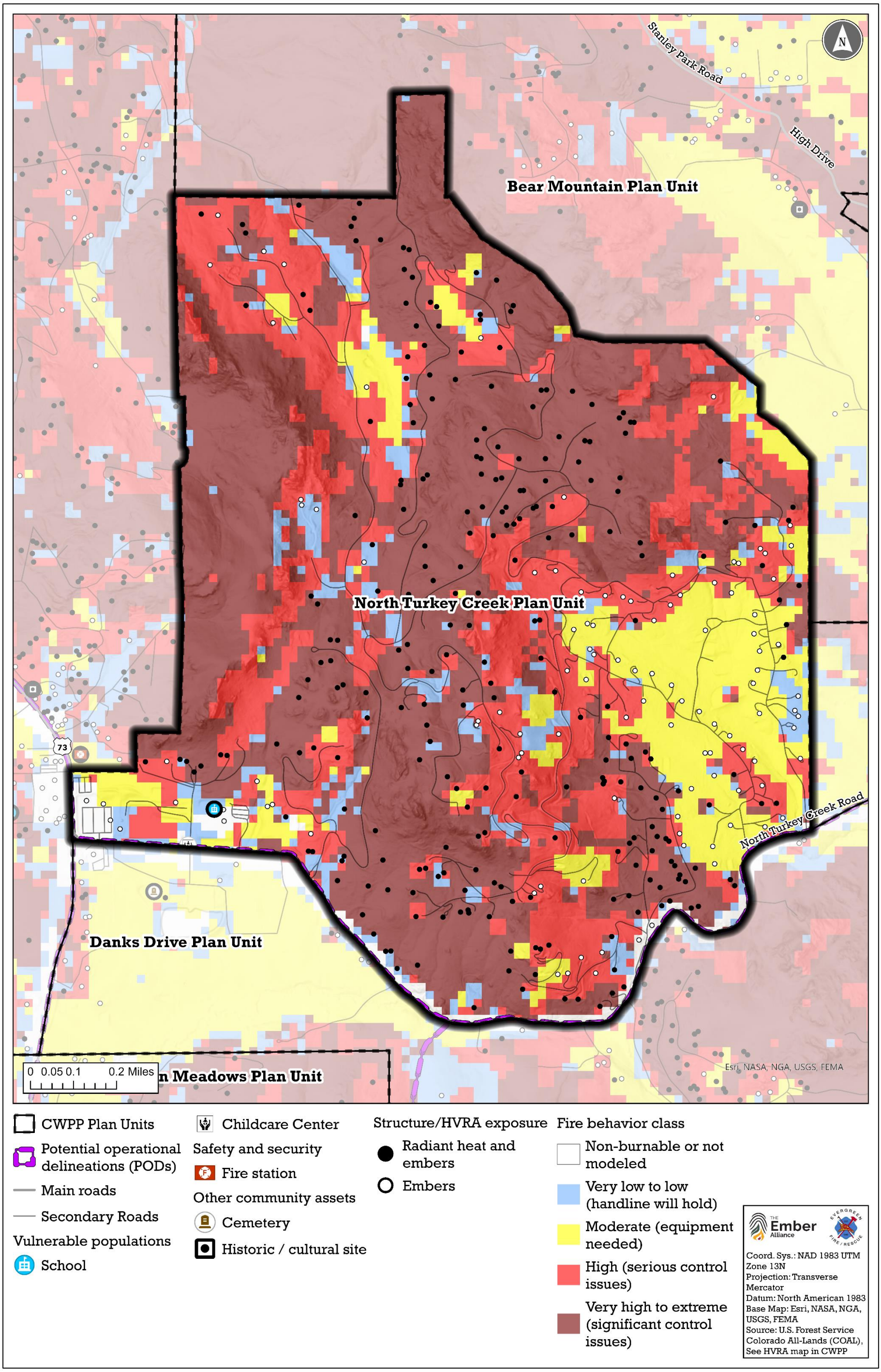
- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.

- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Expand Community Wildfire Ambassador Team recruitment across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Build Community Wildfire Ambassador Team and collaboration across plan unit and HOAs.
- Continue focused Neighborhood Roadside Mitigation Event(s) and HOA Potluck Education Event(s) with expansion across the plan unit.

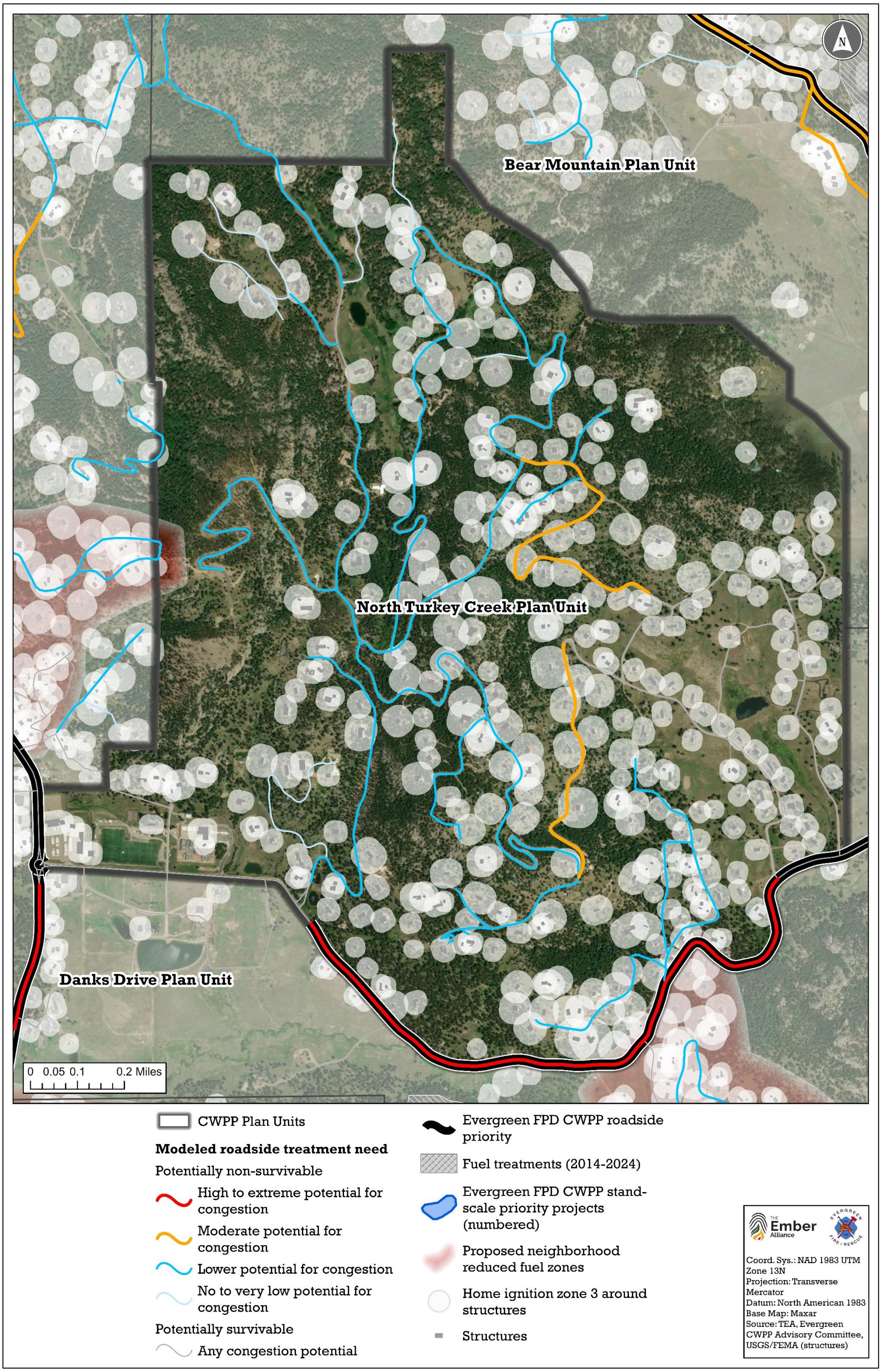
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes.
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home but without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore

reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table* 4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ 3 around each structure, with HIZ 3 being larger for structures on steeper slopes. Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk.*

Stagecoach/Hiwan Hills

High relative risk rating

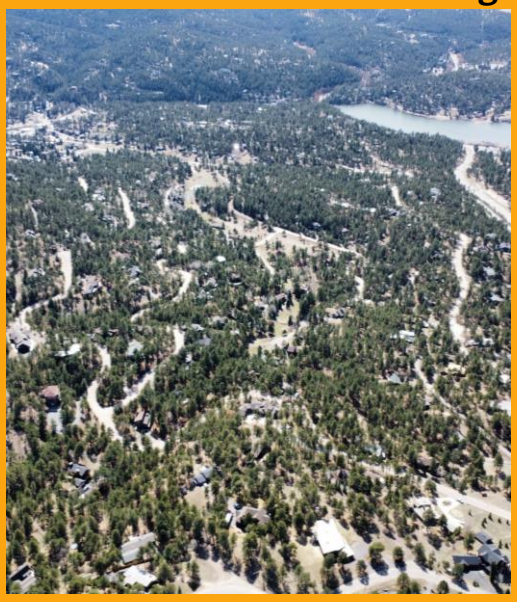


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

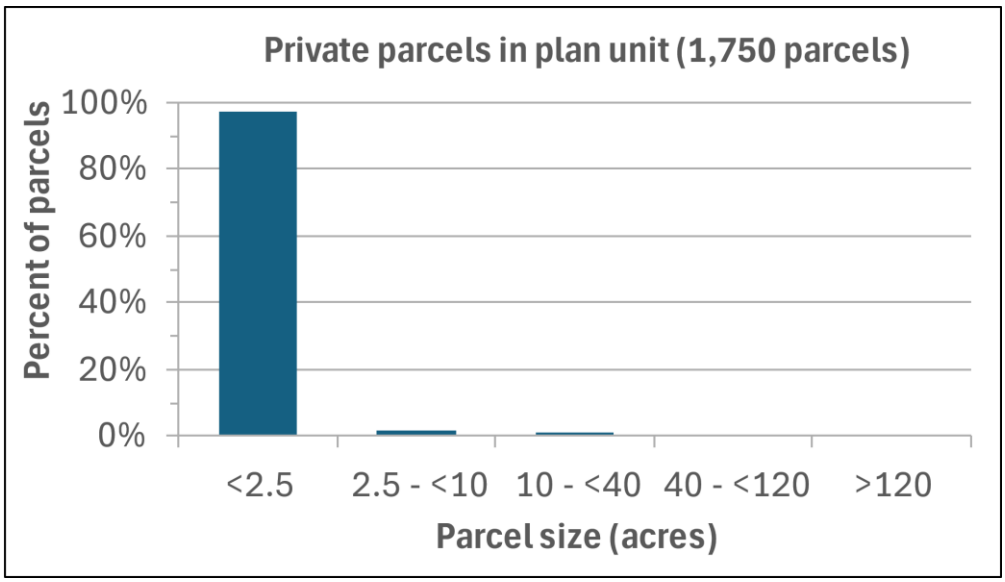
Under extreme fire weather and during a fire:

- **40%** of the area could experience very high to extreme fire behavior.
- **50%** of the area could experience moderate to high rates of fire spread.
- **62%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **54%** of roadways have potentially non-survivable conditions.
- This plan unit has a **moderate** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has the **highest** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Jefferson County

General description: Practically all this plan unit is private property (98%). Public land in this plan unit are Dedisse Park and the Hiwan Homestead Museum. Based on best available data from the U.S. Geological Survey and Jefferson County, there are 1,374 structures (e.g., houses, businesses, sheds, outbuildings) and 1,750 private parcels (excluding rights of ways) in this densely populated plan unit. Almost all private parcels are very small (<2.5 acres), and some properties fall within HOAs. This plan unit includes portions of the Evergreen downtown with numerous businesses. Highly valued resources and assets (HVRAs) in this plan unit include childcare centers and historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	98%
Denver Mountain Parks	2% (Dedisse Park)
Jefferson County	<1% (Hiwan Homestead Museum)
Total plan unit size: 1,688 acres	



Vegetation, topography, and potential fire behavior: The overall relative risk for high- to extreme-intensity fire behavior in this plan unit falls in the "high" relative risk category, but potential fire behavior is variable across this plan unit. Several steep, north-facing slopes in the plan unit are covered in continuous dense mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. Dense forests with abundant ladder fuels can carry active crown fires, especially if strong winds push fires upslopes. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Most forests in this plan unit are fragmented by roadways and housing developments. Low- to moderate-density ponderosa pine forests throughout the plan unit have abundant understories of grasses and shrubs that can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops.

Under hot, dry, and windy conditions, grasslands and shrublands along Stagecoach Boulevard could carry fast-moving wildfires with long flame lengths. Fast-moving wildfires can outpace the suppression capabilities of initial firefighters arriving on scene, and long flame lengths emit significant radiant heat that can ignite nearby structures and threaten the safety of wildland firefighters.

The density of homes interspersed with forests and grasslands throughout this plan unit can exacerbate wildfire behavior if fire transitions from vegetation to homes, from home to home, and from homes back to vegetation.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate-burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "extreme" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation or nearby structures. Some homes could be exposed to intense radiant heat from burning vegetation, which might initiate home-to-home ignitions. There is an extreme potential for home-to-home ignitions due to dense development across this plan unit. Most homes have ignition-resistant class-A roofs, but most homes are built with combustible siding, decking, and fencing. Fences can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Very few homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many

homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, or wooden sheds. A few homes are located mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes, businesses, and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are some multi-unit properties and townhomes in the plan unit, so coordination among owners and/or the property management organization is crucial to accomplish home hardening and fuel removal around these structures. There are also many non-owner-occupied residences in this plan unit, and it is the responsibility of the property owners to make their rentals safe. Coordination by the Evergreen Business Association might help encourage business owners to engage in structure hardening and fuel mitigation. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	**Name**	**Type of exposure**	**Normalized burn probability[1]**
Childcare center	Evergreen Academy	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Childcare center	The Great Escape Preschool	High density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)
Historic / cultural site	Bucannon Show Barn – Mt. Home	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Ebenezer in the Pines	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Center Stage Conference Meeting House	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Hart House / Lariat Lodge	High density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Williams House	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)
Historic / cultural site	Hiwan Homestead Museum Complex	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	High (50-<75%)

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Road & Bridge	Jefferson County Road & Bridge Shop	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Moderate (25-<50%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "high" relative risk category. Some roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Some roadways are lined with dense vegetation that could create hazardous conditions during wildfires. The density of homes and configuration of the roadway network could result in high levels of congestion during an emergency. There are some properties with livestock, which can increase evacuation time.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Douglas Park Road	High to extreme		
Lewis Ridge Road	High to extreme^		
Alpine Drive	Moderate		
Aspen Lane	Moderate		
Cedar Circle	Moderate		
Clover Lane	Moderate		
Fir Drive	Moderate		
Fireweed Drive	Moderate		
Forest Way	Moderate		
Hilltop Drive	Moderate		
Histead Drive	Moderate		
Meadow Drive	Moderate		
Pine Drive	Moderate		
Ponderosa Drive	Moderate		
Wild Rose Drive	Moderate		

^ Lewis Ridge Road was modeled as having a moderate potential for congestion, but based on local knowledge, this road could experience high to extreme congestion.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "higher" relative risk category. There are numerous wet hydrants and one dip site in this plan unit, but no known cisterns with a capacity of at least 10,000 gallons. Some homes and roadways have visible and reflective signs, but many of the driveways are steep, narrow, or long, which can make them inaccessible to firefighters. Poor road access is particularly notable in the Hilltop area. If wildfire were to begin spreading from home to home, a fire could create dangerous and damaging conditions and quickly outpace the ability of firefighters to defend homes due to the high density of structures in this plan unit.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- Increased awareness of the need to create defensible space around homes.
- Increased effort by residents to mitigate weeds and combustible debris around homes.
- More homeowners used EFR home assessment program.
- JCD and CSFS conducted large acreage treatments.

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see map below). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

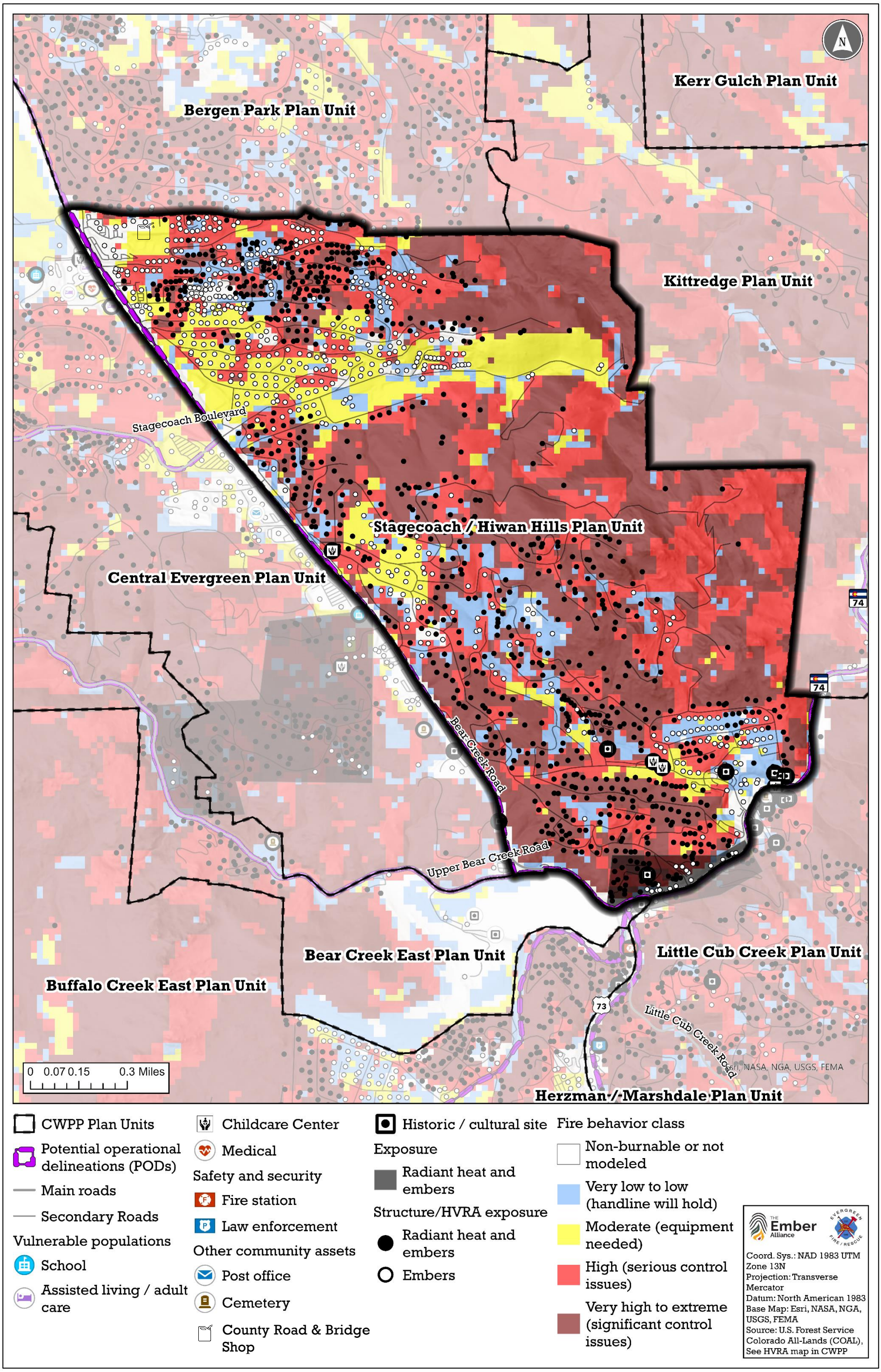
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- Work with all of the HOAs across the plan unit, especially around coordinating open space treatments.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Expand Community Wildfire Ambassador Team recruitment across neighborhoods in coordination with HOAs.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods and coordinate with HOAs that have open space for additional opportunities.
- Coordinate with HOAs and connect communities across the plan unit.
- Explore potential landscape treatments across large acre parcels along the east and northeast flank of the plan unit.
- Explore implementation of HOA Community Roadside Mitigation Event(s) and continue Potluck and/or HOA Education Event(s) with expansion across the plan unit.

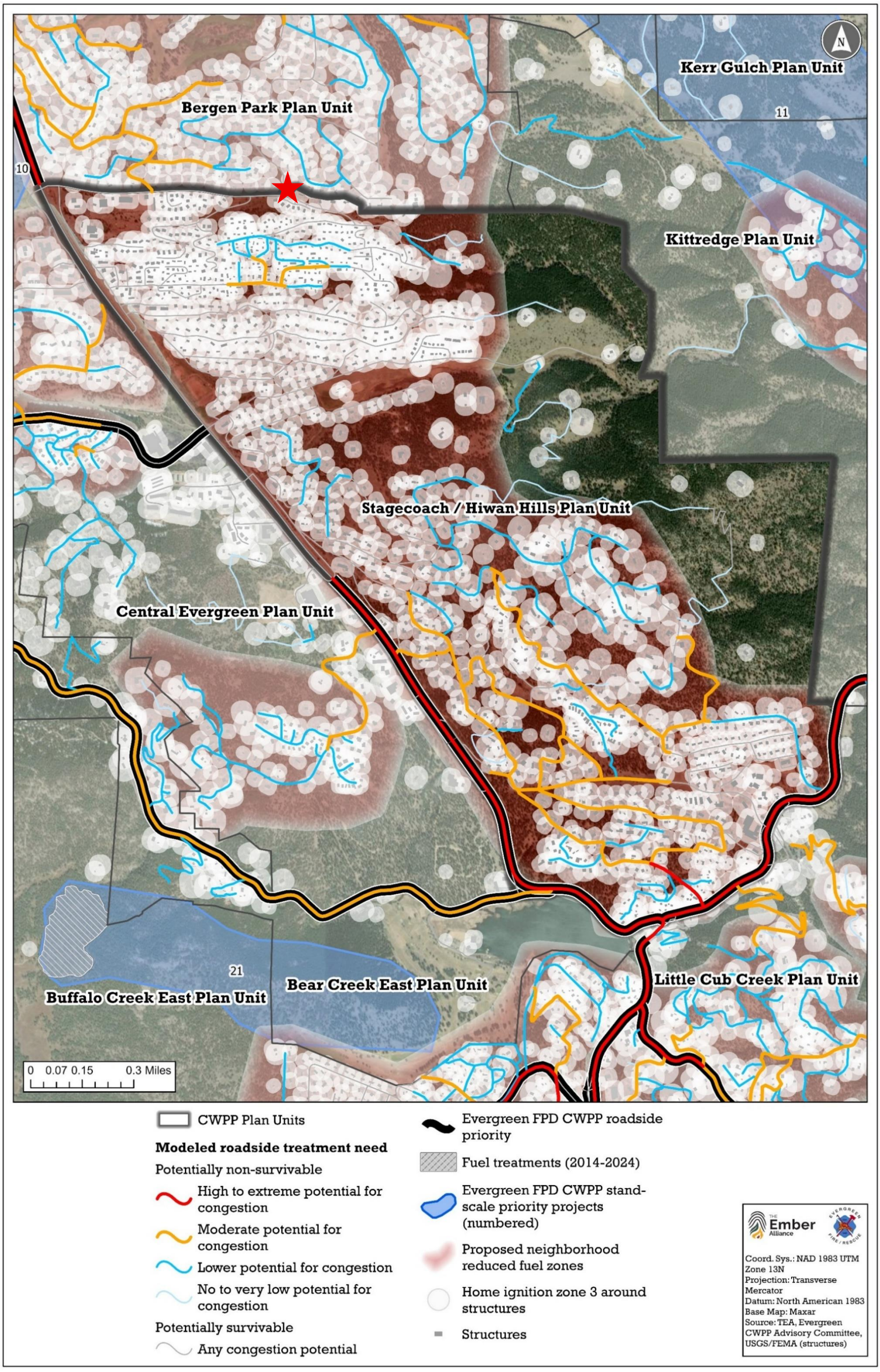
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit (see the CSFS Home Ignition Zone Guide). It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes. When multiple neighbors mitigate fuels in HIZ2 and HIZ3, this work can have the added benefit of creating safer conditions along roadways where properties are close together and abut roadways.

- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures (see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.
- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones.** Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure*** **2.a.1** *in the CWPP for sources of HVRA data.*



★ Lewis Ridge Road was modeled as having a moderate potential for congestion, but based on local knowledge, this road could experience high to extreme congestion, making it important to remove roadside hazards along this road.

Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes, and proposed community denfense zones where coordinate work across entire neighborhoods would increase the ability of homes to stand strong against wildfires and the potential for firefighters to safely protect structures.*

Watershed West

Extreme relative risk rating

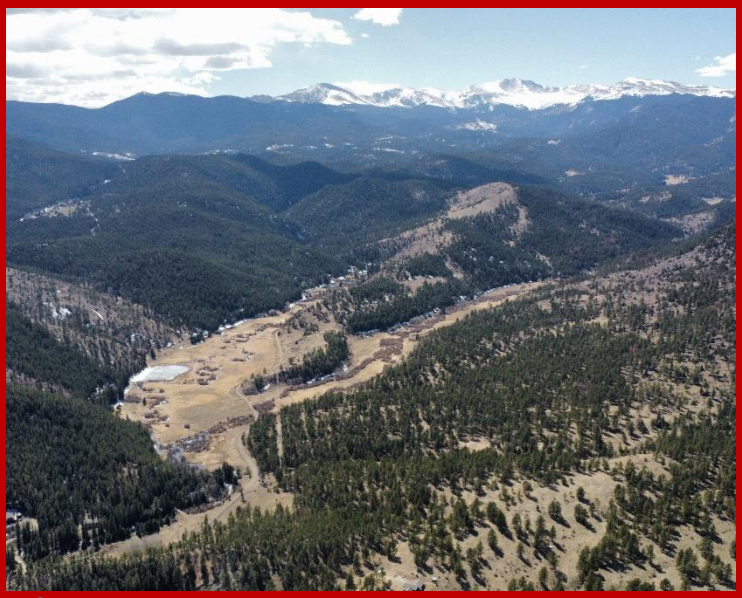


Photo credit: Keenan Prouty, EFR.

Community Risk Analysis

Under extreme fire weather and during a fire:

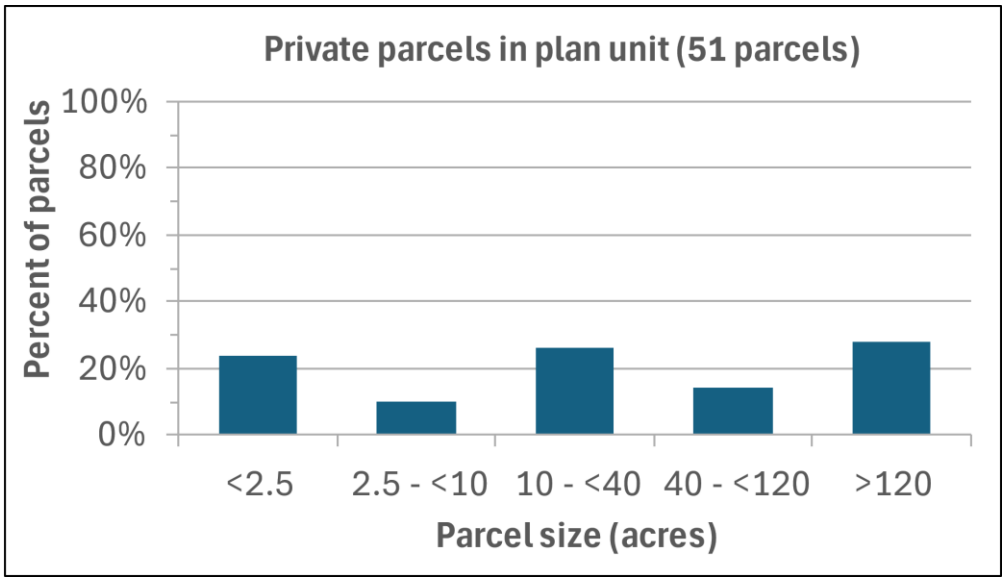
- **57%** of the area could experience very high to extreme fire behavior.
- **60%** of the area could experience moderate to high rates of fire spread.
- **56%** of homes are exposed to radiant heat from burning vegetation.
- **100%** of homes are exposed to embers from burning vegetation.
- **88%** of the roads have potentially non-survivable conditions.
- This plan unit has the **highest** likelihood of wildfire (relative burn probability) relative to the rest of Colorado.
- This plan unit has a **low** potential for structure-to-structure fire spread due to the number of closely spaced structures relative to other plan units in the district.

County: Clear Creek County

General description: A little more than half of this very large plan unit is private property (54%). Public land in this plan unit include the Arapaho and Roosevelt National Forest, Mount Evans State Wildlife Area, Hicks Mountain, and Mount Judge. Based on best available data from the U.S. Geological Survey and Clear Creek County, there are 88 structures (e.g., houses, businesses, sheds, outbuildings) and 51 private parcels (excluding rights of ways) in this sparsely populated plan unit. Many private parcels are primarily medium-sized (10 - <40 acres) and large (≥40 acres), with a few small parcels (<10 acres) scattered across the plan unit. Highly valued resources and assets (HVRAs) in this plan unit include Mount Blue Sky Outdoor Laboratory and several historic/cultural sites (see below for a table with HVRAs).

Landownership	Percent of plan unit
Private property	54%
U.S. Forest Service	24% (Arapaho and Roosevelt National Forest)
Colorado Parks & Wildlife	10% (Mount Evans State Wildlife Area)
Denver Mountain Parks	7% (Hicks Mountain and Mount Judge)

Jefferson County	4% (Jefferson County School District Parks)
Colorado State Land Board	1%
Total plan unit size: 14,047 acres	



Vegetation, topography, and potential fire behavior: The relative risk for high- to extreme-intensity fire behavior in this plan unit is extreme. Much of the plan unit has steep slopes covered in dense lodgepole pine and mixed-conifer forests with Douglas fir, lodgepole pine, ponderosa pine, and occasional Engelmann spruce. These forests can carry active crown fires, especially if strong winds push fires upslope. Active crown fires can produce abundant embers that ignite additional fires away from the main fire. Such fires are extremely challenging if not impossible to control until winds die down and fuel moistures increase.

Dense spruce-fir forests with abundant ladder fuels occur at the highest elevations in the northern and southern portion of this plan unit. Soil moisture is higher in these cooler forests, and they have a lower likelihood of burning under moderate fire weather conditions. However, after prolonged drought and under hot, windy conditions, active crown fires can proliferate through these forests.

Some drier, south-facing slopes in this plan unit support lower-density forests dominated by ponderosa pine. Understories of grasses and shrubs in more open forests can carry fast-moving wildfires. Where shrubs and small trees grow under tall trees, passive crown fires are possible if wildfire transitions from surface fire into treetops. Other ponderosa pine forests in this plan unit are dense and have abundant ladder fuels and could support active crown fires.

Several valleys in the northwestern part of this plan unit are covered in grasses and shrubs. These vegetation types can carry fast-moving wildfires that could outpace the suppression capabilities of initial firefighters arriving on scene, especially in remote areas with longer response times. Under hot, dry, and windy conditions, grasslands and shrublands can produce long flame lengths that emit significant radiant heat that could ignite nearby structures and threaten the safety of wildland firefighters.

The Colorado State Forest Service and private landowners in this plan unit are actively engaging in forest restoration treatments to reduce wildfire risk by reducing tree densities and removing ladder fuels. These treatments could moderate wildfire behavior and create opportunities for firefighters to safely and effectively engage in suppression actions.

Many species in forests, shrublands, and grasslands evolved with wildfire, so under low- to moderate- burn severity, the occurrence of wildfire can restore historical conditions, create wildlife habitat, and provide opportunities for the proliferation of diverse plant communities. High-severity wildfires are important for the

regeneration of lodgepole pine and aspen forests. Areas burned by wildfire have lower fuel loads and can act as fuel treatments that reduce the intensity of wildfires for decades.

See the map at the end of this CWPIP for predicted fire behavior across this plan unit under extreme fire weather conditions.

Hazards in the home ignition zone: This plan unit falls in the "high" category for hazards in the home ignition zone. The main threat to homes in this plan unit is embers from burning vegetation. Some homes could be exposed to intense radiant heat from burning vegetation. Most homes have ignition-resistant class-A roofs, but many homes are built with combustible siding and decking. Most properties have wooden fencing that can serve as fire pathways carrying fire from burning vegetation and structures to connected homes. Less than half of homes have adequate HIZ zone 1 (0-5 feet from the home free of vegetation and other fuels) and HIZ zone 2 (5-30 feet from the home with significantly reduced vegetation and other fuels). Many homes have additional hazards within 30 feet of the primary structure, such as wood piles, propane tanks, flammable lawn furniture, trash, campers, wooden sheds, barns, or accessory dwelling units. Over a quarter of homes are located on ridgetops or mid-slope, which increases their risk of ignition by convective heat if wildfire burns upslope towards the structure.

Home hardening and fuel removal in the HIZ are important for all homes and secondary structures (e.g., garages, barns, sheds, accessory dwelling unit). There are many accessory dwelling units, barns, and outbuildings in this plan unit, and if hazards are not mitigated around these structures, they can pose a risk to nearby primary structures if they ignite during a wildfire.

This plan unit includes several non-residential highly valued resources and assets (HVRA) that could be exposed to damaging radiant heat and/or embers. On-the-ground assessments of these properties can help determine the exact type of work done to reduce wildfire risk, such as removal of fuel around structures, replacement of flammable construction material, targeted education about wildfire risk mitigation, wildfire prevention, and evacuation safety, and/or specific evacuation plans for the location.

See the map at the end of this CWPIP for potential exposure of structures and HVRAs to radiant heat and embers under extreme fire weather conditions.

HVRA type	Name	Type of exposure	Normalized burn probability[1]
Childcare center	Avid4 Adventure / Mt Evans	High density of embers from burning vegetation	Highest (75-100%)
Historic / cultural site	Brookvale School	High density of embers from burning vegetation	Highest (75-100%)
Historic / cultural site	Captain's Rock Ranch	Radiant heat and high density of embers from burning vegetation	Highest (75-100%)
Historic / cultural site	CO Parks & Wildlife Headquarters at Mt. Evans Elk Management Area	High density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Dodge Ranch Headquarter - Jeffco Outdoor Lab	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Evans/Elbert Ranch Complex	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

Historic / cultural site	Historic horse barn and cabin	High density of embers from burning vegetation	Highest (75-100%)
Historic / cultural site	Indian Creek Ranch Complex	Low to moderate density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)
Historic / cultural site	Metcalf (Margret Davis home) Cabin	High density of embers from burning vegetation	Highest (75-100%)
School	Mount Blue Sky Outdoor Laboratory	Radiant heat and high density of embers from burning vegetation and/or nearby burning structures	Highest (75-100%)

[1]Normalized burn probability relative to the rest of Evergreen Fire Protection District.

Roadway accessibility and evacuation capacity: Evacuation concerns for this plan unit are in the "extreme" relative risk category. Many roadways in this plan unit are not accessible for firefighters and cannot accommodate two-way traffic. Most roadways are lined with dense vegetation that could create hazardous conditions during wildfires. Residents could experience long evacuation times due to the great distance of this plan unit from primary roadways and the potential for congestion to build up. There are many properties with livestock, which can increase evacuation time. Cell service is very unreliable in this plan unit, making it harder for residents and recreators to receive evacuation notifications.

See the map at the end of this CWPIP for the location of roadways that could experience congestion and potentially non-survivable conditions to help prioritize roadside treatments in this plan unit. Roadways with a particular need for roadside treatments are in the table listed below. Priorities for the Evergreen FPD CWPP were identified by the CWPP Advisory Committee based on potential congestion, roadside conditions, and strategic value for fire response across the entire community (see **Figure 4.b.2**).

Potentially non-survivable roadway	**Potential evacuation congestion**	**Evergreen FPD CWPP priority roadway**	**Potential control line / POD boundary**
Yankee Creek Road	Lower^		Yes
Upper Bear Creek Road	Lower^		Yes
Evans Ranch Road	Lower^		Yes

^While Yankee Creek, Upper Bear Creek Road, and Evan Ranch Roads were predicted to have lower congestion under the assumptions used for evacuation modeling, it is still important to mitigate wildfire risk along these roadways because of their strategic importance as potential control lines and access to the area by firefighters. To the east of Watershed West, Yankee Creek Road and Upper Bear Creek Road could experience moderate congestion.

Fire suppression considerations: Fire suppression challenges for this plan unit are in the "extreme" relative risk category. There are no hydrants in this plan unit, but there are multiple cisterns and dip sites. Many of the roadways and driveways in this plan unit are steep, narrow, or long, which makes them less accessible to firefighters. The plan unit is far from fire stations and could experience an extended response time.

Wildland Fire Response

Evergreen Fire Protection District: Initial wildland firefighting operations within this CWPIP area are the responsibility of Evergreen Fire Rescue.

Animal Evacuation:

- Emergency Evacuation for Animals: Operating under the Jefferson County Sheriff's Office, the Jefferson County Animal Response Team (J-CART) is the overall management entity for emergency evacuation of animals.
- Large Animal Evacuation Assistance: While residents are primarily responsible for evacuation of their animals, Jefferson County Horse Evacuation Assistance Team (Jeffco Heat) provides assistance for emergency evacuation of large animals.

Ready, Set, Go! Program: Jefferson County and Clear Creek County endorse the Ready-Set-Go program (RSG) 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. RSG is a three-step process:

1) Get **Ready** – Prepare Your Family: Make a disaster plan, have an evacuation plan, pack go bags.
2) Get **Set** – As the Fire Approaches: Pack your vehicle with an emergency kit.
3) **Go!** – Leave Early: Comply with any evacuation orders and follow evacuation plans early.

Rotary Wildfire Ready and CSFS Live Wildfire Ready are also great resources for wildfire and evacuation preparedness.

Community Wildfire Ambassador Program

The mission of the Community Wildfire Ambassador Program is to help create community-wide wildfire preparedness by fostering neighborhoods that are self-sufficient, engaged, and sustainably adapted to living with wildfire. This is done through Community Wildfire Ambassadors and their Ambassador Teams who serve as the core of the program.

Expanding and providing resources for the Community Wildfire Ambassador Program could help residents better understand wildfire risks and spark coordinated action that effects positive change in the district. The Community Wildfire Ambassador Program approach requires engaged Ambassadors Teams and a dedicated Ambassador. See **Community Wildfire Ambassador Program** for more information on this program.

Community Wildfire Ambassador Accomplishments since the 2020 CWPP:

- No data

How to get involved in the Community Wildfire Ambassador Program:

- Connect with your Community Wildfire Ambassador and EFR.
- Become a member of your Community Wildfire Ambassador Team.

Neighborhood Reduced Fuel Zones

Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties. Homeowners can also work with EFPD, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones (see maps in other CWPIPs for reference). The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.

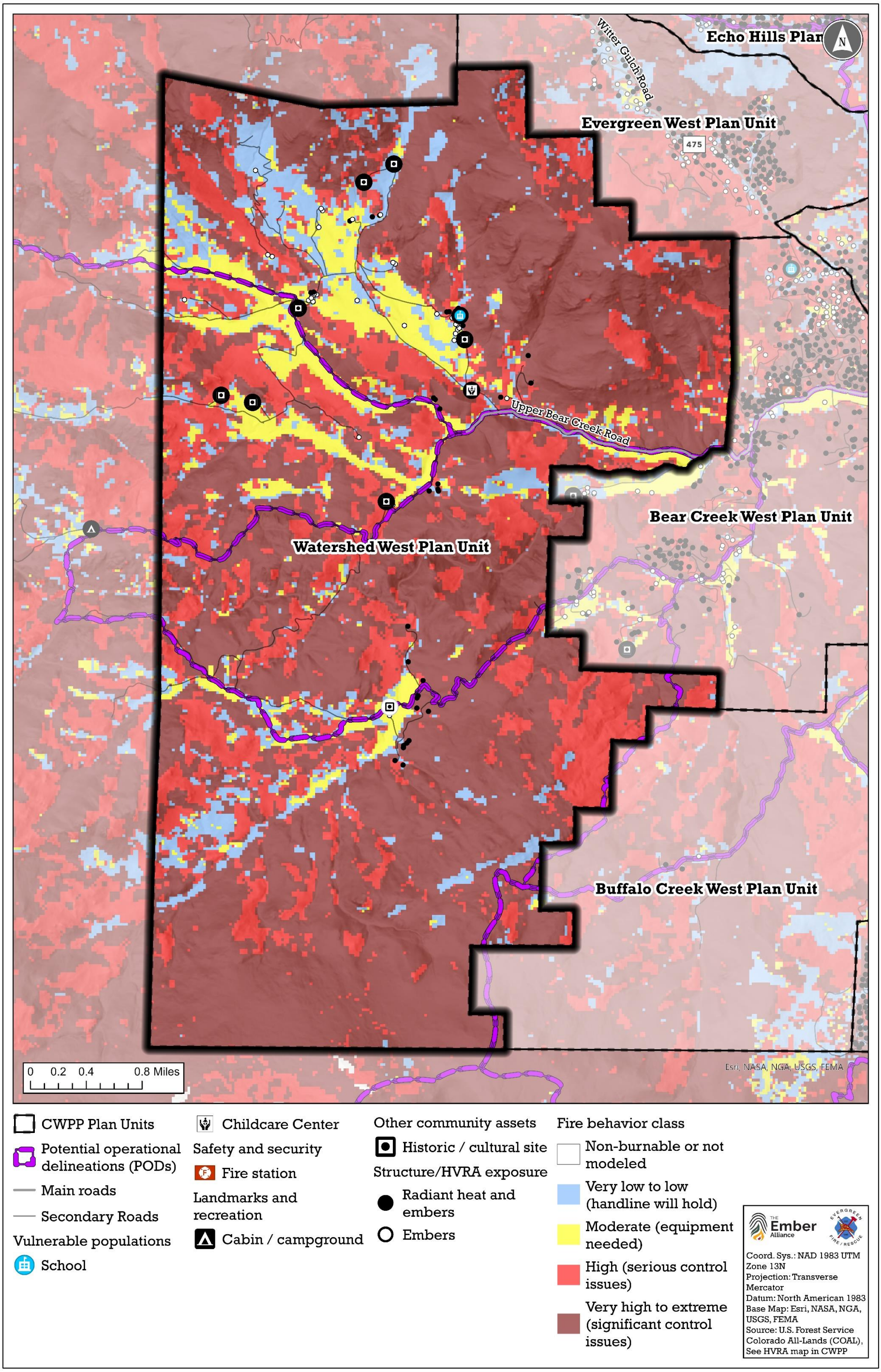
Focus Areas for Ambassadors

- Work with EFR for all planning, guidance, and support in implementation of all recommendations.
- See **Accessibility and Navigability for Emergency Personnel** to identify appropriate parties to work with to remove vegetation along shared roadways in the community, particularly roadways with a high potential for hazardous congestion and evacuation congestion (see table above and map at the end of this CWPIP).
- Work with EFR and Clear Creek County to identify a feasible secondary egress route out of the plan unit. There is currently only one primary egress route along this plan unit.
- Work with neighbors to form a Pile Burn Cooperative (see **Slash Management**). Working collectively to build and burn slash piles is safer, more efficient, and provides a valuable opportunity to share knowledge and resources.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Add, improve, or maintain proper turnarounds for emergency apparatus.
- Encourage home assessments across the plan unit.
- Encourage home hardening and defensible space across the plan unit.
- Consider areas within the plan unit where work can be done to become Firewise®.
- Increase community awareness and engagement in the Community Wildfire Ambassador Program priorities and recommendations in this CWPIP.
- Expand Community Wildfire Ambassador Team recruitment and communication across neighborhoods.
- Explore creating **Neighborhood Reduced Fuel Zones** around densely populated neighborhoods.
- Evacuation preparation with additional goal of evacuation of large livestock.
- Coordinate work done on Yankee Creek Road and Upper Bear Creek Road.
- Outdoor Lab is within this Plan Unit.

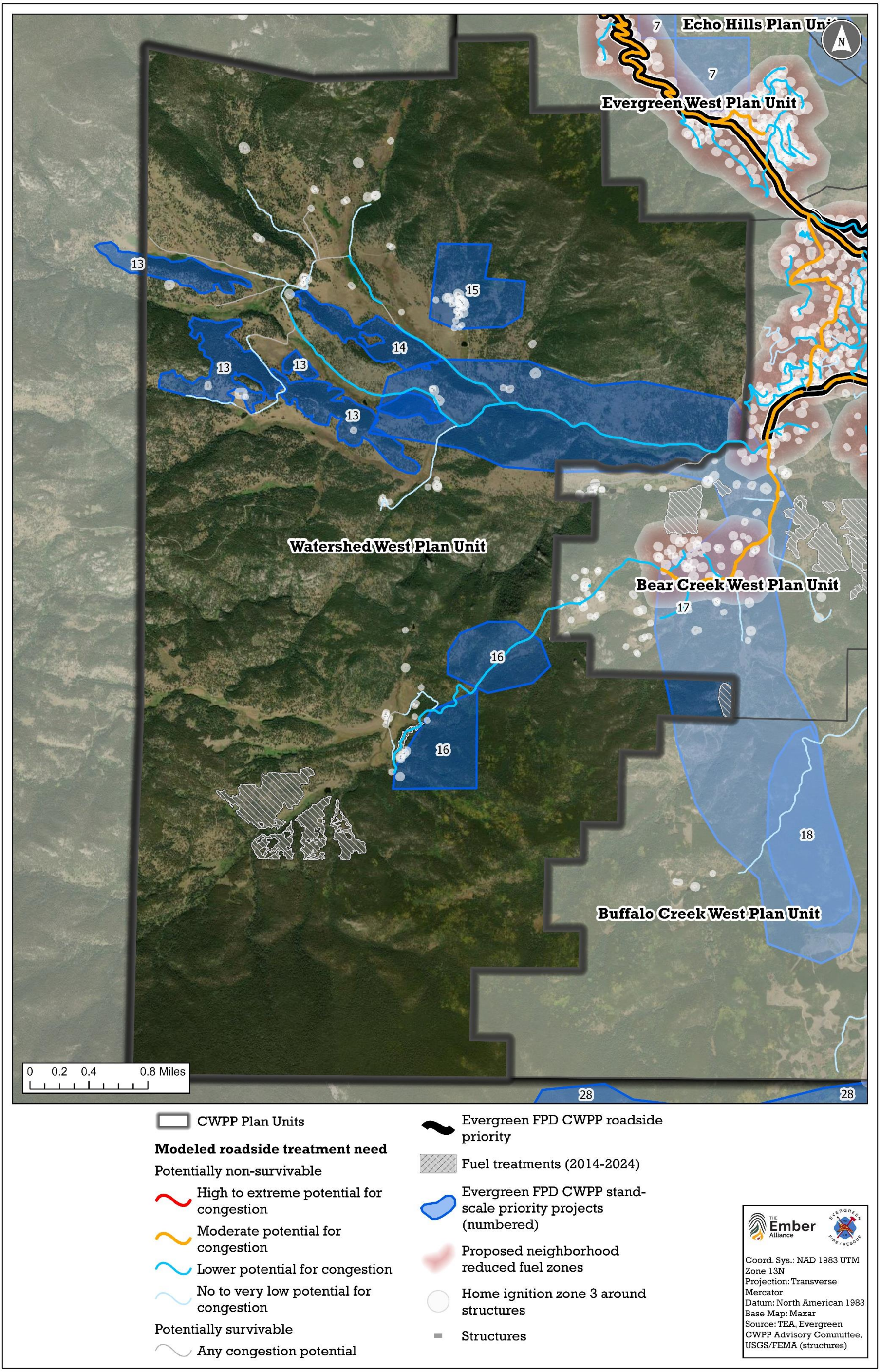
Recommendations for Residents

- Establish contact with your HOA and/or Community Wildfire Ambassador.
- Assist your Community Wildfire Ambassador and Ambassador Team with communication throughout your neighborhood.
- Prepare your home for wildfire. Home hardening and mitigation in HIZ1-3 are the highest priorities in this plan unit. It is recommended that every homeowner in this plan unit gets a home assessment from EFR to identify specific mitigation actions that need to be taken, as actions will vary among homes (see the CSFS Home Ignition Zone Guide).
- Move hazards such as wood piles, propane tanks, and old wooden sheds at least 30 feet away from homes and structures(see the CSFS Home Ignition Zone Guide).
- Sign up for LookoutAlert emergency notifications.

- Develop an evacuation plan for your family and coordinate with neighbors who might need additional support during evacuations.
- Install visible, reflective address signs near driveways.
- Remove trees, shrubs and tall grasses along private roadways and driveways to improve evacuation safety and firefighter access during a wildfire.
- Residents with approximately 30+ acres can seek guidance from CSFS or JCD for larger landscape treatments.
- Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk by creating **Neighborhood Reduced Fuel Zones**. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved.
- HIZ overlapping roadways increases community evacuation safety by mitigating the roadways as part of HIZ work.
- Support specific prioritized projects identified in the CWPP (see map at the end of this CWPIP and description of projects in **Table 4.c.1**).
- Homes in part of the plan unit could be exposed to damaging post-fire flooding and sediment delivery. Homeowners are encouraged to take proactive measures to prepare for post-fire effects, including (1) working with your insurance agent to determine your need for flood insurance, (2) elevating and anchoring electrical panels, propane tanks, wiring, appliance, and heating systems, (3) securing important documents in waterproof deposit boxes, (4) ensuring sump pumps are working and have battery-operated backup power sources, (5) installing terraces or slope drains that could protect your home without altering drainage patterns that could worsen conditions for your neighbors, and (6) consult a forester to discuss pre-fire fuel mitigation options to limit the potential for damaging post-fire sediment delivery and debris flows. Reducing fuel loading in areas of concern can reduce wildfire severity, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place. Reduced fire severity can therefore reduce the potential for flooding and sediment transport in some cases. Visit the StoryMap "A dangerous path" from the Boulder Watershed Collective for more information on preparing for debris flows.



Map of potential fire behavior under extreme fire weather conditions based on the U.S. Forest Service Colorado All-Lands (COAL) analysis, as well as the location of structures and highly valued resources and assets (HVRA) and their potential exposure to radiant heat and embers. Potential operational delineations are strategic boundaries collaboratively defined by fire and fuel managers to assist with safe and effective fire suppresion and proactive management to increase fire resilience. See ***Figure* 2.a.1** *in the CWPP for sources of HVRA data.*



Map of potential need for roadside treatments based on roadside hazards and potential congestion, and priority roadside and stand-scale projects for the EFPD CWPP. Numbers on stand-scale projects correspond to numbers in ***Table*** **4.c.1** *in the CWPP, which outlines project objectives and leads. The map also depicts HIZ3 around each structure, with HIZ3 being larger for structures on steeper slopes. Neighborhoods with many overlapping HIZ3 would benefit from joint action to mitigate all properties and reduce shared risk.*

3.c. Recommendations for the District and Partner Organizations

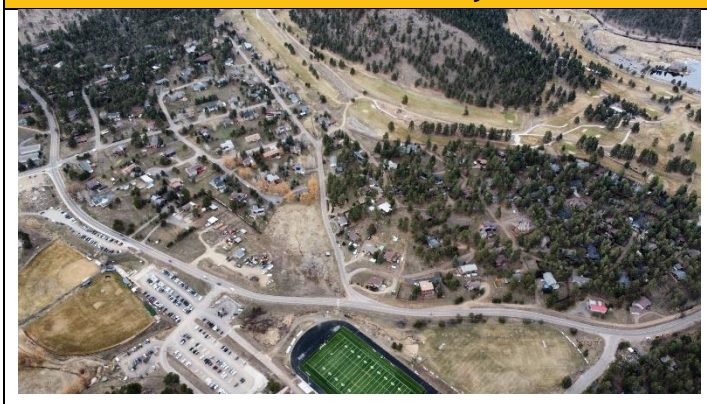
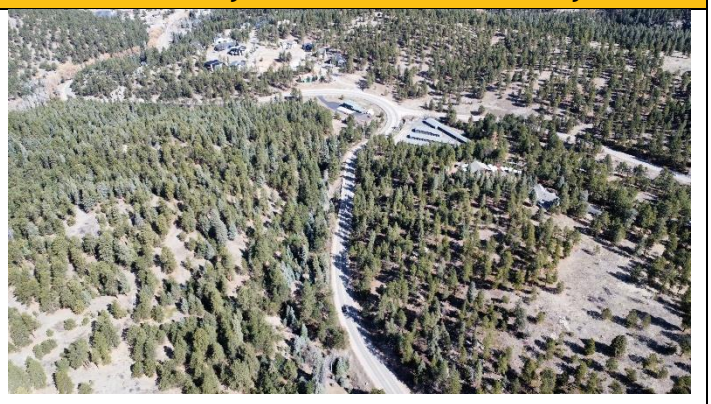
Evacuation Planning and Capacity

Responsible Parties: Colorado Department of Transportation (CDOT), County Sheriff's Offices, County Road & Bridge, Jeffcomm 911, USFS, Division of Fire Prevention and Control (DFPC), EFR, JCOS, DMP, utility providers, Community Wildfire Ambassadors, HOAs, and landowners

There is a high likelihood of evacuation congestion and long evacuation times during wildfire in the district. Some neighborhoods have only one ingress/egress route, and some have roads that are narrow, winding, or difficult to navigate, especially under heavy smoke from wildfire. Plan units with a greater potential for long evacuation times are Central Evergreen, Stagecoach/Hiwan Hills, Buffalo Creek West, Buffalo Creek East, Herzman/Marshdale, Buffalo Park Estates, Brook Forest, Blue Creek, and Evergreen Meadows based on evacuation modeling conducted for this CWPP (**Figure 3.c.1**; see methodology in **Appendix B**). Buffalo Creek West and Buffalo Creek East plan units also have significant congestion around school start and end times that should be considered in the event of an evacuation.

Many roads throughout the community are narrow and lined with dense vegetation that could create non-survivable conditions during wildfires. Under extreme fire weather conditions, 78% of roadways in the district could experience non-survivable conditions (**Figure 2.f.6**). **Mitigation actions along sections of road with a high potential for congestion during evacuations and a high risk for non-survivable conditions during a wildfire can increase the chances of survival for residents, increase the safety of firefighters, and decrease the chance that roadways become impassable due to flames.** The analysis of evacuation congestion and non-survivable conditions, in addition to roadway priorities from the Jefferson County CWPP and input from the CWPP Advisory Committee, were used to identify priority roadways for fuel mitigation outlined in **Section 4.c**.

Emergency preparedness is also vital for safe and efficient evacuations, and this planning must occur at the county-, fire protection district-, community-, and individual-levels. Section **3.a Recommendations for Residents** outlines steps that ALL residents, renters, businessowners, recreators, and other visitors to the district should follow to promote their own safety**.**

Survivable Roadways	*Potentially Non-Survivable Roadways*
	

Some roads in the district have been well mitigated by removing tall trees and saplings, removing limbs on the remaining trees, and keeping grass mowed (left image). Other roads could experience potentially non-survivable conditions because they are lined by thick forests (right image). Photo credit: Keenan Prouty, EFR.

Recommendations:

- **CDOT and County Sheriff's Offices:** Continually maintain and improve road surfaces for evacuation safety.
- **CDOT, County Sheriff's Offices and Road & Bridge, JCOS, DMP, USFS, utility providers, HOAs, and landowners:** Conduct tree removal, cut low limbs, and mitigate hazardous fuel with high ignition potential along roadways to increase the likelihood of survivable conditions during a wildfire. Roads with the most traffic and congestion should be prioritized. See **Section 4.b. Priority Roadside Fuel Treatments** for roadway priorities and recommended approaches to reduce wildfire risk along roadways.
- **County Sheriff's Offices, EFR, and Community Wildfire Ambassadors:** Educate residents about warning systems, protocols for evacuation orders, and evacuation etiquette prior to the need to evacuate the community. Communicate the importance of following evacuation orders; **failing to leave the community in a timely manner during a wildfire emergency can put first responders at risk.**
    - Encourage residents to leave with only one vehicle per household to reduce congestion.
    - Encourage all households to develop family evacuation plans and to pack go-bags that are at the ready.
    - Encourage residents to work with their neighbors to develop a plan for helping each other with evacuation, especially if school-aged children or pets might be home alone or residents have mobility impairments and need special assistance.
    - Encourage residents to evacuate whenever they feel unsafe, even before receiving mandatory evacuation orders. All residents should leave promptly when they receive a mandatory evacuation order.
    - Coordinate and disseminate additional information about evacuation preparedness such as animal evacuation, evacuation pre-planning and practice, situational awareness, and personal responsibility.
- **County Sheriff's Offices, Jeffcomm 911, EFR, and Community Wildfire Ambassadors:** Ensure that all residents participate in the Lookout Alert emergency notification system and understand its limitations.
    - Evaluate the efficacy of alternate methods of warnings and alerts.
    - Make sure warnings and alerts can be understood by all residents, including those with English as a second language and with hearing impairments.
    - Encourage residents in areas with poor cell service to have landlines and/or radios to receive notifications.

Lookout Alert is the official emergency notification system (aka, reverse 911) used to contact residents during emergencies, including during wildfire evacuations. Residents can register their cell phones and email addresses on the JCSO and Clear Creek County OEM websites.

Lookout Alert
EMERGENCY NOTIFICATIONS

- **County Sheriff's Offices, USFS, DFPC, EFR, JCOS, and DMP:** Work together to enhance mutual aid and increase capacity for evacuation-related needs. Potential methods include cross-training, mutual aid agreements, updated annual operating plans, and availability of County Road and Bridge dozers/graders for fire response on red flag days.

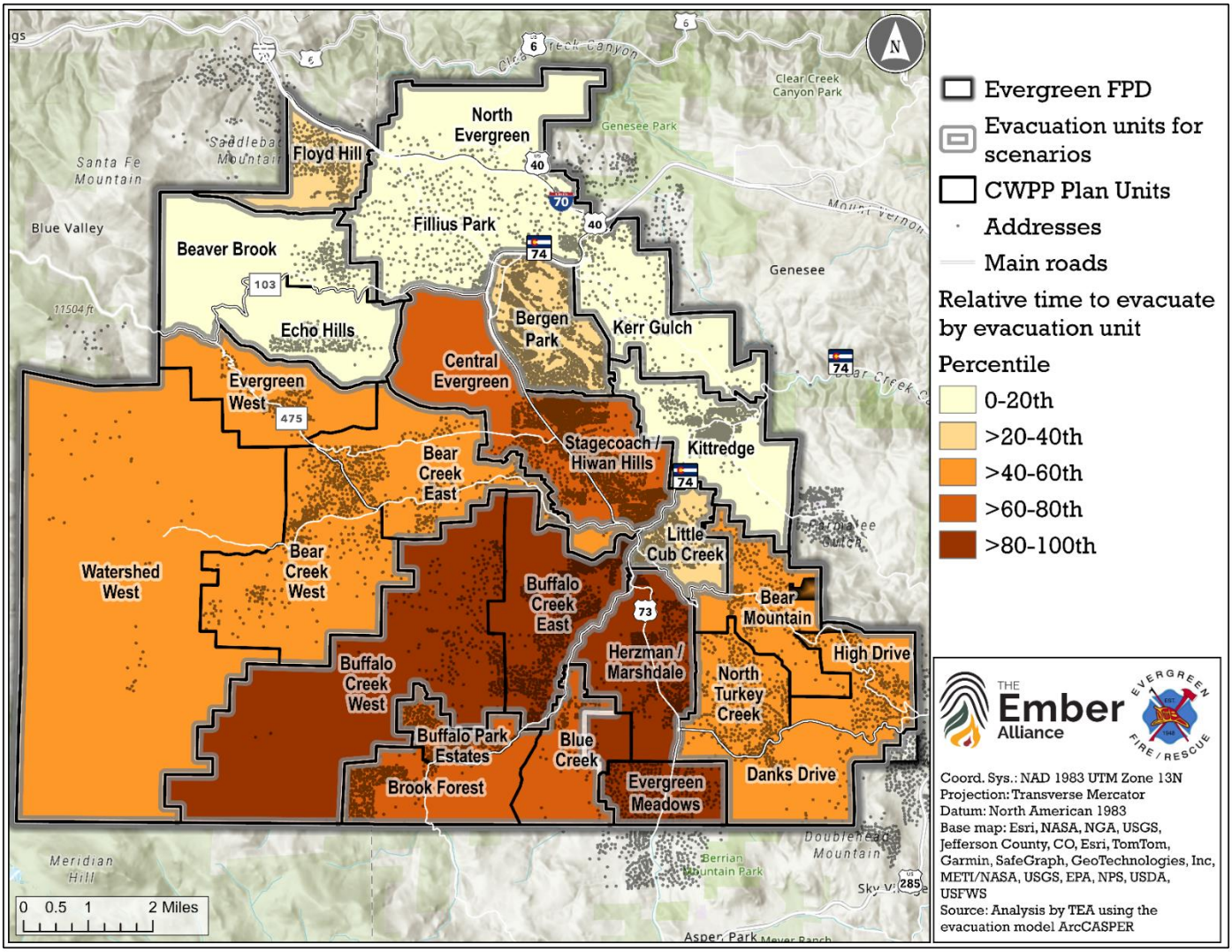


Figure 3.c.1. *Under the assumptions and scenarios of evacuation modeling for this CWPP, plan units with the highest relative evacuation times in the district are Central Evergreen, Stagecoach/Hiwan Hills, Buffalo Creek West, Buffalo Creek East, Herzman/Marshdale, Buffalo Park Estates, Brook Forest, Blue Creek, and Evergreen Meadows Plan Units.* ***Evacuation preparedness is paramount for all residents, recreators, and visitors to the district, even in areas that could potentially have lower relative evacuation times.*** *The analysis assumed all residents and recreators in each evacuation unit (comprised of 1 to 4 plan units) evacuated simultaneously, and that two vehicles departed from each residential address and ten from each business address. The number of vehicles departing from recreation areas depended on the capacity of the parking lot and the number of vehicles that could be parked alongside roads during a busy summer weekend. The model cannot account for background traffic that might be present on major roadways. Evacuation endpoints for the scenarios were areas on major roads outside the district (I-25, Highway 74, Highway 73, Highway 285, and County Road 103), with endpoints varying among evacuation units based on the typical direction of travel. See* ***Appendix B*** *for methodology used to conduct evacuation modeling.*

Preparing for Post-Fire Impacts and Long-Term Recovery

Responsible Parties: CDOT, Department of Natural Resources (DNR), County OEMs, County Road & Bridge, JCOS, DMP, USFS, JCD, CSFS, EFR, Community Wildfire Ambassadors, utility providers, conservation groups, watershed groups, Colorado Department of Public Health and Environment (CDPHE), Jefferson County Public Health (JCPH), local business associations, cooperative extensions, and landowners

Long term recovery from wildfire is a continuous effort, and many resources are available to guide proactive and reactive response. Effective, responsive action requires coordination of landowners, community organizations, and governments and involves navigating local and federal requirements. The Colorado Post-Fire Recovery Playbook was created for counties, tribes, municipalities, water providers, etc. to provide actionable steps to take and contacts to make before, during, and within the first 30 days of a fire.

CSFS provides Forest Management Restoration & Rehabilitation guidance for land managers and agencies, and Coalitions & Collaboratives (COCO) provides resources on multiple scales from individuals to government entities as part of their Post Fire Resources. It is advisable for homeowners and residents, small businesses, local governments, and land managers to review these resources prior to devastating wildfire.

Recommendations:

- **County OEMs, County Road & Bridge, JCOS, DMP, USFS, EFR, conservation groups, and watershed groups:** Participate in pre-planning, such as completing the Colorado Post-Fire Recovery Playbook for the district, to help emergency managers and organizations identify points of contact for organizations that need to be involved in post-fire recovery efforts.
- **DNR, County Sheriff's Offices, County Road & Bridge, conservation groups, water providers, and watershed groups:** Track locations where flooding and sedimentation have occurred after rainstorms in the past and use that information in planning, prioritizing, and implementation efforts.
- **County OEMs, CDPHE, JCPH, water providers, watershed groups, and local business associations**: Identify social and economic impacts of fire and educate the public on how communities, individual residents, businesses, and FPD services may be affected. Educating the public on the multi-faceted impacts of fire and long-term recovery can increase understanding and spur action.
- **JCOS, DMP, USFS, JCD, CSFS, conservation groups, watershed groups, cooperative extensions, HOAs, and landowners:** Conduct fuels treatments in strategic locations to reduce wildfire severity and extent, decrease the likelihood that hydrophobic soils (soil that repels water) form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place (Gannon et al., 2019; Jones et al., 2017). Ongoing research by Teren for the Natural Resources Conservation Service for a Wildfire Ready project will soon be published and provide a useful resource for identifying parts of the district with the greatest potential for post-fire sedimentation.
- **DNR, JCOS, DMP, USFS, JCD, conservation groups, watershed groups, and cooperative extensions:** Plan for and conduct post-fire mitigation actions. Evaluate tradeoffs and the suitability of different mitigation approaches (e.g., applying straw mulch, applying seed mixes, and building water barriers) prior to a wildfire, and create plans for rapidly deploying appropriate mitigation measures. See (Robichaud and Ashmun, 2013) for a scientific review of the relative effectiveness of different post-fire mitigation measures.
- **Conservation groups and watershed groups:** Undertake low-tech, process-based restoration (LTPBR) to improve stream health. Rivers and stream channels that can dissipate flood waters and store sediment have high floodplain connectivity, contain features that can slow the velocity of water and sediment (e.g., boulders, beaver dams, and large pieces of wood), and are lined with abundant riparian vegetation. Building artificial beaver dams, building rock erosion control structures (also known as Zeedyk structures), and encouraging beaver activity in strategic locations can decrease the velocity of downstream flows and trap sediment. See this blog post from the National Forest Foundation for more information on LTPBR.

- **DNR, JCOS, DMP, USFS, conservation groups, watershed groups, and landowners**: Conserve stream-side vegetation, like willows and cottonwoods, to reduce soil erosion, moderate floods, and potentially slow down the spread of wildfire due to elevated fuel moisture.
- **CDOT and County Road & Bridge:** Maintain and improve culverts, drainage features, and roadways in areas with elevated risk of post-fire sedimentation and debris flows. Proactive measures to improve infrastructure can reduce the potential for severe road damage in the future. Ongoing research by Teren for the Natural Resources Conservation Service for a Wildfire Ready project will soon be published and provide a useful resource for identifying parts of the district with the greatest potential for post-fire sedimentation.
- **Counties:** Ensure pre-planning around what rebuilding after a fire looks like is included and updated in relevant master plans and documents, and that all impacted agencies and partners are aware of this pre-planning.

Slash Management

Responsible Parties: Jefferson County SLASH program, Clear Creek County's slash program, DFPC, JCPH, Air Pollution Control Division (APCD), JCOS, DMP, USFS, JCD, CSFS, EFR, Community Wildfire Ambassadors, HOAs, and landowners

Like many other communities in Colorado, residents in the district have experienced difficulties with slash management. This was highlighted during the Community Kickoff Meeting held in September 2024, where residents expressed concern about the accessibility of slash disposal options in the district. While Jefferson and Clear Creek Counties currently offer slash disposal for a fee, residents expressed strong interest in additional programs like slash pick-up services as well as access to chipping and bio-burning.

Slash removal in this part of Colorado is quite difficult due to limited biomass and timber industries, and due to the sheer quantity of slash that needs to be removed from stand-scale fuel treatments and in the HIZ. Methods for managing slash come with different benefits and challenges (see a detailed description of slash management techniques in **Section 4.d. Logistics of Fuel Treatments**). For example, lop-and-scatter and mastication do not remove surface fuels from the site, they only rearrange them. It can take a decade or more for slash to decompose to a point where it no longer poses a significant fire hazard. Broadcast prescribed burning and pile burning are more effective at removing surface fuels, but they require extensive planning and expertise to conduct properly. Pile burning is permitted in the district within certain parameters, but community leadership and residents have some reservations about allowing residents to pile burn. Ensuring safe protocols are followed, risk is minimized by burners, and plans are communicated to residents can assuage fears about pile burning.

There is no single solution to address the challenge of slash removal in the district. In the words of the EFR Wildland Project Coordinator, "We cannot chip our way out of the slash problem in the district." Nor can the district pile burn itself out of the slash problem

Recommendations:

- **Jefferson County SLASH program and Clear Creek County's slash program:** Consider offering fee-waivers for the SLASH program for certain residents and providing a program that will pick up slash material and bring it to the disposal site to reduce barriers for residents to complete mitigation work.
- **EFR:** Maintain and expand the community chipping program to accommodate growing demand. This will require hiring additional seasonal staff and/or maintaining seasonal positions for a longer period of time.
- **CSFS:** Make landowners aware of the Forest Ag contractor list available on the Golden Field Office's website so homeowners can find local, reliable private contractors for mitigation work they cannot complete themselves.
- **County Sheriff's Offices, EFR, DFPC, and HOAs:** Explore options for bio-burning, air-curtain burning, and box burning. Work with DFPC to utilize the agency's large air-curtain burner.
- **EFR:** Lead community-wide conversations about community and private pile burning options to educate residents about the actual level of risk, methods used to mitigate risk, and safety procedures for pile burning.
- **EFR and DFPC:** Encourage and facilitate the participation of residents in the DFPC certified burner program. This training and certification empowers individuals to safely plan and conduct pile burns, and it provides some level of civil liability protection for certified burners.
- **Community Wildfire Ambassadors, EFR, and landowners:** Establish Pile Burn Cooperatives (PBCs), which are groups of neighbors that get together to help burn slash piles, often with support from their local fire protection district. The Ember Alliance hosts workshops on pile building and burning to assist communities who are interested in forming PBC. Visit The Ember Alliance's website to learn more about PBCs in Colorado.
- **DMP, JCOS, surrounding FPDs, DFPC, JCPH, and APCD:** Explore opportunities to expand burn windows based on current local and climatic conditions to safely accommodate more mitigation actions throughout the year.

A pile build workshop that The Ember Alliance hosted in Coal Creek Canyon, Boulder County (left) and near Red Feather Lakes, Larimer County (right). Photo credit: The Ember Alliance (left), Evan Barrientos Photography (right).

Accessibility and Navigability for Emergency Personnel

Responsible Parties: CDOT, County Road & Bridge, DMP, JCOS, USFS, EFR, Community Wildfire Ambassadors, and HOAs and landowners with private roads on their property

Many of the plan units in the district have roads that are inaccessible to fire engines as well as road and address signs that are not reflective and would not be visible to firefighters at night or under heavy smoke. The following recommendations will increase the likelihood that emergency personnel can locate and access all structures in the district.

Recommendations:

- **CDOT and County Road & Bridge:** Maintain and improve roadway access where feasible by widening road networks, adding a center lane on 2-lane roads, and/or creating turnarounds and pullovers to accommodate fire engines and two-way traffic during evacuation.
- **HOAs and landowners:** Remove trees along driveways and prune low-hanging branches to increase horizontal and vertical clearance. According to the National Fire Protection Association, driveways and roads should have a minimum of 20 feet of horizontal clearance and 13.5 feet of vertical clearance to allow engines to safely access the roads (O'Connor, 2021).
- **CDOT, County Road & Bridge, CDOT, County Road & Bridge, DMP, JCOS, USFS, EFR, and landowners:** Remove trees from along roads to reduce the chance of non-survivable conditions occurring during wildfires. Priority locations are identified in **Figure 4.b.2**.
- **CDOT, County Road & Bridge, EFR, HOAs, and landowners:** Improve road and address signage across the district. Visible, reflective signage is imperative for navigating during an emergency. EFR is currently evaluating the feasibility of offering discounted reflective address signs to residents.
- **EFR, Community Wildfire Ambassadors, HOAs, and landowners:** Apply for grants to fund roadway improvements and roadside fuel treatments. Widening roads and removing fuels along roadways can be time-consuming and expensive, but this work is vital for the safety of residents and first responders. Residents, community leaders, and EFR can work together to share costs and apply for grants to facilitate this work.

Fire Protection District Capacity

Responsible Parties: County Sheriff's Offices, EFR, surrounding FPDs, DFPC, JCOS, DMP, USFS, JCD, CSFS, water districts, Community Wildfire Ambassadors, HOAs, and landowners

Recommendations:

- **Landowners and HOAs:** Work with EFR, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones. The ability of homes to stand strong against wildfires, and the potential for firefighters to safely protect structures, would be magnified in neighborhood reduced fuel zones compared to isolated and scattered mitigation work by individual homeowners. Projects that span multiple properties are more effective at reducing wildfire risk. Contractor costs can sometimes be shared among homeowners, reducing the cost for everyone involved. Potential neighborhood reduced fuel zones are displayed in maps for each plan unit in **Section 3.b. Relative Risk Ratings and Targeted Action for CWPP Plan Units**.
- **USFS, DFPC, County Sheriff's Offices, EFR, surrounding FPDs, JCOS, and DMP:** Work together to enhance mutual aid and increase overall capacity. Potential methods include cross-training, mutual aid agreements, and having an updated annual operating picture.
- **County Sheriff's Offices, DFPC, USFS, EFR, and surrounding FPDs:** Continue to develop operational capability including pre-planning around PODs.
- **County Sheriff's Offices, EFR, and surrounding FPD:** Increase capacity to account for longer fire seasons and additional mitigation projects. Plan for additional resources for pile burning, prescribed burning, fuels mitigation, year-round crews where appropriate, as well as capacity for community outreach to keep up with demand.
- **County Sheriff's Offices, DFPC, EFR, and surrounding FPDs:** Offer additional training opportunities and funding for firefighters to take NWCG courses and complete task books, as well as other training opportunities, such as DFPC's certified burner program, COCO's Community Wildfire Mitigation Best Practices Training, and NFPA's Wildfire Mitigation Specialist certification.
- **EFR, water districts, HOAs, and landowners:** Collaborate to identify and implement projects for community cisterns in strategic locations.
- **Water districts:** Regularly test and upgrade infrastructure related to water access for firefighting.
- **EFR, HOAs, and Community Wildfire Ambassadors:** Conduct outreach and education to inform residents of the responsibility of mitigating HOA-owned property.

Outreach and Education

Responsible Parties: EFR, Community Wildfire Ambassadors, community leaders, and HOAs

EFR should continue to engage with community members using a variety of methods, including workshops, social media, and education materials. Community Wildfire Ambassadors and HOAs are an important method for disseminating information and engaging residents.

Community Wildfire Ambassador Program

EFR has a robust Community Wildfire Ambassador Program, and continuing to expand and provide resources for the program will help residents better understand wildfire risks and spark coordinated action in the district. The Community Wildfire Ambassador approach requires engaged volunteer Ambassador Team Members and a dedicated lead Ambassador. See **Table 3.c.1** from the guide *Fire adapted communities neighborhood ambassador approach: Increasing preparedness through volunteers* for effective activities that ambassadors can undertake (Wildfire Adapted Partnership, 2018).

Table 3.c.1*. Example activities for the community wildfire ambassador program. Table adapted from (Wildfire Adapted Partnership, 2018).*

Example activity	Ambassador responsibility	Ambassador Team responsibility
Educational programs about defensible space and home hardening	Gauge interest of neighbors and select topics. Find meeting location. Encourage neighbors to attend.	Arrange for specialists to make presentations. Advertise programs through HOA newsletters, social media, etc.
Emergency planning	Organize an event for people to ask firefighters and law enforcement personnel about emergency planning and evacuation. Encourage residents to work with their neighbors to develop a plan for evacuation if a resident is not at home, school-aged children or pets might be home alone, or residents have mobility impairments and need special assistance.	Provide information to residents about emergency planning and go-bags. Arrange for specialists to make presentations. Advertise programs through HOA newsletters, social media, etc.
Pile Burn Cooperative involvement	Work with EFR to determine if slash pile burning is an appropriate method of slash management in your neighborhood or community. Gauge interest level among residents around pile burning.	Work with EFR and partner organizations to plan pile build and burn workshops. Facilitate pile burn days among residents within your neighborhood or community.
Community chipping day	Secure HOA buy-in and request financial support. Select a date and organize event logistics. Encourage neighbors to attend.	Secure fuels module availability and grants or other financial support. Address liability and safety concerns. Advertise programs through HOA newsletters, social media, etc.

Defensible-space walking tour	Identify homeowners with exemplary defensible space. Select a date and organize event logistics. Encourage neighbors to attend.	Arrange for fuel treatment specialists to attend and make presentations. Provide handouts and other educational material about defensible space. Advertise programs through HOA newsletters, social media, etc.
Defensible space projects	Work with neighbors to identify high-priority project locations using insights from this CWPP. Secure HOA buy-in and request financial support. Select contractors and solicit bids. Oversee project completion.	Work with a certified forester for insights about effective treatment location and prescriptions, following guidelines in this CWPP. Identify potential contractors. Write scope of work for contract. Inspect project upon completion. Celebrate success through social media posts and newspaper articles.
Roadside fuel treatment projects	Work with neighbors to identify roads and driveways with potentially non-survivable conditions using insights from this CWPP. Secure HOA buy-in and request financial support. Select contractors and solicit bids. Oversee project completion.	Work with a certified forester for insights about effective treatment location and prescriptions, following guidelines in this CWPP. Identify potential contractors. Write scope of work for contract. Inspect project upon completion. Celebrate success through social media posts and newspaper articles.
Firewise designation	Plan volunteer mitigation events. Account for money, time, and resources spent on mitigation in the neighborhood.	Guide ambassadors in updating 3-year action plans. Support annual community-wide education program.

Homeowners Associations

HOAs play a crucial role in leadership, organization, education, and communication within their neighborhood. EFR should continue fostering close relationships with HOAs, and encouraging coordination among HOAs, to help encourage residents to take individual and collective action.

Firewise USA® Community

Encouraging communities to meet a voluntary set of criteria to be qualified as a Firewise USA® community from the NFPA can help neighborhoods organize, find direction, and take action to reduce risk and increase emergency preparedness. Being recognized as a Firewise USA® site increases community resilience and capacity and can qualify residents for grant funding.

Social Media

Social media is a powerful tool when used properly to connect with different audiences. The FEMA Wildfire Safety Social Media Toolkit is a great starting place for fire protection districts to engage with their constituents and share important fire safety information. Put Fire to Work highlights programs and organizations that successfully engage audiences around wildland fire and prescribed burning. CalFire's Ready for Wildfire campaign is active and collaboratively created to engage and encourage people to take action on wildfire preparedness.

Collaboration

Collaboration with landowners, community members, local governments, business owners, and other partners is the best way to ensure recommendations from this plan translate to on-the-ground action. Some organizations may be able to offer incentives to homeowners, others have expertise and capacity to mitigate wildfire risk, and others have authority to enforce changes. A holistic approach to fire adaptation is only possible through compromise, mutual respect, and collaboration around shared goals.

Numerous partners were engaged in the development of this CWPP and offered input on the recommendations and priorities for the district. It is recommended that the district continue meetings with land management partners to provide accountability on projects and continue to participate in cross-boundary mitigation programs such as the Northern Colorado Fireshed Collaborative (NCFC), Central Colorado Forest Collaborative (CCFC), Upper South Platte Partnership (USPP), Clear Creek Watershed & Forest Health Partnership (CCWFHP), Jeffco Wildfire Risk Mitigation Working Group, and the Mountain Metro Wildfire Mitigation Council (MMWMC).

As part of the **Implementation Plan and the Future of the CWPP**, it is recommended that a CWPP Implementation Committee is formed to continue the collaborative momentum fostered throughout the CWPP process. The district's CWPP Implementation Committee could coordinate with Clear Creek County and Jefferson County as they implement their larger-scale CWPPs.

3.d. Special Considerations for Vulnerable Populations

Social factors influence how an individual or a community may be impacted in the event of wildfire. This so-called social vulnerability is due to a lack of access to resources. The resources that are lacking can include infrastructure, social support, health, and financial means (Cutter et al., 2003). While the district at large may be well prepared for wildfire after engaging in this CWPP planning process, there is potential for some groups to fall through the cracks or struggle to engage in necessary mitigation and preparation work which makes them more at risk in the event of a fire.

Poverty, racial and ethnic discrimination, age, and physical ability are frequently factors that are associated with social stratification and result in resource inequity (Crowley, 2020; Cutter et al., 2003; Davies et al., 2018; Emrich et al., 2020; Hewitt, 2013; Ojerio et al., 2008). Even though Census Blocks in the district rate low in terms of wildfire social vulnerability relative to the rest of Jefferson and Clear Creek Counties (**Figure 3.d.1**), there are still vulnerable individuals in the district. Thus, it is important to consider how to ensure that all community members can participate in the wildfire preparedness actions outlined in this CWPP.

Within EFR, the EMS Division manages the Evergreen Community Assistance Referral & Education Services (ECARES) program, which was established in 2018. In 2019, ECARES became a state-licensed Community Integrated Health Care Services (CIHCS) agency, which allows community paramedics to bring limited healthcare to people in their homes. ECARES serves all citizens living in the district with no direct cost to the patient. It targets the most vulnerable neighbors such as elders, residents with chronic illnesses, and residents with limited financial means. ECARES bridges many of the gaps in medical care in the community and directly interfaces with those that are socially vulnerable to wildfire. Through ECARES, EFR engages with organizations and programs that interface with socially vulnerable populations through schools, medical facilities, senior centers, retirement homes, and Evergreen Christian Outreach Food Pantry and EChO Shelter. Staying connected to vulnerable populations through the agencies that serve them enables EFR to be inclusive in outreach, education, and evacuation planning.

Pre-fire

Before a fire, it is important to ensure that preparation and potential evacuation communication materials are available in other languages spoken in the district. Sole use of English in materials makes it difficult for people with lower proficiency in English to understand. This includes children, people with low literacy, and people who primarily speak other languages. Materials that use images and diagrams rather than words can make sure the broadest audience can understand any materials that the district distribute about wildfire. The Colorado State Forest Service recently made their Home Ignition Zone Guide available in Spanish. This resource should be made available to Spanish-speaking residents within the district.

Another major barrier is the ability to do the work recommended in this plan. Populations that may be impacted by this include those in lower income brackets who don't have the resources to harden their homes (i.e., by replacing their roofs, siding, and decks with ignition-resistant construction materials), those who rent their homes and cannot make modifications, and those with physical disabilities or impairments that keep them from doing the physical labor often involved in preparation and mitigation actions themselves. A CWPP is a great way to begin addressing economic disparity because it can provide a basis for the district, Community Wildfire Ambassadors, and other community groups to apply for grant funding to support mitigation work on behalf of the community.

To truly reduce the economic barrier at a community level, community leaders must design programs that are accessible for all income brackets. For example, providing mitigation services such as a community chipping program that is free for residents who fall within lower income brackets can encourage those residents to mitigate their properties when they may have otherwise found it inaccessible. Similarly, volunteer days can help those who are not physically able to engage in pre-fire protection of their home by connecting physically able community members with them to help do home hardening work.

Understanding what vulnerable populations exist within the district is essential to all aspects of planning, especially evacuation.

Post-fire

Following a fire, households are often solely responsible for their own recovery. While challenging for everyone, this is a particular issue for those without equal access to the social aid that is available like FEMA recovery funds, information on the internet, and claims for insurance (Laska and Morrow, 2006; Méndez et al., 2020). Groups impacted by this can include older adults, undocumented persons, and those who speak English as a second language or not at all.

While planning for post-fire is less of a focus of this CWPP, it is worth mentioning that community ties are as important after a fire as they are in trying to reduce the impact of potential fire. Communities that consider who will need the most assistance after a fire ahead of time are better able to get those people the help they need quickly.

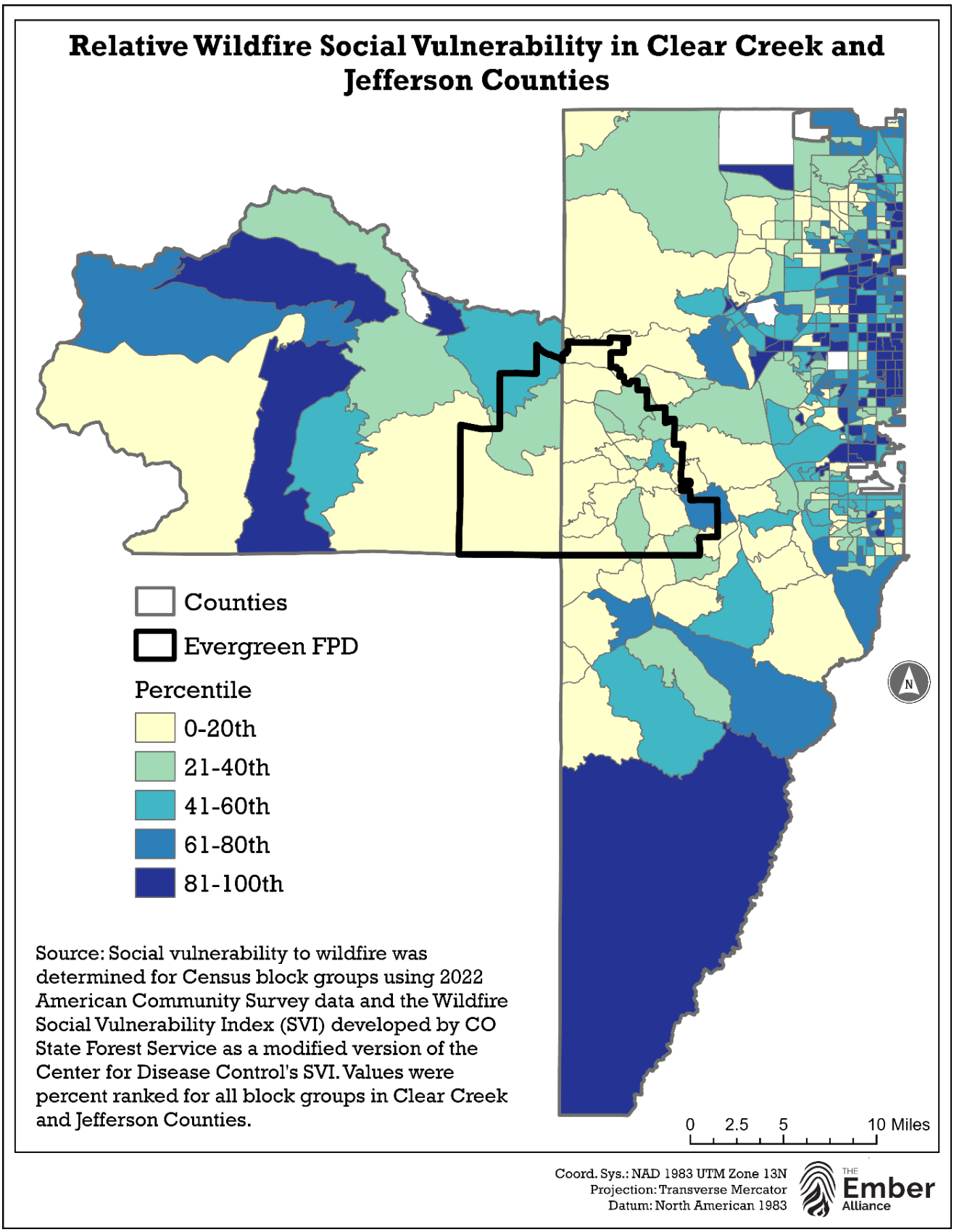


Figure 3.d.1*. Relative wildfire social vulnerability for Clear Creek and Jefferson Counties. Census Block Groups with a higher percentile contain more vulnerable populations relative to the rest of the two counties. Source: 2022 American Community Survey data and the Wildfire Social Vulnerability Index (SVI) developed by CO State Forest Service as a modified version of the Center for Disease Control's SVI.*

3.e. Funding Opportunities

There are many funding opportunities from federal, state, and local agencies as well as non-profits to assist in forest health and wildfire mitigation projects. These funds can increase capacity but cannot cover all the costs of fire mitigation needed within the valley. Residents and partners must put forth funds and time to complete this work. This is not an exhaustive list but provides a starting point for finding funding that may fit your needs.

Opportunities from Local and State Agencies in Colorado

- CSFS regularly updates their **Natural Resources Grants & Assistance Database** to help residents, agencies, and other partners find funding for natural resource projects.
- The **Forest Restoration and Wildfire Risk Mitigation (FRWRM)** is a competitive grant program designed to assist with funding community-level actions across the entire state to: reduce the risk to people, property and infrastructure from wildfire in the wildland-urban interface; promote forest health and the utilization of woody material including for traditional forest products and biomass energy; and encourage forest resilience projects. Eligible applicants include local community groups, local government entities such as fire protection districts, public and private utilities, state agencies, and non-profit groups.
- The State of Colorado developed the **Colorado Strategic Wildfire Action Program (COSWAP)** grant program in 2021 to distribute over $17 million to fuels reduction, mitigation, education, and capacity building in the state.
- **Colorado Water Plan Grants** from the Colorado Water Conservation Board includes a category for watershed health & recreation that can support planning and action to protect critical drinking water, infrastructure, and overall watershed health from post-fire impacts.
- CSFS administers programs for landowner and community assistance, including the **Colorado Forest Ag Program** and **Colorado Tree Farm Program**.
- The Colorado Department of Revenue provides a **State income tax credit for wildfire mitigation (HB22-1007)** whereby individuals, estates, and trusts may claim a subtraction on their Colorado income tax return or receive a state income tax credit for certain costs incurred in performing wildfire mitigation measures on property in the WUI.
- The **Jefferson Conservation District** helps landowners navigate forestry projects to promote forest health and complete wildfire mitigation projects.

Funding from Federal Agencies

- **Community Wildfire Defense Grants** (CWDG) are funded annually through the National Forest Service and help communities take action on implementation projects from their local CWPP. The future of this funding source is uncertain, check the website for future viability.
- **Hazard Mitigation Assistance Grants Program (HMGP)** provides funding to state, local, Tribal, and territorial governments so they can rebuild in a way that reduces, or mitigates, future disaster losses in their communities. This grant funding is available after a presidentially declared disaster.
- **Environmental Quality Incentives Program (EQIP)** from the Natural Resources Conservation Service can support private landowners and Tribes conduct forest management, prescribed burning, or prescribed grazing to reduce fire risk.

Opportunities from Non-Governmental Organizations

- Coalitions and Collaboratives, Inc. manages the **Action, Implementation, and Mitigation Program (AIM)** to increase local capacity and support wildfire risk reduction activities in high-risk communities. AIM provides direct support to place-based wildfire mitigation organization with pass-through grant funding, on-site engagement, technical expertise, mentoring, and training on mitigation practices to help high-risk communities achieve their wildfire adaptation goals.

- **Stewardship Impact Grants** from Great Outdoors Colorado fund local agencies, tax districts, political subdivisions, and non-profit organizations for wildfire mitigation work that aligns with resource conservation or outdoor stewardship objectives.
- **Conservation Service Corps Grants** from Great Outdoors Colorado fund chainsaw crews to support local agencies, tax districts, political subdivisions, and non-profit with fuel mitigation projects.
- Coalition for the Upper South Platte can aid with small-acreage wildfire mitigation measures through their **Neighborhood Fuels Reduction Program**.
- Fire Adapted Colorado (FACO) manages the **FACO Opportunity Fund**, which is a matching mini-grant program to support projects, build capacity, and address local needs with funding from the National Fire Adapted Communities Learning Network.

Capacity for Fire Protection Districts

- **Staffing for Adequate Fire and Emergency Response Grants (SAFER)** from FEMA directly fund fire departments and volunteer firefighter organizations to help increase their capacity.
- **Assistance to Firefighters Grants (AFG)** from FEMA help firefighters and other first responders obtain critical resources necessary for protecting the public and emergency personnel from fire and related hazards.
- **Fire Prevention & Safety (FP&S) Grants** from FEMA support projects that enhance the safety of the public and firefighters from fire and related hazards, such as carrying out fire prevention education and training, fire code enforcement, fire/arson investigation, firefighter safety and health programming, strategic national projects, prevention efforts, and research and development.

4. Implementation Recommendations for Fuel Treatments and Ecological Resilience

4.a. Fuel Treatments and Ecological Resilience

Objectives and Benefits

Fuel treatments are a land management tool for reducing wildfire hazard by decreasing the amount and altering the distribution of wildland fuels. Common goals of stand-scale fuel treatments are to reduce the risk of active or passive crown fires and to reduce fire intensity. This is achieved by removing trees, increasing the distance between tree crowns, removing small trees, shrubs, and low branches to increase the distance between surface fuels and tree crowns, and removing downed trees and other dead vegetation (Agee and Skinner, 2005). Fuel treatment methods include tree thinning, pruning, pile burning, broadcast prescribed burning, and fuel mastication.

> "Given the right conditions, wildlands will inevitably burn. It is a misconception to think that treating fuels can 'fire-proof' important areas... Fuel treatments in wildlands should focus on creating conditions in which fire can occur without devastating consequences, rather than on creating conditions conducive to fire suppression" (Reinhardt et al. 2008).

The goal of promoting ecological resilience is to both improve the ability of an ecosystem to withstand disturbance and increase its ability to recover after disturbance (Dakos and Kéfi, 2022). Many forests in the western United States have been damaged, degraded, or destroyed because of changes to their historical fire regimes following Euro-American colonization, which reduces their ability to withstand disturbance and recover afterwards. In some frequent-fire forests, creating stands with lower tree densities and larger, healthier trees might make forests more resilient in the face of drought, bark beetles, and high-severity wildfire (North et al., 2022).

In some cases, fuel treatments can achieve both ecological objectives and wildfire risk reduction. Treatments that promote resilience in dry-mixed conifer and ponderosa pine forests tend to achieve both fuel treatment and ecological resilience objectives. In contrast, a treatment that creates a forest with widely, evenly spaced trees could serve as an effective fuel treatment but would not achieve ecological objectives in most forest types. Mowing grasslands to reduce fuel load might reduce potential flame lengths but will not repair short-grass prairie ecosystems without also conducting regular prescribed burns and seeding with native species.

Strategically located, high-quality fuel treatments can create tactical options for fire suppression (Jolley, 2018; Plucinski, 2019; Reinhardt et al., 2008). Fuel treatments along POD boundaries can allow firefighters opportunities to use direct or indirect suppression techniques to contain fire spread. POD boundaries were an important consideration for defining and prioritizing roadside and stand-scale projects for this CWPP. Regional action areas from the 2024 Jefferson County CWPP closely align with POD boundaries, so using POD boundaries to help prioritize treatments in the district creates additional alignment between district- and county-level action to mitigate risk and promote ecological resilience.

There are numerous examples of the tactical use of POD boundaries. Firefighters used fuel treatments in the Red Feather Lakes area as tactical features during the Cameron Peak Fire (Avitt, 2021). In 1980, fuel treatments helped firefighters protect the Crystal Lakes area during the Bear Trap Fire (Dennis, 2005). Firefighters used fuel treatments north and west of Loveland Fire Rescue Authority as tactical features when fighting the Cameron Peak fire in 2020. The most useful treatments were previous wildfires (namely the High Park fire burn area and the Bobcat Fire burn area), fuels treatments from the previous five years, and fuels treatments along roadways (Greiner et al., 2023).

Strategic fuel treatments, in tandem with work by individual residents to mitigate hazards in their home ignition zone, can help protect life and property. Land management agencies in and around the district are actively reducing wildland fuels (see **Figure 2.g.1** for a map of previous fuel treatments).

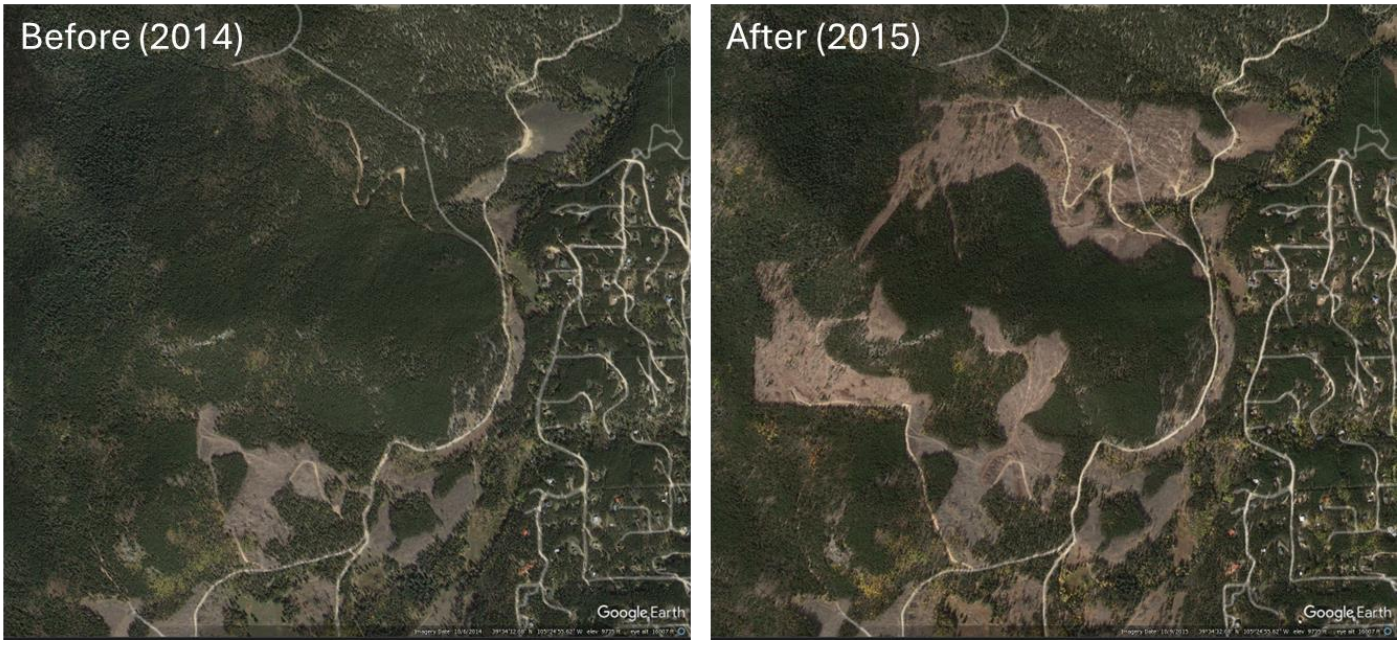
Methods Used to Conduct Fuel Treatments and Promote Resilient Ecosystems

Mechanical Treatments

Trees can be removed manually or mechanically, with the most suitable method depending on slope, road access, cost, and potential damage to soil. Use of mechanical equipment is often infeasible on slopes greater than 35% (Hunter et al., 2007). Handcrews with chainsaws can operate on steeper slopes but can be less efficient than mechanical thinning. Sometimes the only option for tree removal on steep, inaccessible slopes is expensive helicopter logging.

Thinning operations alone can increase surface fuel loads and can fail to achieve fire mitigation objectives if fuels created by the harvest activities (also known as slash) are not addressed with management methods such as removal or pile burning (Agee and Skinner, 2005). See **Approaches to Slash Management** for options to mitigate surface fuel loads created by fuel management.

A feller-buncher is a common piece of equipment used for mechanical treatments. Photo credit: Oregon Department of Forestry.



Thinning conducted by JCD and a private landowner east of Brook Forest Estates in 2015 make the community safer by creating a mosaic landscape. Complete removal of trees in large patches mimics the spatial pattern created by high-severity fires in lodgepole pine forests. Source: Google Earth.

Broadcast Prescribed Burning

Broadcast prescribed burning is often the most effective method to mitigate wildfire risk and create healthy conditions in a variety of grassland, shrubland, and forest ecosystems (Paysen et al., 2000; Stephens et al., 2009). This method has unique impacts on vegetation, soils, and wildlife habitat that cannot be replicated by mechanical treatments alone (McIver et al., 2013). Prescribed burning mimics naturally occurring wildfire, can treat hundreds of acres at a time, removes surface fuel, and is relatively cost-effective (Hartsough et al., 2008; Hunter et al., 2007). Prescribed burns can reduce property damage during wildfires because they are so effective at reducing fuel loads (Loomis et al., 2019).

Often, due to decades of fuel accumulation, mechanical treatments are necessary before broadcast burning can safely and effectively be implemented. Broadcast prescribed burning or pile burning can be used following mechanical treatments to magnify treatment impacts by consuming surface fuels that could burn in a wildfire (Fulé et al., 2012; Prichard et al., 2020). Regular spring burning can also help repair grassland ecosystems, such as the large meadow in Elk Meadows, by recycling nutrients, replicating natural fire processes, and controlling non-native grasses such as smooth brome (Willson and Stubbendieck, 1997). Many native grass species stay green into the summer, unlike cheatgrass and smooth brome, making them less receptive to wildfire (Miller, 2006).

Broadcast prescribed burning is challenging in the WUI due to diverse fuel types, proximity to homes, risk of visibility impairments on roads from smoke, health impacts of smoke, and political and social concerns. However, with proper planning and implementation, qualified firefighters can safely conduct prescribed burns, even in the WUI (Hunter et al., 2007). Thinning projects and broadcast prescribed burning were safely and effectively conducted in Elk Meadows between 2003-2006. Life safety is always a top consideration when developing and conducting prescribed burns.

Broadcast burning is carefully regulated in Colorado by the Division of Fire Prevention and Control (DFPC), the Colorado Department of Public Health and Environment, local sheriff's offices, and fire departments as outlined in the *Colorado Prescribed Burning Standards of 2024* and *2019 Colorado Prescribed Fire Planning and Implementation Policy Guide*. Firefighters who plan and conduct prescribed burns are highly qualified under national standards set forth by the NWCG.

There is always risk involved in the application of prescribed fire but, when mitigated, the benefits outweigh the risks of not using prescribed fire. Less than 1% of prescribed burns escape containment lines, and most of these are rapidly suppressed (Weir et al., 2019). The wildland fire community soberly reviews prescribed burn escapes to produce lessons learned and make improvements (Dether, 2005).

Prescribed burning can remove surface and ladder fuels and repair ecological processes in frequent-fire ecosystems. This photo is from the Elk Meadow prescribed burn . Photo credit: Peter Anderson.

Fuel Treatment Effectiveness

The effectiveness of fuel treatments is influenced by a variety of factors, including the intensity, quality, and extent of treatment, location of treatments, maintenance of treatments, weather conditions and fire behavior, and actions of firefighters (**Figure 4.a.1**). The percentage of fuel breaks that have effectively stopped actual wildfires is between 22-47% in forests (Gannon et al., 2023; Syphard et al., 2011) and 46-71% in sagebrush ecosystems (Weise et al., 2023). A review of fuel treatment effectiveness found that, "A fuel treatment can only be as effective as the suppression that goes along with it"—less than 1% of wildfires are stopped by a fire break alone and in insolation of suppression activities (McDaniel, 2023; page 3).

Fuel treatments are more effective under moderate fire weather conditions than extreme weather conditions, and most effective when firefighters are present to use the fuel treatment as a control feature (Gannon et al., 2023; Jain et al., 2021; Reinhardt et al., 2008; Syphard et al., 2011; Weise et al., 2023). Uncontrollable factors will always play a role in home loss during extreme wildfires. Minute-to-minute shifts in wind directions, unexpected wind gusts, and extreme fire behavior and growth that overwhelm suppression efforts can result in home loss not explained by mitigation efforts prior to the fire.

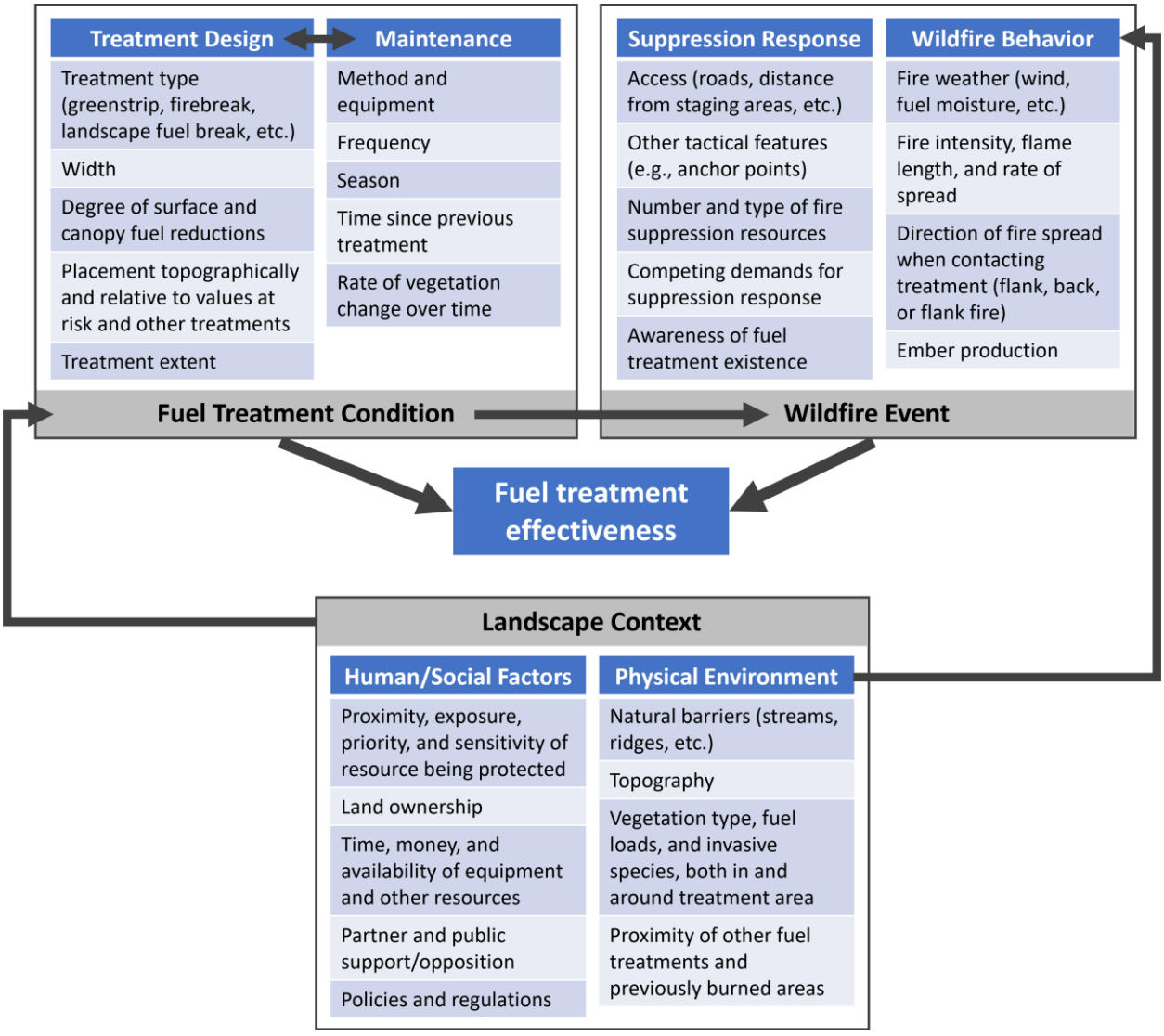


Figure 4.a.1*. The effectiveness of fuel treatments at altering wildfire behavior is influenced by numerous factors related to landscape context, fuel treatment specifications, and conditions during a wildfire event. Figure modified by The Ember Alliance based on (Jain et al., 2021; Trauernicht and Kunz, 2019).*

4.b. Priority Roadside Fuel Treatments

Treatments along roadways require a dramatic reduction of fuels to create safer and survivable conditions. This includes removing most trees adjacent to the roadway, limbing remaining trees, and regularly mitigating hazardous fuel with high ignition potential (**Figure 4.a.1**). Treatments along roadways are often described as shaded fuelbreaks (Dennis, 2005). Priority locations for roadside fuel treatments in the district are depicted in **Figure 4.b.2** and described in **Table 4.b.2**. Priorities were determined by the CWPP Advisory Committee based on potential congestion, roadside hazards, and co-location with POD boundaries. See **Appendix B** for methodology used to prioritize roadside fuel treatments for the 2025 CWPP.

The width of an effective roadside fuel treatment (distance to the left and right of a road) depends on slope. CSFS recommends that treatments extend 150 to 240 feet off the downhill side of the road and 100 to 150 feet off the uphill side. Wider treatments are necessary on the downhill side on steeper slopes due to the exacerbating effect of slope on fire intensity when fires travel uphill (**Table 4.b.1**) (Dennis, 2005). Important aspects of all roadside fuel treatments include:

- Removing limbs overhanging the road to create at least 13.5-feet of vertical clearance. See **Figure 3.a.2** for a depiction of how to measure limb height.
- Removing trees alongside the road to create at least 20-feet of horizontal clearance.
- Removing trees to create at least 10-feet crown spacing between remaining trees within the roadside treatment zone specified in **Table 4.b.2**. See **Figure 3.a.2** for a depiction of how to measure crown spacing.
- Removing all dead trees that could fall across the road and block traffic.
- Removing shrubs and regeneration that can serve as ladder fuels.
- Mitigating hazardous fuel with high ignition potential along the road.

Along important evacuation routes that could experience extreme congestion, roadside treatments should be more aggressive and consist of near removal of all trees within at least 30 feet of roadways. Clearcutting along roads when surrounding forests remain dense can cause problems with snow drifting, so shaded fuelbreaks might be more appropriate in areas where drifting is more likely, or snow fences might need to be installed.

Some residents find roadside fuel treatments aesthetically displeasing because of the removal of so many trees, but these treatments are vital for increasing the safety of residents and firefighters in this community. Roadside treatments must dramatically reduce fuel loads to effectively reduce the risk of non-survivable conditions developing during wildfires.

Overall Goals of Roadside Fuel Treatments:

- Dramatically reduce or eliminate surface and canopy fuels.
- Reduce the likelihood of non-survivable conditions along roadways during wildfires.
- Create tactical opportunities for fire suppression.
- Increase the visibility of structures from roadways to assist wildland firefighters.
- Create conditions that enable safe and effective prescribed burning within potential operational delineations.

Table 4.b.1. *Minimum fuel treatment width uphill and downhill from roads depends on the slope along the roadway[1]. Recommendations from the Colorado State Forest Service (Dennis, 2005).*

Percent slope (%)	Downhill distance (feet)	Uphill distance (feet)	Total fuel treatment width (feet)
0	150	150	300
10	165	140	305
20	180	130	310
30	195	120	315
40	210	110	320
50	225	100	325
60	240	100	340

[1]Measurements are from the toe of the fill for downhill distances and above the road cut for uphill distances. Distances are measured parallel to flat ground, not along the slope.

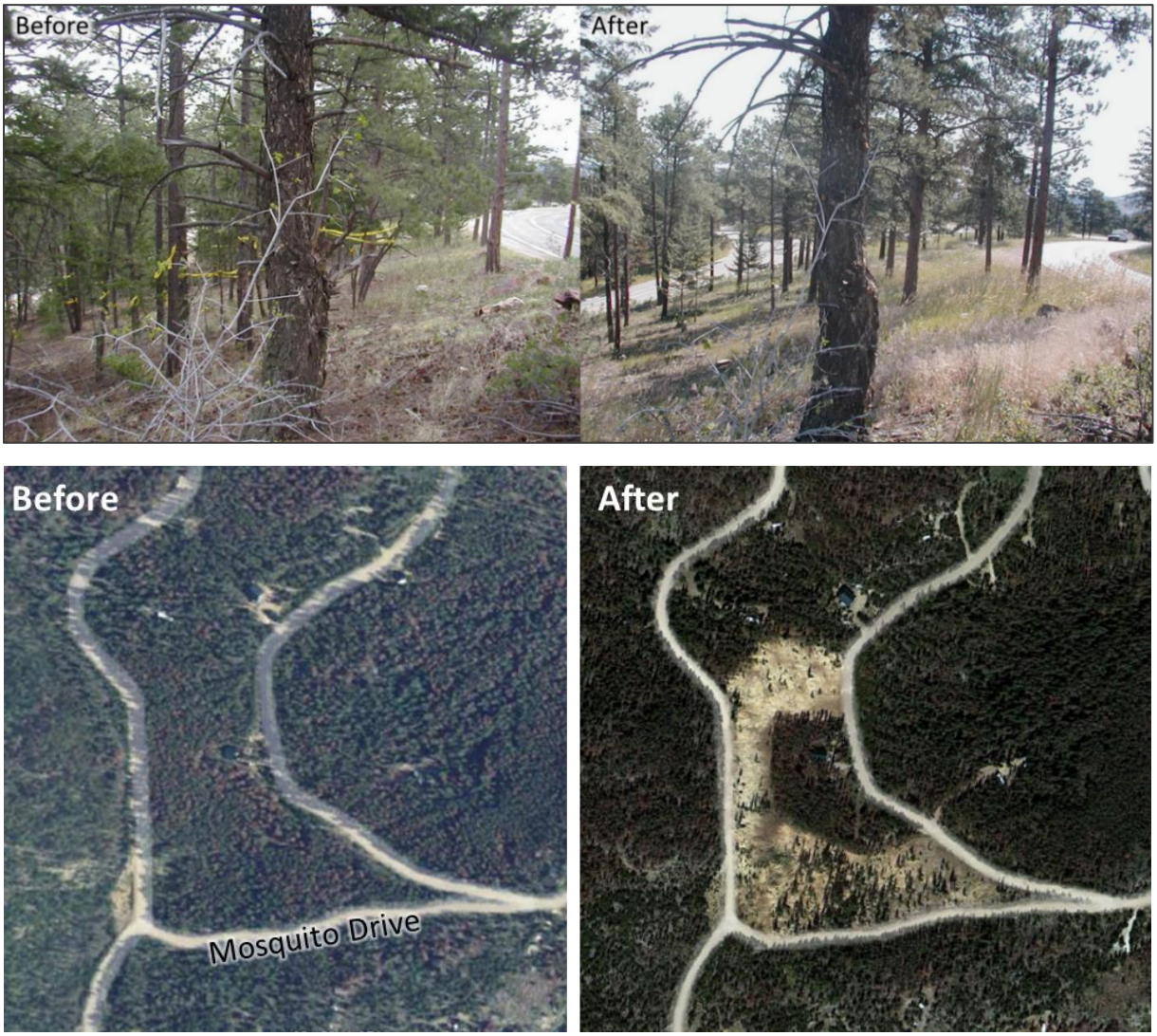


Figure 4.b.1. *Effective roadside fuel treatments remove enough trees to result in widely space crowns, remove ladder fuels (seedlings, saplings, shrubs, and low limbs), and reduce surface fuels. More dramatic tree removal along roadways can create even safer roadside conditions where appropriate. Photo credits: Genesee Foundation (top) and USDA/FPAC/GEO/Google Earth (bottom).*

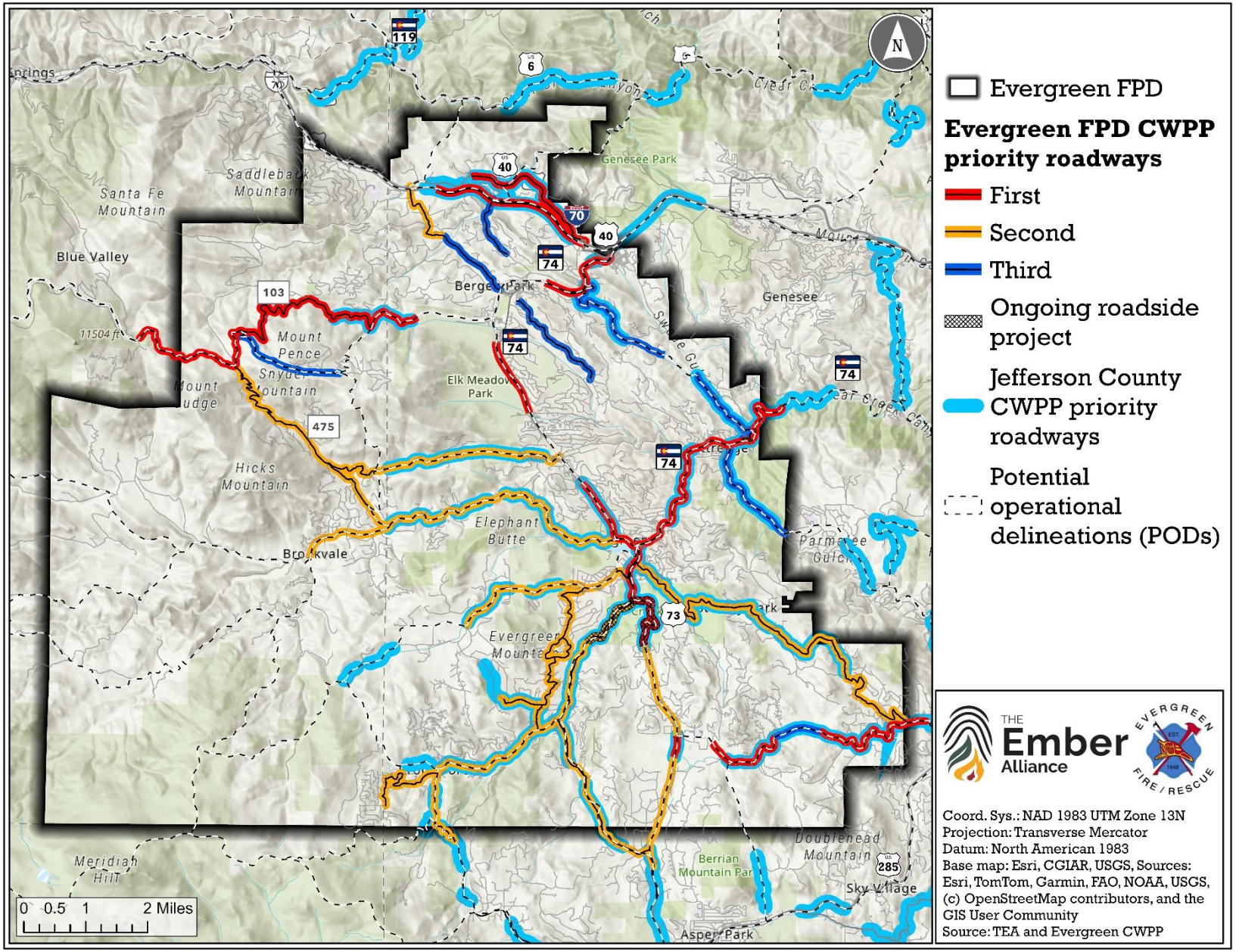


Figure 4.b.2. *Priority locations for roadside fuel treatments in the district and alignment with priorities from the 2025 Jefferson County CWPP. See* ***Appendix B*** *for methodology used to prioritize roadside fuel treatments for the 2025 CWPP.*

*Table 4.b.2. Description of priority roadside fuel treatments in the district. See **Appendix B** for methodology used to prioritize roadside fuel treatments for the 2025 CWPP. POD = potential operational delineation. Asterisks (*) indicate locations where work is already being undertaken by DMP and EFR along roadways in Cub Creek Park.*

Roadway name(s)	Priority	Lead(s)	Strategic partner(s)	Potential congestion[1]	Probability of non-survivable conditions[2]	POD boundary	Priority in 2025 Jefferson County CWPP	Notes
County Road 103	First	Jefferson and Clear Creek County Road & Bridge, USFS, DMP, EFR	Private landowners	Moderate to extreme	Moderate to extreme	Yes (parts of roadway)	Yes (eastern portion)	
Evergreen Parkway (Highway 74) - Bergen Park area	First	Jefferson County, EFR	Private landowners	High to extreme	Lower	Yes	No	
Evergreen Parkway (Highway 74) - east of Elk Meadow Park	First	Jefferson County, EFR	Private landowners	High to extreme	Lower to moderate	Yes	No	Ponderosa pine regeneration on the east side of the road could ignite and produce embers and radiant heat that threaten adjacent homes. A barrier is that landownership along parts of this stretch of road is uncertain.
Highway 73 - from Evergreen Lake through Cub Creek Park	First*	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Moderate to high	Yes	No	
Highway 73 - segment south of North Turkey Creek Road	First	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower	Yes	Yes	Sporadic patches of dense forest along the roadway.
Highway 74	First	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower to high	Yes	Yes	
I 70	First	CDOT, Jefferson and Clear Creek County Road & Bridge		High to extreme	Lower to moderate	Yes	Yes	A barrier is that treatments here require cooperation across state- and county-level agencies.
North Turkey Creek Road - eastern portion in the district	First	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower to high	Yes	Yes	
North Turkey Creek Road - western portion in the district	First	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Moderate to high	Yes	Yes	
US 40	First	CDOT, Jefferson and Clear Creek County Road & Bridge, EFR	Private landowners	High to extreme	Moderate to high	No	Yes	A barrier is that treatments here require cooperation across state- and county-level agencies.
Aspen Way and Forest Estates Road	Second	Clear Creek County Road & Bridge, EFR	Private landowners	Moderate to extreme	Moderate to high	No	No	
Blue Creek Road	Second	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Moderate to high	Yes	Yes	Blue Creek Road is very narrow and portions of the roadway are lined by dense forest on the eastern, uphill side.
Buffalo Park Road	Second	Jefferson County Road & Bridge, JCOS, EFR	Private landowners	High to extreme	Lower to high	Yes	Yes (portions of roadway)	
County Road 65 - north of Meadows Vista Drive	Second	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower to moderate	No	No	
Highway 73 - south of Cub Creek Park to North Turkey Creek Road	Second	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Low	Yes	No	Sporadic patches of dense forest along the roadway.
Highway 73 - southern portion in the district	Second	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower	Yes	No	Sporadic patches of dense forest along the roadway.
Little Cub Creek Road, Stanley Park Road, and High Drive	Second	Jefferson County Road & Bridge, DMP, EFR	Private landowners	Lower to extreme	Lower to high	No	Yes	
South Brook Forest Road and Black Mountain Drive	Second*	DMP, USFS, EFR	Private landowners	Moderate to extreme	Moderate to extreme	Yes	Yes	
South Hatch Drive, Cliff Road, South Merriam Drive, Monroe Drive, Isenberg Lane, South King Drive, Middleton Road, Elaine Road, Snowshoe Road, and South Columbine Road	Second	Jefferson County Road & Bridge, EFR	Private landowners	Moderate to extreme	Lower to high	No	Yes (South Columbine Road and Snowshoe Road)	
Stagecoach Boulevard	Second	Jefferson County Road & Bridge, JCOS, CO Parks & Wildlife, EFR	Private landowners	Lower to moderate	Lower to high	Yes (most of roadway)	Yes	A barrier is mixed support from landowners for fuel treatments in the area.
Upper Bear Creek Road	Second	Jefferson County Road & Bridge, JCOS, DMP, EFR	Private landowners	Moderate	Moderate to high	Yes	Yes	
Witter Gulch Road	Second	Clear Creek County Road & Bridge, EFR	Private landowners	Moderate	Moderate to extreme	Only southern portion	No	
Bergen Parkway, Placid Drive, Pouty Drive, and Keystone Drive	Third	HOAs , Jefferson County Road & Bridge, EFR	Private landowners	Moderate	Moderate to high	No	No	

Roadway name(s)	Priority	Lead(s)	Strategic partner(s)	Potential congestion[1]	Probability of non-survivable conditions[2]	POD boundary	Priority in 2025 Jefferson County CWPP	Notes
County Road 65 - south of Meadows Vista Drive	Third	Jefferson County, EFR	Private landowners	High to extreme	Lower to moderate	No	No	
Kerr Gulch Road	Third	Jefferson County Road & Bridge, EFR	Private landowners	Lower	Moderate to high	Yes	Yes	
Myers Gulch Road	Third	DMP, Jefferson County Road & Bridge, EFR	Private landowners	Moderate	Lower to moderate	Yes	Yes	
North Turkey Creek Road - central portion in the district	Third	Jefferson County Road & Bridge, EFR	Private landowners	High to extreme	Lower	Yes	Yes	Fuel removal has already been undertaken along this stretch of road, so maintenance is the priority here.
Sinton Road	Third	USFS, EFR	Private landowners	Moderate	Lower to high	Yes	No	
South Soda Creek Road	Third	Jefferson County Road & Bridge, EFR	Private landowners	Lower to moderate	Moderate to extreme	No	No	

[1]Congestion was modeled using assumptions outlined in **Appendix B**. The exact degree of congestion that might be experienced along a segment of roadway during an evacuation is unknown because evacuation orders and available routes are highly dependent on fire conditions during a specific incident.

[2]Probability of non-survivable conditions relates to the probability of flame lengths exceeding 8 feet, which is considered a threshold passed which radiant heat could pose a serious risk to life safety. See map of probability of non-survivable conditions in **Figure 2.f.6** and methodology in **Appendix B**.

4.c. Priority Stand-Scale Project Areas

Altering potential wildfire behavior and restoring ecological conditions requires a landscape-scale approach to treatments across ownership boundaries. We located and prioritized project areas for stand-level fuel treatments within the district to be planned and/or implemented in the next 5 years (**Figure 4.c.1**and **Table 4.c.1**). These project areas cross ownership boundaries and require community-wide commitment, coordination, and collaboration among private landowners, public land managers, and forestry professionals to create successful outcomes.

Project areas were identified by the CWPP Advisory Committee and partners with land management agencies and other organizations at an in-person meeting on January 28th, 2025. Partners involved in the prioritization meeting were Evergreen Fire Rescue, U.S. Forest Service, Colorado State Forest Service, Jefferson County Sheriff's Office, Clear Creek County Sheriff's Office, Jefferson County Open Space, Jefferson Conservation District, Denver Mountain Parks, Genesee Foundation, Upper South Platte Partnership, Clear Creek Watershed & Forest Health Partnership's (CCWFHP), Core Electric, and Xcel Energy. Project area locations and priorities were refined by the Advisory Committee and through follow-up conversations with partners. The Advisory Committee and partners identified and prioritized project areas based on the following factors:

- Potential fire behavior under extreme fire weather conditions (**Figure 2.f.2**)
- Home exposure to radiant heat / embers (see map and methodology in **Appendix B**)
- Presence of infrastructure and other highly valued resources (**Figure 2.a.1**)
- Previous fuel treatments and ongoing/planned projects (**Figure 2.g.1**)
- Strategic boundaries for wildfire management and suppression (aka, potential operational delineations [PODs]) (**Figure 4.c.1**)
- Priority areas previously identified by JCOS for their 2022 Forest Health Plan, the Upper Clear Creek Watershed Association's 2021 Pre-Wildfire Planning Study, and the 2024 Jefferson County CWPP
- Potential for post-fire sediment delivery based on an analysis by TEA for the 2020 CWPP and ongoing analysis by Teren for the Natural Resources Conservation Service for a Wildfire Ready project (currently unpublished data)

Stand-scale fuel treatments are challenging in the district, especially the western portion of the district, for several reasons. Many areas have steep slopes and poor access due to limited roads. Treatments are expensive because of the quantity of material that must be removed, the lack of a timber industry to offset the cost of treatments, and challenges with managing slash from treatments (see discussion about slash below). The intermix of public land managed by state, county, and local agencies with public land demand collaboration and a shared commitment to treatments, and these relationships take time to develop.

The CWPP priority projects focus on high-priority locations to address in the next 5 years, but this prioritization does not discourage ecological resilience work and fuel mitigation in other areas. If multiple neighbors work together to mitigate fire risk across ownership boundaries, it could attract funding and increase the priority and effectiveness of treating those areas. Land managers, county administrators, and residents should reevaluate fire risks and reprioritize projects as conditions change over time. To this end, EFR is an active participant in the Jefferson County Mitigation Working Group as part of an ongoing effort to include partners and bring district priorities and needs to the County Wildland Fire Management Program.

Overall Goals of Stand-scale Fuel Treatments and Ecological Resilience:

- Reduce surface fuels, reduce tree density, and increase the distance between surface and canopy fuels.
- Repair ecological conditions to create more fire-resilient ecosystems.
- Reduce the likelihood of high-severity wildfires near communities.
- Create tactical opportunities for fire suppression.
- Create conditions that enable safe and effective prescribed burning within potential operational delineations.

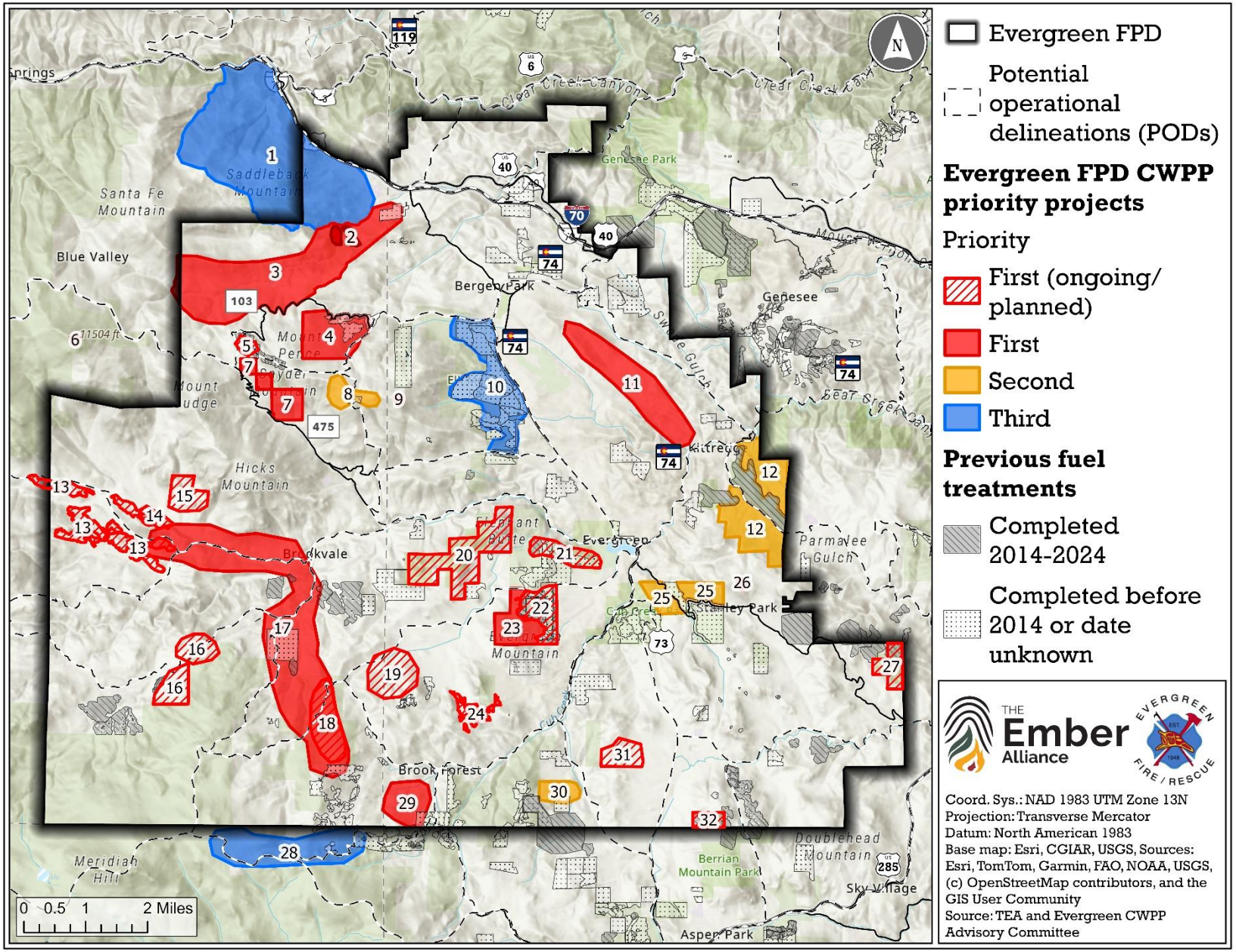


Figure 4.c.1. *Priority project areas for planning and/or implementation in the next 5 years to reduce the impact of wildfire in the district, create strategic opportunities for wildland firefighters, create safer conditions for evacuations, and promote ecological resilience.*

*Table 4.c.1. Description of priority project areas. Project IDs correspond to numbers in **Figure 4.c.1**.*

Project ID	Project Name	Priority	Status	Lead(s)	Strategic partner(s)	Objectives	Acres	Methods	Barriers	Potential fire behavior and post-fire impacts[1]
1	Upper Clear Creek Watershed Association Pre-Wildfire Planning Area	Third	Projects identified	CCWFHP	HOAs, private landowners	Watershed protection. Protect egress/ingress. Defensible space. Area includes several moderate and high priority projects from the Upper Clear Creek Watershed Association Pre-Wildfire Planning study (high: FM-43, FM-45, FM-50; moderate: FM-44, FM-48, FM-49).	Exact treatment area TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	There are many private owners and an HOA in the area that need to be engaged to increase interest and support of fire mitigation work.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.
2	CCWFHP Project FM-51	First	Potential (identified in UCCWA pre-wildfire planning study)	CCWFHP, EFR	Lookout Mountain Water District	Watershed protection around Beaver Brook Reservoirs. Project corresponds with medium priority forest management project from the Upper Clear Creek Watershed Association Pre-Wildfire Planning study (FM-51, project ranking = 6).	60	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	Upper and Lower Beaver Brook reservoirs are owned by Lookout Mountain Water District. The surrounding land is a mix of USFS, Clear Creek County Open Space, and private land.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.
3	Beaver Brook Watershed	First	Potential	State Land Board, USFS, CSFS, CCWFHP	Private landowners	Protect watershed health from wildfires across multiple ownerships (state-, county, and USFS-owned land).	Exact treatment area TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives.	Lack of work being done by the USFS in this area (no treatment units on current NEPA/ Forest Plan for Clear Creek District). Previous work was done on State Land Board and USFS parcels, but there is no documentation on exactly where or when this thinning took place.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.
4	Mount Pence / Castlewood Drive and Lodgepole Drive	First	Planned (included in current CWDG grant application)	DMP, EFR		Expand roadside fuel break to connect with Echo Hills subdivision to protect the community and increase the potential for firefighters to use this area as a potential control line. Retreat areas thinned by DMP in 2011.		Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	Poor access. Extent of work and ability to complete is contingent on grant funding from CWDG.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery. The potential consequences to structures would be great if wildfire were to cross Castlewood Drive, which is a POD boundary that currently has a moderately high suppression difficulty index.
5	Echo Hills Forest Resilience	First	Potential	USFS		Forest resilience and fuel mitigation in lodgepole pine forest. Connect with nearby treatment completed by the USFS (Echo Hills patch cuts, thinned in 2018 and burned in 2020) in order to increase the potential for firefighters to use CR 103 and Sinton Road as potential control lines.	45	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives		The southwestern portion of the area could experience high to extreme fire behavior. The potential consequences to structures would be great if wildfire were to cross CR 103 and Sinton Road, which are POD boundaries that currently have a moderate suppression difficulty index.
6	Mestaa'ėhehe Mountain Fire Lookout	First	Potential	USFS		Defensible space around lookout.	<10	Thinning		Lookout tower could receive abundant embers and experience radiant heat from nearby burning vegetation.
7	Snyder Mountain	First	Planned (included in current CWDG grant application)	DMP, EFR		Reinforce and connect previous USFS treatments to the ridgeline to serve as a fuel break. Roadside protection.		Hand treatments, pile burning, and potentially heli-logging	Extent of work and ability to complete is contingent on grant funding from CWDG. Heli-logging is extremely expensive.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.

Project ID	Project Name	Priority	Status	Lead(s)	Strategic partner(s)	Objectives	Acres	Methods	Barriers	Potential fire behavior and post-fire impacts[1]
8	Bergen Peak State Wildlife Area	Second	Pre-planning	CSFS	EFR, DMP	Treatments in lodgepole pine along the ridgeline to connect previous treatments and increase the potential for firefighters to use this area as a potential control line.	150	Mechanical patch cut/clearcut	Limited capacity of field staff.	Most of the area could experience high to extreme fire behavior, and the western portion of area could experience high to extreme post-fire sediment delivery. The ridgeline is a POD boundary that currently has a moderately high suppression difficulty index and transmission risk to structures if a wildfire were to cross the potential control line.
9	Bergen Peak Communication Tower	First	Potential	DMP, EFR		Defensible space around communication tower.	<10	Thinning		Communication tower could receive abundant embers and experience radiant heat from nearby burning vegetation.
10	Elk Meadows Prescribed Burns	Third	Proposed	JCOS		Re-treat area to remove accumulated surface fuel following the Elk Meadows prescribed burns and thinning projects between 2003-2006. Maintain the use of Evergreen Parkway as a potential control line.	820 (not all acres would be treated)	Broadcast burning under controlled conditions to reduce fuel loads.	Challenges with the location around social license and smoke permitting. No current burn plan.	Grasslands could experience rapid rates of fire spread, and potential consequences to structures would be high if an uncontrolled wildfire were to cross Evergreen Parkway.
11	Kerr Gulch Ridgeline Fuelbreak	First	Potential	EFR, CSFS, JCD		Ridgeline treatment to protect Kerr Gulch and Kittridge from fires coming out of the west and Stagecoach/Hiwan Hills from fires coming out of the east.	Exact location TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives		Parts of the area could experience high to extreme fire behavior and post-fire sediment delivery.
12	O'Fallon / Pence	Second	Proposed	DMP, EFR		Conduct new treatments and re-treat previous treatments from 2015 to connect treatments together and protect adjacent neighborhoods. Increase the potential for firefighters to use Highway 74 and Myers Gulch Road as potential control lines.	100+	Thinning, some piling and burning, some mastication	Poor access and operability.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery. The potential consequences to structures would be high if wildfire were to cross Highway 74 or Myers Gulch Road, which are POD boundaries that currently have a moderate to moderately high suppression difficulty index.
13	Evans Ranch	First (ongoing / planned)	Ongoing	CSFS		Protect the watershed and ingress/egress from wildfire. Connect previous fuel treatments with meadows and south-facing slopes to increase the potential for firefighters to use Evans Ranch Road as a potential control line.	394	Mechanical thinning		Most of the area could experience high to extreme fire behavior and moderate post-fire sediment delivery. The potential consequences to structures would be moderately high if wildfire were to cross Evans Ranch Road, which is a POD boundary that currently has a moderately high suppression difficulty index.
14	Evans Ranch II - Mount Susan	First (ongoing / planned)	Ongoing	CSFS	None	Protect ingress/egress from wildfire (area currently has 1 egress route in poor condition). Repair conditions in dense, unhealthy forests on steep slopes.	104	Mechanical thinning		Most of the area could experience high to extreme fire behavior and moderate post-fire sediment delivery.
15	Mount Blue Sky Outdoor Laboratory	First (ongoing / planned)	Planned for 2025	JCD, Jefferson County School District		Reduce wildfire hazard and repair ecological integrity in ponderosa pine / mixed-conifer forests on private property.	100	Hand cut, helicopter skidding, slash grind and hauled.	Expensive treatment but fully funded now.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.
16	Indian Creek Phases 1 and 2	First (ongoing / planned)	Phase 1 – complete; Phase 2 – planned for 2025 or 2026	JCD		Reduce wildfire hazard and repair ecological integrity in ponderosa pine / lodgepole pine / mixed-conifer forests on private property. Increase the potential for firefighters to use Yankee Creek Road as a potential control line.	200	Mechanical treatment. Some helicopter work. Slash grind and hauled or pile/burn.	Expensive treatment that needs more funding.	Most of the area could experience high to extreme fire behavior. The potential consequences to structures would be moderately high if wildfire were to cross Evans Ranch Road, which is a POD boundary that currently has a moderate suppression difficulty index.

Project ID	Project Name	Priority	Status	Lead(s)	Strategic partner(s)	Objectives	Acres	Methods	Barriers	Potential fire behavior and post-fire impacts[1]
17	Southwestern POD Enhancement	First	Potential	USFS, private landowners, JCD, CSFS		Conduct treatments on USFS and private land to connect with previous treatments by the USFS and increase the potential for firefighters to use this area as potential control lines.	Exact treatment area TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	Poor access. Need interest from private landowners to complete work outside USFS boundaries (CSFS is continuing to develop relationships with landowners in the area).	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery. The area contains several potential control lines currently having moderate to moderately high suppression difficulty index and moderately high to high transmission risk to structures if wildfire were to cross the potential control lines.
18	Ridgeline Lodgepole Project	First (ongoing / planned)	Work started in 2018/19	USFS	CSFS	Enhance lodgepole and aspen along the ridgeline. Increase the potential for firefighters to use this area as a potential control line.	Exact treatment area TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	This Good Neighbor Authority project stalled out after starting in 2018/19.	All the area could experience extreme fire behavior, and most of the area could experience high to extreme post-fire sediment delivery. The area contains a potential control line having moderately high suppression difficulty index and high transmission risk to structures if wildfire were to cross the potential control line.
19	Broce Ranch	First (ongoing / planned)	Ongoing	JCD		Reduce wildfire hazard and repair ecological integrity in ponderosa pine/lodgepole pine/mixed-conifer forests on private property. Connect with nearby treatments completed by CSFS in 2012 and 2013. Increase the potential for firefighters to use Buffalo Park Road as a potential control line.	20	Mechanical	Limited funding.	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery. The potential consequences to structures would be high if wildfire were to cross Buffalo Park Road, which is a POD boundary that currently has a moderate suppression difficulty index.
20	Elephant Butte	First (ongoing / planned)	Planned	DMP		Improve access by thinning along private property and DMP boundaries.	Exact treatment area TBD	Hand and mechanical treatments	Poor access and limited funding.	Most of the area could experience high to extreme fire behavior and post-fire sediment delivery.
21	Dedisse Park and Alderfer / Three Sisters Park	First (ongoing / planned)	Planned	DMP, JCOS		Burn or remove about 1,000 piles across 35 acres from treatments in 2023 on JCSO property and about 200-250 piles from 2021 on DMP property.	35+	Pile burning		Most of the area could experience high to extreme fire behavior, and the northeastern part of the area could experience high to extreme post-fire sediment delivery.
22	Alderfer / Three Sisters Park	First	Potential	JCOS		Forest resilience and fuels reduction. Build upon and maintain thinning projects completed in 2010 and 2021 to protect nearby communities. Increase the potential for firefighters to use Buffalo Park Road as a potential control line. This is a high-priority treatment area for JCOS.	Exact treatment area TBD	Mechanical		Parts of the area could experience high to extreme fire behavior and post-fire sediment delivery. The potential consequences to structures would be high if wildfire were to cross Buffalo Park Road, which is a POD boundary that currently has a moderate suppression difficulty index.
23	Alderfer / Three Sisters Park	First	Potential	JCOS		Reduce potential for post-fire sediment delivery. Protect nearby communities from wildfire by reducing fuel load in dense lodgepole pine forest. Increase the potential for firefighters to use Buffalo Park Road as a potential control line. This is a high-priority treatment area for JCOS.	Exact treatment area TBD		Steep slopes and abundant, declining lodgepole	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery. The potential consequences to structures would be high if wildfire were to cross Buffalo Park Road, which is a POD boundary that currently has a moderate suppression difficulty index.
24	Snowshoe	First (ongoing / planned)	Planned	CSFS		Fuel mitigation and defensible space on properties owned by eight private landowners adjacent to U.S. Forest Service land. Connect patch cuts and meadows to create an effective fuelbreak.	83	Mechanical thinning and defensible space hand work	Abundant fences and small parcels.	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery.
25	Bell Park / Cub Creek Park	Second	Proposed (still in	DMP		Conduct new treatments and re-treat previous treatments to connect treatments together and protect adjacent neighborhoods.	Exact treatment area TBD	Second entry thinning in some areas to increase	Poor access and limited funding.	Most of the area could experience high to extreme fire behavior, and parts of the area

Project ID	Project Name	Priority	Status	Lead(s)	Strategic partner(s)	Objectives	Acres	Methods	Barriers	Potential fire behavior and post-fire impacts[1]
			preliminary planning)					efficacy, first entry in some other steep areas along boundaries		could experience high to extreme post-fire sediment delivery.
26	Bear Mountain Communication Tower	First	Potential	Private landowners, EFR		Defensible space around communication tower.	<10	Thinning	Need to develop relationships with private landowners.	Communication tower could receive abundant embers and experience radiant heat from nearby burning vegetation.
27	Birch Hill	First (ongoing / planned)	Proposed	DMP		Conduct new treatments and re-treat previous treatments (40 acres thinned in 2014) to connect treatments and protect adjacent neighborhoods, including Geneva Glen Camp.	150	Hand/mechanical; helicopter removal	Poor access and operability. Limited funding.	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery.
28	Southern POD Enhancement	Third	Potential	USFS, private landowners, JCD, CSFS		Conduct treatments on USFS and private land to connect with previous treatments by the USFS and JCD and increase the potential for firefighters to use this area as potential control lines.	Exact treatment area TBD	Mix of hand thinning, mechanical, prescribed fire, and other mitigation treatments outlined in this plan based on site-specific objectives	Poor access. Need to develop relationships with private landowners.	The area contains several potential control lines currently having moderately high to high suppression difficulty index and high transmission risk to structures if wildfire were to cross the potential control lines.
29	Brook Forest / Mount Susan	First (ongoing / planned)	Proposed	JCD		Reduce wildfire hazard and repair ecological integrity in lodgepole pine forests on private property. Improve conditions along roadsides, and connect treatment to areas with light fuel loading, including treatments by the USFS in 2006, 2007, and 2013.	280	Mechanical		All the area could experience high to extreme fire behavior, and parts of the area could experience moderate to high post-fire sediment delivery.
30	Blue Creek Phase 3	Second	Outreach / pre-planning ongoing	JCD		Reduce wildfire hazard and repair ecological integrity in lodgepole pine forests on private property.	Exact treatment area TBD	Mechanical		All the area could experience high to extreme fire behavior, and parts of the area could experience moderate to high post-fire sediment delivery.
31	Centaur Ranch	First (ongoing / planned)	Ongoing	JCD		Reduce wildfire hazard and repair ecological integrity in ponderosa pine / mixed conifer / lodgepole pine forests on private property.	150	Mechanical. Slash grind and hauled.		Parts of the area could experience high to extreme fire behavior and moderate to high post-fire sediment delivery.
32	Berrian Mountain	First (ongoing / planned)	Ongoing	DMP		Burn or remove piles from previous treatments. Conduct new treatments in dense, declining lodgepole pine forest to connect with previous treatments and protect adjacent neighborhoods.	100+	Pile burning, mechanical	Poor access and limited funding.	Most of the area could experience high to extreme fire behavior, and parts of the area could experience high to extreme post-fire sediment delivery.

[1]Potential fire behavior comes from an analysis by the U.S. Forest Service (see **Figure 2.f.2** and description of methodology in **Appendix B**). Information on post-fire sediment delivery comes from an analysis by TEA for the 2020 CWPP and ongoing analysis by Teren for the Natural Resources Conservation Service for a Wildfire Ready project (currently unpublished data). Suppression difficulty index and transmission risk for POD boundaries come from an analysis by the Colorado Forest Restoration Institute for the Northern Colorado Fireshed.

4.d. Logistics of Fuel Treatments

Roles and Responsibilities

Landowners are responsible for fuel mitigation on their own lands, including along their private driveways. Residents must initiate and follow through on this work, but that does not mean they must do it alone. For assistance in planning and implementing fuel treatments, contact EFR, CSFS, or other wildfire mitigation specialists. EFR can also reach out to volunteer organizations like Team Rubicon and Rotary Wildfire Ready for support implementing hazardous fuel reduction.

Tree cutting with a chainsaw and other forestry equipment should be done by experienced and certified individuals. The CSFS provides guidance for how to select a contractor for forest management, and they provide a list of local contractors.

DMP and JCOS frequently engage in thinning projects on their properties, and they plan to safely and judiciously utilize prescribed burning in the future. They have ongoing and planned projects across many of their properties in the district (**Figure 4.c.1**). DMP and EFR are actively reducing fuels along priority roadways through Cub Creek Park (**Figure 4.b.2**). JCD and CSFS continue to work with landowners across the district to develop forest management plans and implement projects that make neighborhoods safer and more ecologically resilient.

The responsibility for conducting roadside fuel treatments depends on the location of the road. Landowners are responsible for treatments along their private driveways. Treatments along country roads need to be coordinated with the County's Road and Bridge Department. Cooperation from private property owners is necessary for effective roadside fuel treatments; roadside easements are rarely wide enough to satisfy the minimum of 150 feet treatment depth on each side of roads.

Treatment Costs

The cost of fuel treatment depends on management objectives, treatment specifications, slope, accessibility, and treatment method (e.g., mechanical thinning, hand thinning, or prescribed burning). Costs of $2,500 to $10,000 per acre are not uncommon along the Colorado Front Range where there is little biomass or timber industry to provide financial return (Gannon et al., 2019). While this CWPP was developed in 2025, costs of $12,000 to $20,000 per acre were seen in proposals in Jefferson County due to the complex economic situation that the timber and forestry industry is experiencing. Follow-up treatments are generally less expensive than the initial entry and help maintain the efficacy of the original treatment investment.

Since fuel treatments are expensive, it is important to conduct strategic, well-designed, landscape-scale treatments to increase the likelihood that fuel treatments modify fire behavior, save lives, and promote resilient ecosystems. Fuel treatments can reduce property damages by making wildfires less damaging and easier to control; this is especially true for prescribed burning which is often cheaper and more effective at altering forest fuel loads than mechanical thinning alone (Fulé et al., 2012; Loomis et al., 2019; Prichard et al., 2020). Proactive management of forests can also reduce the cost of rehabilitating water sources when wildfires are followed by large storms and result in massive erosion (Jones et al., 2017). Fuel treatments can also reduce suppression costs due to the increased efficiency of firefighting (Loomis et al., 2019).

Longevity of Fuel Treatment Benefits

Benefits of fuel treatments are not permanent and decrease overtime, with treatment "lifespan" depending on forest type, topography, rates of seedling regeneration (which is often influenced by precipitation), and the number of trees and understory brush removed during treatments. Many forests require more than one treatment to reduce fuels and promote resilient ecosystem structure. Some areas might require mechanical tree removal followed by prescribed burning, and then a maintenance treatment with tree removal and/or prescribed burning 10 to 20 years later. With a single pulse of tree regeneration, the risk of torching returns to near pre-treatment levels within 10 to 35 years in ponderosa pine forests in Colorado (Tinkham et al., 2016). Gambel oak shrublands can require retreatment every 3-5 years due to vigorous sprouting after treatment (CSFS, 2021).

Approaches to Slash Management

Thinning operations can increase surface fuel loads and can fail to achieve fire mitigation objectives if fuels created by the harvest activities (also known as slash) are not addressed with management methods such as removal or pile burning (Agee and Skinner, 2005). Slash can include small trees, limbs, bark, and treetops. Slash management is a critical step in the forest management process. It is unwise, ineffective, and even dangerous to conduct poor-quality fuel treatments that fail to reduce canopy fuels, result in increased surface fuel loads, and do not receive maintenance treatments. Such treatments can lead to a false sense of security among residents and fire suppression personnel (Dennis, 2005), and they divert limited funds away from more effective, strategic projects.

Chips and masticated fuels are a type of slash that rearrange fuels on a site but do not remove fuels. However, in some instances, chipping and mastication can reduce fire intensity and rates of spread by increasing the distance between surface and canopy fuels and suppressing the regrowth of grasses (Kreye et al., 2014). See below for more information on pros and cons of chipping and masticating fuels.

Leaving untreated slash within roadside fuel treatments is particularly counterproductive. The risk of active crown fire might be lower after a thinning operation, but untreated slash in fuel treatments can burn at high intensities and endanger the lives of residents stuck on roadways during a wildfire. Slash is easier and cheaper to manage along roadways due to access, and roads can serve as highly effective holding features for controlled burning of grass in the spring and fall and pile burning in the winter.

Methods for managing slash come with different benefits and challenges (**Table 4.d.1**). For example, lop-and-scatter and mastication do not remove surface fuels from the site, they only rearrange them. It can take a decade or more for slash to decompose to a point where it no longer poses a significant fire hazard. Broadcast prescribed burning and pile burning are more effective at removing surface fuels, but they require extensive planning and expertise to conduct properly.

Slash removal in this part of Colorado is quite difficult due to limited biomass and timber industries. Fortunately, the Jefferson and Clear Creek Counites have a slash program for residents. EFR and partners should work together to develop a slash management strategy for the area. This can and should include a combination of the following slash management techniques.

Broadcast Prescribed Burning

Prescribed burning is a common tool used to restore ecosystem processes and reduce fuel loads. Photo credit: The Ember Alliance.

Broadcast prescribed burning is often the most effective method to reduce surface, ladder, and canopy fuel loads. Broadcast burning can be safely and successfully conducted with proper planning and implementation by qualified firefighters. Broadcast burning is regulated in Colorado by the DFPC, Department of Public Health and Environment, local sheriff's offices, and fire departments as outlined in the *2019 Colorado Prescribed Fire Planning and Implementation Policy Guide.*

Barriers / Challenges to Broadcast Burning:

- Public concerns about risk from flames, embers, and smoke.
- Limited opportunities to conduct pile burns because of requirements for snowpack and atmospheric ventilation.
- Limited staffing because firefighters are often on wildfire assignments and unavailable to conduct burns, especially as fire seasons have become almost year-round due to climate change.

Pile Burning

Pile burning can be the best and sometimes only option for slash removal in steep, inaccessible areas, and incomplete slash management can leave an area just as at risk as an unmitigated area. Pile burning is different from broadcast burning; the overall complexity of pile burn operations is lower because fire activity is limited to discrete piles, and piles can be burned when snow covers the ground. Pile burning is often a required treatment before a stand is in a condition and ready to accept broadcast burning.

Pile burning can be a safe and effective method to consume slash created by thinning operations Photo credit: The Ember Alliance.

Burning piles can produce embers, but the risk of these embers igniting spot fires or structures is low. Piles are typically burned on days with snowpack, high fuel moistures, and low to moderate wind speeds. Embers from burn piles travel shorter distances than embers from passive and active crown fires because the burning material is closer to the ground (Evans and Wright, 2017).

It is critical to properly construct piles either by hand or with machines and to burn them as soon as conditions allow (see the 2015 *Colorado pile construction guide* from the DFPC and CSFS for guidance). Unburnt slash piles can become a hazard during wildfires, especially if loose logs catch fire and roll down slopes. Burning older piles is less effective and does not consume as much material because piles become compact and lose fine fuels over time (Wright et al., 2019).

Individuals must apply for open burn permits from the Jefferson County Department of Public Health to burn fewer than 50 piles. Burning more than 50 piles requires a smoke management permit from the Colorado Department of Public Health and Environment. Jefferson County Sheriff's Office does NOT allow open burning during fire restrictions and fire bans. Contact EFR for specific requirements to burn piles in the district. Pursuant to Colorado House Bill 22-1132 (Darcy's Last Call Act), individuals must contact their local fire department before burning.

DFPC administers a certified burner program that provides civil liability protection to individuals planning and leading burns if smoke or flames cause damage. The burn must have been properly planned, approved, and executed to receive liability protection. The rigorous certification program requires individuals to complete 32 hours of training, pass an exam, lead at least three pile burns, complete a task book, and comply with all legal requirements for pile burning in Colorado.

Barriers / Challenges to Pile Burning:

- Public concerns about risk from flames, embers, and smoke. There are thousands of piles within and around the district that are ready to be burned, but the agency needs more public support before conducting the pile burns.
- Limited opportunities to conduct pile burns because of requirements for snowpack and atmospheric ventilation.
- Impacts to soil and vegetation. Intense heat from pile burning can sterilize soils and result in slow recovery of plants. Mitigation measures, such as raking the burnt soil and seeding with native plants, are sometimes warranted after pile burning if the soil was completely sterilized by extreme heat or if invasive species are prevalent in the area (Miller, 2015).

Air Curtain Burners and Burn Boxes

Air curtain burners and burn boxes are machines that burn woody material cleanly in contained space. They typically consist of a box or trench into which slash is loaded and ignited. A strong fan blows a curtain of air down and over the burning material in a way that keeps oxygen flowing through the fire and keeps smoke from escaping out the top. Carbon from the smoke is filtered out of the air and kept inside the box.

Air curtain burners can be an acceptable form of slash removal where there is no social license for pile or broadcast burning. They produce significantly less smoke than open burns and can be placed in accessible locations in the WUI.

Air curtain burner owned and operated by Loveland Fire Rescue Authority. Photo: The Ember Alliance.

Air curtain burners can be used under a much wider range of conditions and locations than pile burning or broadcast burning. Air curtain burners can burn more kinds of slash than pile burning, including green wood, lumber, and general yard waste. Burning material is contained and can be extinguished with relative ease.

Barriers / Challenges to Air Curtain Burners and Burn Boxes:

- State regulations to get a permit to operate an air curtain burner are cumbersome and take a lot of time.
- Substantial upfront cost, and ongoing cost to pay for professional operators, such as firefighters staffing engines.
- Need for a large, fuel-free area to operate the burner.
- Need for equipment to haul slash from treatment areas to the site of the burner.
- Impacts to soil since nutrients are permanently removed from the treatment site, unlike broadcast prescribed burns. Some nutrients can be returned to the ground if ash is removed from the burner and spread out, and it is rarely feasible to return ash to the original treatment site.

Community Slash Piles

Community slash piles allow residents to immediately reduce fuel loads on their property, and they eliminate the need for residents to burn or chip their own material. However, it can be challenging for residents to haul material from their properties to the slash pile. Providing a program that will pick up the slash material and bring it to the slash disposal site will also reduce barriers for residents to complete mitigation work thoroughly.

The success of community slash piles is dependent on consistent management of the pile. If large slash piles are left in the community, they can pose a fire risk if they were to burn during a wildfire. Community slash piles also come with a cost for management and maintenance, but the cost is spread across all residents and therefore lower than if individual residents were to create and burn their own slash piles.

Lop-and-Scatter

Lopping involves cutting limbs, branches, treetops, smaller-diameter trees, or other woody plant residue into shorter lengths. Scattering involves spreading slash so it lies evenly and close to the ground. The lop-and-scatter approach reduces the height of slash relative to untreated slash, therefore increasing the distance between surface and canopy fuels (but not as effectively as broadcast prescribed burning or pile burning).

Lop-and-scatter can contribute to more intense fire behavior by not addressing increased surface fuel loads created by thinning (Agee and Skinner, 2005; Hunter et al., 2007). **Lop-and-scatter should not be utilized in HIZ1-3 or along roadways** because this method does not remove surface fuels from the site, it just rearranges them. Lop-and-scatter is better suited to areas with low slash accumulations and for stand-scale fuel treatment areas far away from homes.

Mastication or Chipping

Mastication involves using specialized machines like a tow-behind chipper or a hydro-ax to grind up standing saplings and shrubs and cut slash into medium-sized chips. Chipping involves processing slash through a mechanical chipper to break material into small chips or shreds. Mastication and chipping can reduce fire intensity and rates of spread by increasing the distance between surface and canopy fuels and suppressing the regrowth of grasses (Kreye et al., 2014).

Neighborhood chipping programs are cost-effective ways for communities to gain access to chippers without individuals paying for the unit and service each time they need it. Many communities create chipping programs where a chipper can be brought to anyone's property and chip the material there for them to spread across their land again. The district could host a chipping program for residents as another cost-effective slash management option. For detailed information on chipping and mastication, refer to CFRI's Mulching Knowledge Summary.

Barriers / Challenges to Mastication or Chipping:

- Unless material is hauled away after treatment, fuels are just rearranged, not reduced
- Smoldering fires in masticated and chipped fuels can be difficult to suppress, produce abundant smoke, kill tree roots, and lead to spot fires if high winds reignite masticated fuels and blow them across containment lines (Kreye et al., 2014).
- EFR and HOAs do not have the capacity to keep up with chipping needs of the community given the significant amount of fuel that needs to be removed to reduce risk around homes. In the words of the EFR Wildland Project Coordinator, "We cannot chip our way out of the slash problem in the district."
- Fuels left behind in mastication and chipping treatments are deeper and more compact than natural fuels and can impede plant regeneration, particularly when the depth of masticated and chipped fuels exceeds 4 inches (Jain et al., 2018).

***Table 4.d.1**. Many methods are available to remove slash created by forest thinning, each with their own benefits and challenges.*

Method	Removes surface fuel from site	Repairs ecosystem functions	Retains nutrients on the site	Expertise required to conduct	Effort to conduct	Relative cost / acre	Total time to plan and conduct
Broadcast prescribed burning	✓	✓	✓	Very high	Very high	$$$	Months to years
Pile burning on site	✓		✓	Moderate	Moderate to high	$$	Weeks to months
Air curtain burner	✓			High	Moderate	$$$$ (upfront)	Weeks to months
Community slash pile	✓			Low to moderate	Moderate	$$	Ongoing
Lop-and-scatter			✓	Low to moderate	Moderate	$ - $$	Weeks to months
Mastication or chipping	(✓)		✓	High	Moderate to high	$$$	Weeks to months

Note: Mastication and chipping only remove surface fuel from the site if material is hauled away after treatment. Utilizing material for firewood can relocate surface fuels from one site to another but increase fuel loads near a home until burned.

5. Implementation Plan and the Future of the CWPP

Below are strategic actions for residents, EFR, the CWPP Advisory Committee, and other community groups, public land managers, county, state, and federal agencies, and non-profit conservation groups to accomplish immediately or in the short- or mid-term (see definitions below). Some activities have low financial cost but require a fundamental shift in attitudes and behavior to prioritize wildfire risk mitigation. Other actions are more substantial and require commitment and collaboration across the community to pool resources, apply for grants, and make incremental steps toward meaningful change. Many of these recommendations are aspirational and will require expanded capacity and funding, as well as patience and hard work from community members and leaders to make lasting changes.

'Priority' and 'implementation phase' for these recommendations were determined collaboratively and reflect relative priority planning at the time this CWPP was written. This prioritization does not encourage recommendations to be conducted in any specific order or timeframe, nor does it discourage action that is not explicitly covered in this CWPP. Land managers, county administrators, and residents should reevaluate fire risks and reprioritize recommendations as conditions change over time.

5.a. Implementation Phases

Immediate	• Responsible parties should start working on this project within 2025. • Has the highest potential for immediate return-on-investment. • Can be funded within the current capacity of Advisory Committee member organizations and partner organizations with some supplemental funding from grants available in the next 12-18 months (such as CWDG). • Can occur with little to no expansion of the current Advisory Committee member organization staff and partner organizations. • Can capitalize on current relationships with emergency response partners, land management agencies, and non-profit organizations.
Short-term	• Responsible parties should start working on this project by 2027. • Requires moderate expansion of financial and implementation capacity of Advisory Committee member organizations and partner organizations. • Requires new cooperative relationships with emergency response partners, land management agencies, and non-profit organizations. • Requires greater level of coordination among partners. • Requires greater level of community discussion and decision making.
Mid-term	• Responsible parties should start working on this project by 2029. • Requires multi-year planning and funding. • Requires extensive grant funding. • Requires substantial expansion of financial and implementation capacity of Advisory Committee member organizations and partner organizations. • Requires substantial coordination among partners. • Requires substantial community discussion and decision making.

5.b. Implementation Recommendations

Recommendation	Goals	Responsibility	Priority	Category
Immediate Implementation Phase				
Form a CWPP Implementation Committee	Form a group called the CWPP Implementation Committee, or other mutually agreeable name, to continue the collaborative momentum fostered throughout the CWPP process.	CWPP Advisory Committee	First	Fire Adapted Communities
Hire a CWPP Implementation Project Manager	Obtain additional resources and capacity to carry out the recommendations in this CWPP.	EFR	First	Fire Adapted Communities
Embrace the concept of Fire Adapted Communities	Defined by the National Wildfire Coordinating Group (NWCG) as "a human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire." This concept can guide residents, fire practitioners, and communities through a holistic approach to becoming more resilient to fire	CWPP Implementation Committee, Community Wildfire Ambassadors, HOAs, residents	First	Fire Adapted Communities
Complete home hardening	Se**e Section 3.a**	Residents	First	Fire Adapted Communities
Mitigate HIZ1	Se**e Section 3.a**	Residents	First	Fire Adapted Communities
Mitigate HIZ2	Se**e Section 3.a**	Residents	First	Fire Adapted Communities
Follow specific recommendations in your CWPIP	See **Section 3.b**	Residents	First	Fire Adapted Communities
Get involved in the Community Wildfire Ambassador Program	Learn about the program, your plan unit's priorities, and join the team.	Residents	First	Fire Adapted Communities
Get involved with your HOA	Learn about the association and how you can stay informed or get more involved.	Residents	First	Fire Adapted Communities
Sign up for emergency notification through Lookout Alert	Consider signing up for notifications from neighboring counties.	Residents	First	Fire Adapted Communities

Immediate Implementation Phase				
Attend events hosted by EFR about wildfire mitigation, emergency preparedness, and evacuation	Protecting your home from wildfire can also protect your local firefighters. Share information you learn with neighbors to build community resilience and magnify the impact of individual actions.	Residents	First	Fire Adapted Communities
Invest time and energy into proper evacuation preparedness	Evacuation preparedness is the responsibility of each resident in the district. The best way to get out quickly and safely during an evacuation is to be prepared.	Residents	First	Fire Adapted Communities
Consider animals and livestock in evacuation planning	Plan to leave during voluntary evacuation notices to allow time for preparations and create more space on the roads for other residents during a mandatory evacuation.	Residents	First	Fire Adapted Communities
Offer free HIZ assessments	Continue to provide free HIZ and wildfire risk assessments to residents.	EFR	First	Fire Adapted Communities
Promote Forest Ag contractor list	Make landowners aware of the Forest Ag contractor list available on the Golden Field Office's website so homeowners can find local, reliable private contractors for mitigation work they cannot complete themselves.	CSFS	First	Fire Adapted Communities
Develop strategies to increase participation in Lookout Alert	Ensure that all residents participate in the Lookout Alert emergency notification system and understand its limitations.	County Sheriff's Offices, Jeffcomm 911, EFR, Community Wildfire Ambassadors	First	Fire Adapted Communities
Communicate important evacuation information to the public	Educate residents about warning systems, protocols for evacuation orders, and evacuation etiquette prior to the need to evacuate the community.	County Sheriff's Offices, EFR, Community Wildfire Ambassadors	First	Fire Adapted Communities
Establish Pile Burn Cooperatives (PBCs)	PBCs are groups of neighbors that get together to help burn slash piles, often with support from their local fire protection district.	Community Wildfire Ambassadors, EFR, landowners	First	Fire Adapted Communities
US 40 (Priority Roadway)	See **Section 4.b**	CDOT, Jefferson and Clear Creek County Road & Bridge, EFR	First	Fire Adapted Communities
Make personal water resources accessible for firefighters	Se**e Section 3.a**	Residents	First	Safe & Effective Fire Response
Post signs for any limitations to emergency personnel access	Post the load limit at any private bridges or culverts on private property.	Residents	First	Safe & Effective Fire Response
Improve gate and building access for emergency personnel	Ensure all locked gates and buildings can be opened by emergency personnel when necessary.	Residents, HOAs, EFR	First	Safe & Effective Fire Response

Immediate Implementation Phase				
Apply for grants to fund roadway improvements and roadside fuel treatments	Widening roads and removing fuels along roadways can be time-consuming and expensive, but this work is vital for the safety of residents and first responders. Residents, community leaders, and EFR can work together to share costs and apply for grants to facilitate this work.	EFR, Community Wildfire Ambassadors, HOAs, landowners	First	Safe & Effective Fire Response
Enhance mutual aid and increase capacity for district capacity needs	Work together to enhance mutual aid and increase overall capacity. Potential methods include cross-training, mutual aid agreements, and having an updated annual operating picture.	USFS, DFPC, County Sheriff's Offices, EFR, surrounding FPDs, JCOS, DMP	First	Safe & Effective Fire Response
Engage in pre-planning around PODs	Continue to develop operational capability including pre-planning around PODs.	County Sheriff's Offices, DFPC, USFS, EFR, surrounding FPDs	First	Safe & Effective Fire Response
Increase capacity to account for longer fire seasons and additional mitigation projects	Plan for additional resources for pile burning, prescribed burning, fuels mitigation, year-round crews where appropriate, as well as capacity for community outreach to keep up with demand.	County Sheriff's Offices, EFR, surrounding FPD	First	Safe & Effective Fire Response
County Road 103 (Priority Roadway)	See **Section 4.b**	Jefferson and Clear Creek County Road & Bridge, USFS, DMP, EFR	First	Safe & Effective Fire Response
Highway 73 - segment south of North Turkey Creek Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	First	Safe & Effective Fire Response
Highway 74 (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	First	Safe & Effective Fire Response
I 70 (Priority Roadway)	See **Section 4.b**	CDOT, Jefferson and Clear Creek County Road & Bridge, EFR	First	Safe & Effective Fire Response
North Turkey Creek Road - eastern portion in the district (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	First	Safe & Effective Fire Response
North Turkey Creek Road - western portion in the district (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	First	Safe & Effective Fire Response
Mount Pence / Castlewood Drive and Lodgepole Drive (Priority Project ID 4)	See **Section 4.c**	DMP, EFR	First	Safe & Effective Fire Response

Immediate Implementation Phase				
Mestaa'êhehe Mountain Fire Lookout (Priority Project ID 6)	See **Section 4.c**	USFS	First	Safe & Effective Fire Response
Snyder Mountain (Priority Project ID 7)	See **Section 4.c**	DMP, EFR	First	Safe & Effective Fire Response
Evans Ranch II - Mount Susan (Priority Project ID 14)	See **Section 4.c**	CSFS	First	Safe & Effective Fire Response
Ridgeline Lodgepole Priority Project (Priority Project ID 18)	See **Section 4.c**	USFS	First	Safe & Effective Fire Response
Snowshoe (Priority Project ID 24)	See **Section 4.c**	CSFS	First	Safe & Effective Fire Response
Birch Hill (Priority Project ID 27)	See **Section 4.c**	DMP	First	Safe & Effective Fire Response
Take individual measures in CWPIP to prepare for post-fire impacts	See **Section 3.b**	Residents	First	Resilient Landscapes
Echo Hills Forest Resilience (Priority Project ID 5)	See **Section 4.c**	USFS	First	Resilient Landscapes
Evans Ranch (Priority Project ID 13)	See **Section 4.c**	CSFS	First	Resilient Landscapes
Mount Blue Sky Outdoor Laboratory (Priority Project ID 15)	See **Section 4.c**	JCD, Jefferson County School District	First	Resilient Landscapes
Indian Creek Phases 1 and 2 (Priority Project ID 16)	See **Section 4.c**	JCD	First	Resilient Landscapes
Broce Ranch (Priority Project ID 19)	See **Section 4.c**	JCD	First	Resilient Landscapes
Elephant Butte (Priority Project ID 20)	See **Section 4.c**	DMP	First	Resilient Landscapes
Dedisse Park and Alderfer / Three Sisters Park (Priority Project ID 21)	See **Section 4.c**	DMP, JCOS	First	Resilient Landscapes
Alderfer / Three Sisters Park (Priority Project ID 22)	See **Section 4.c**	JCOS	First	Resilient Landscapes

Immediate Implementation Phase				
Brook Forest / Mount Susan (Priority Project ID 29)	See **Section 4.c**	JCD	First	Resilient Landscapes
Centaur Ranch (Priority Project ID 31)	See **Section 4.c**	JCD	First	Resilient Landscapes
Berrian Mountain (Priority Project ID 32)	See **Section 4.c**	DMP	First	Resilient Landscapes
Understand social factors related to evacuation	Talk to your neighbors, HOA, and Community Wildfire Ambassador to better understand social vulnerability in your plan unit (transportation, presence of children, limited mobility, etc.)	Residents	Second	Fire Adapted Communities
Continue meetings and collaboration with land management partners	Provide accountability on projects and continue to participate in cross-boundary mitigation programs such as the Northern Colorado Fireshed Collaborative, Central Colorado Forest Collaborative, Upper South Platte Partnership, Clear Creek Watershed & Forest Health Partnership, Jeffco Wildfire Risk Mitigation Working Group, and the Mountain Metro Wildfire Mitigation Council (MMWMC).	CWPP Implementation Committee	Second	Fire Adapted Communities
Enhance mutual aid and increase capacity for evacuation-related needs	Potential methods include cross-training, mutual aid agreements, updated annual operating plans, and availability of County Road and Bridge dozers/graders for fire response on red flag days.	County Sheriff's Offices, USFS, DFPC, EFR, JCOS, DMP	Second	Fire Adapted Communities
Participate in post-fire pre-planning	Complete the Colorado Post-Fire Recovery Playbook for the district and help emergency managers and organizations identify points of contact for organizations that need to be involved in post-fire recovery efforts.	County OEMs, County Road & Bridge, JCOS, DMP, USFS, EFR, conservation groups, watershed groups	Second	Fire Adapted Communities
Communicate post-fire pre-planning efforts	Ensure pre-planning around what rebuilding after a fire looks like is included and updated in relevant master plans and documents, and that all impacted agencies and partners are aware of this pre-planning.	Counties	Second	Fire Adapted Communities
Improve accessibility of slash current slash solutions	Consider offering fee-waivers for the SLASH program for certain residents and providing a program that will pick up slash material and bring it to the disposal site to reduce barriers for residents to complete mitigation work.	Jefferson County SLASH program, Clear Creek County's slash program	Second	Fire Adapted Communities
Provide information on HOA responsibility	Conduct outreach and education to inform residents of the responsibility of mitigating HOA-owned property.	EFR, HOAs, Community Wildfire Ambassadors	Second	Fire Adapted Communities

Immediate Implementation Phase				
Little Cub Creek Road, Stanley Park Road, and High Drive (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, DMP, EFR	Second	Fire Adapted Communities
South Hatch Drive, Cliff Road, South Merriam Drive, Monroe Drive, Isenberg Lane, South King Drive, Middleton Road, Elaine Road, Snowshoe Road, and South Columbine Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Second	Fire Adapted Communities
Blue Creek Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Second	Safe & Effective Fire Response
Buffalo Park Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, JCOS, EFR	Second	Safe & Effective Fire Response
South Brook Forest Road and Black Mountain Drive (Priority Roadway)	See **Section 4.b**	DMP, USFS, EFR	Second	Safe & Effective Fire Response
Stagecoach Boulevard (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, JCOS, CPW, EFR	Second	Safe & Effective Fire Response
Upper Bear Creek Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, JCOS, DMP, EFR	Second	Safe & Effective Fire Response
Organize HIZ Tours	Organize community-wide home hardening and defensible space tours to demonstrate exemplary HIZ work.	Residents, Wildfire Ambassadors	Third	Fire Adapted Communities
Improve road and address signage across the district	Visible, reflective signage is imperative for navigating during an emergency.	CDOT, County Road & Bridge, EFR, HOAs, landowners	Third	Safe & Effective Fire Response
Kerr Gulch Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge	Third	Safe & Effective Fire Response
Myers Gulch Road (Priority Roadway)	See **Section 4.b**	DMP, Jefferson County Road & Bridge, EFR	Third	Safe & Effective Fire Response
North Turkey Creek Road - central portion in the district (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Third	Safe & Effective Fire Response

Immediate Implementation Phase				
Use past events to plan, prioritize, and implement post-fire pre-planning efforts	Track locations where flooding and sedimentation have occurred after rainstorms in the past and use that information in planning, prioritizing, and implementation efforts.	DNR, County Sheriff's Offices, County Road & Bridge, conservation groups, water providers, watershed groups	Third	Resilient Landscapes
Short-term Implementation Phase				
Continue annual Community Wildfire Ambassador meeting	Support continued collaboration and coordination among plan units.	EFR	First	Safe & Effective Fire Response
Increase the likelihood of survivable road conditions during a wildfire	Conduct tree removal, cut low limbs, and mitigate hazardous fuel with high ignition potential along roadways.	CDOT, County Sheriff's Offices and Road & Bridge, JCOS, DMP, USFS, utility providers, HOAs, landowners	First	Safe & Effective Fire Response
Maintain and improve roadway access for accessibility & navigability	Maintain and improve roadway access where feasible by widening road networks, adding a center lane on 2-lane roads, and/or creating turnarounds and pullovers to accommodate fire engines and two-way traffic during evacuation.	CDOT, County Road & Bridge	First	Safe & Effective Fire Response
Evergreen Parkway (Highway 74) - Bergen Park area (Priority Roadway)	See **Section 4.b**	Jefferson County, EFR	First	Safe & Effective Fire Response
Evergreen Parkway (Highway 74) - east of Elk Meadow Park (Priority Roadway)	See **Section 4.b**	Jefferson County, EFR	First	Safe & Effective Fire Response
Highway 73 - from Evergreen Lake through Cub Creek Park (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	First	Safe & Effective Fire Response
Bergen Peak Communication Tower (Priority Project ID 9)	See **Section 4.c**	DMP, EFR	First	Safe & Effective Fire Response
Kerr Gulch Ridgeline Fuelbreak (Priority Project ID 11)	See **Section 4.c**	EFR, CSFS, JCD	First	Safe & Effective Fire Response
Understand wildfire risk reduction requirements in the district	Se**e Section 3.a**	Residents	First	Fire Adapted Communities
Engage in annual maintenance of your HIZ	Se**e Section 3.a**	Residents	First	Fire Adapted Communities

Short-term Implementation Phase				
Mitigate HIZ3	See **Section 3.a**	Residents	First	Fire Adapted Communities
Create linked defensible space	Work with neighbors with overlapping HIZ to create safer conditions and better tactical opportunities for wildland firefighters.	Residents	First	Fire Adapted Communities
Work with neighbors to become a Firewise USA site	Work within your neighborhood to meet a voluntary set of requirements that can help get you funding for mitigation action.	Residents	First	Fire Adapted Communities
Continue and increase collaboration within Community Wildfire Ambassador Program	Continue regular contact with dedicated ambassador coordinators and teams.	EFR, Community Wildfire Ambassadors	First	Fire Adapted Communities
Maintain and expand the community chipping program	Accommodate growing demand-- this will require hiring additional seasonal staff and/or maintaining seasonal positions for a longer period of time.	EFR	First	Fire Adapted Communities
Provide education and encouragement to enable burning	Lead community-wide conversations about community and private pile burning options to educate residents about the actual level of risk, methods used to mitigate risk, and safety procedures for pile burning.	EFR	First	Fire Adapted Communities
Encourage and facilitate the participation of residents in the DFPC certified burner program	This training and certification empowers individuals to safely plan and conduct pile burns, and it provides some level of civil liability protection for certified burners.	EFR, DFPC	First	Fire Adapted Communities
Expand burn windows in the area	Explore opportunities to expand burn windows based on current local and climatic conditions to safely accommodate more mitigation action throughout the year.	DMP, JCOS, surrounding FPDs, DFPC, JCPH, APCD	First	Fire Adapted Communities
Alderfer / Three Sisters Park (Priority Project ID 23)	See **Section 4.c**	JCOS	First	Resilient Landscapes
Create neighborhood reduced fuel zones	Work with EFR, JCD, CSFS, and surrounding public land management agencies to expand fuel reduction efforts beyond HIZ3 to create neighborhood reduced fuel zones.	Landowners, HOAs	Second	Fire Adapted Communities
Conduct public outreach and education on alternative landscape recommendations	Encourage and educate residents on fire-resistant plants and landscaping to reduce wildfire hazards in the HIZ.	EFR, HOAs, Community Wildfire Ambassadors	Second	Fire Adapted Communities
Aspen Way and Forest Estates Road (Priority Roadway)	See **Section 4.b**	Clear Creek County Road & Bridge, EFR	Second	Fire Adapted Communities

Short-term Implementation Phase				
Witter Gulch Road (Priority Roadway)	See **Section 4.b**	Clear Creek County Road & Bridge, EFR	Second	Fire Adapted Communities
Offer additional funding and training opportunities for firefighters	Offer additional training opportunities and funding for firefighters to take NWCG courses and complete task books, as well as other training opportunities.	County Sheriff's Offices, DFPC, EFR, and surrounding FPDs	Second	Safe & Effective Fire Response
Bergen Peak State Wildlife Area (Priority Project ID 8)	See **Section 4.c**	CSFS	Second	Safe & Effective Fire Response
O'Fallon / Pence (Priority Project ID 12)	See **Section 4.c**	DMP, EFR	Second	Safe & Effective Fire Response
Improve roadway features for post-fire impacts	Maintain and improve culverts, drainage features, and roadways in areas with elevated risk of post-fire sedimentation and debris flows.	CDOT and County Road & Bridge	Second	Resilient Landscapes
Bell Park / Cub Creek Park (Priority Project ID 25)	See **Section 4.c**	DMP	Second	Resilient Landscapes
Apply for grants for multi-homeowner projects	Apply for grants that support fuels mitigation for multi-homeowner projects.	HOAs, Community Wildfire Ambassadors, Residents	Third	Fire Adapted Communities
Educate the public on multi-faceted impacts of fire and long-term recovery	Identify social and economic impacts of fire and educate the public on how communities, individual residents, businesses, and FPD services may be affected.	County OEMs, CDPHE, JCPH, water providers, watershed groups, local business associations	Third	Fire Adapted Communities
Explore burning options	Explore options for bio-burning, air-curtain burning, and box burning. Work with DFPC to utilize the agency's large air-curtain burner.	County Sheriff's Offices, EFR, DFPC, HOAs	Third	Fire Adapted Communities
Bergen Parkway, Placid Drive, Pouty Drive, and Keystone Drive (Priority Roadway)	See **Section 4.b**	HOAs , Jefferson County Road & Bridge, EFR	Third	Fire Adapted Communities
County Road 65 - south of Meadows Vista Drive (Priority Roadway)	See **Section 4.b**	Jefferson County, EFR	Third	Fire Adapted Communities
Volunteer with EFR	Sign up to become a volunteer firefighter, med-tech, or a turnout today!	Residents	Third	Safe & Effective Fire Response
Create additional community cisterns	Collaborate to identify and implement projects for community cisterns in strategic locations.	EFR, water districts, HOAs, landowners	Third	Safe & Effective Fire Response
Maintain and improve water infrastructure	Regularly test and upgrade infrastructure related to water access for firefighting.	Water districts	Third	Safe & Effective Fire Response

Short-term Implementation Phase				
Improve roadway conditions for evacuation	Continually maintain and improve road surfaces for evacuation safety	CDOT, County Sheriff's Offices	Third	Safe & Effective Fire Response
Plan for and conduct post-fire mitigation actions	Evaluate tradeoffs and the suitability of different mitigation approaches prior to a wildfire and create plans for rapidly deploying appropriate mitigation measures.	DNR, JCOS, DMP, USFS, JCD, conservation groups, watershed groups, cooperative extensions	Third	Resilient Landscapes
Elk Meadows Prescribed Burns (Priority Project ID 10)	See **Section 4.c**	JCOS	Third	Resilient Landscapes
Mid-term Implementation Phase				
Bear Mountain Communication Tower (Priority Project ID 26)	See **Section 4.c**	Private landowners, EFR	First	Safe & Effective Fire Response
Southwestern POD Enhancement (Priority Project ID 17)	See **Section 4.c**	USFS, private landowners, JCD, CSFS	First	Safe & Effective Fire Response
Conduct fuels treatments in strategic locations for post-fire pre-planning	Conduct fuels treatments in strategic locations to reduce wildfire severity and extent, decrease the likelihood that hydrophobic soils form, and reduce the loss of roots, vegetation, and plant litter that hold soil in place.	JCOS, DMP, USFS, JCD, CSFS, conservation groups, watershed groups, cooperative extensions, HOAs, landowners	First	Resilient Landscapes
CCWFHP Priority Project FM-51 (Priority Project ID 2)	See **Section 4.c**	CCWFHP, EFR	First	Resilient Landscapes
Beaver Brook Watershed (Priority Project ID 3)	See **Section 4.c**	State Land Board, USFS, CSFS, CCWFHP	First	Resilient Landscapes
County Road 65 - north of Meadows Vista Drive (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Second	Fire Adapted Communities
Highway 73 - south of Cub Creek Park to North Turkey Creek Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Second	Safe & Effective Fire Response
Highway 73 - southern portion in the district (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Second	Safe & Effective Fire Response
Blue Creek Phase 3 (Priority Project ID 30)	See **Section 4.c**	JCD	Second	Resilient Landscapes
South Soda Creek Road (Priority Roadway)	See **Section 4.b**	Jefferson County Road & Bridge, EFR	Third	Fire Adapted Communities

Mid-term Implementation Phase				
Sinton Road (Priority Roadway)	See **Section 4.b**	USFS, EFR	Third	Safe & Effective Fire Response
Southern POD Enhancement (Priority Project ID 28)	See **Section 4.c**	USFS, private landowners, JCD, CSFS	Third	Safe & Effective Fire Response
Improve stream health	Undertake low-tech, process-based restoration (LTPBR) to improve stream health.	Conservation groups, watershed groups	Third	Resilient Landscapes
Conserve stream-side vegetation	Conserve stream-side vegetation, like willows and cottonwoods, to reduce soil erosion, moderate floods, and potentially slow down the spread of wildfire due to elevated fuel moisture.	DNR, JCOS, DMP, USFS, conservation groups, watershed groups, landowners	Third	Resilient Landscapes
Upper Clear Creek Watershed Association Pre-Wildfire Planning Area (Priority Project ID 1)	See **Section 4.c**	CCWFHP	Third	Resilient Landscapes

5.c. CWPP as a Living Document

CWPPs are a guide and a plan for action. They should be revisited and reviewed annually, at minimum, by EFR and the CWPP Implementation Committee. Check off goals as they are accomplished and celebrate treatments, outreach events, new partnerships, and other accomplishments. Keep track of the work that happens between updates, collect spatial data take pictures, and document implementation ideas for the next update.

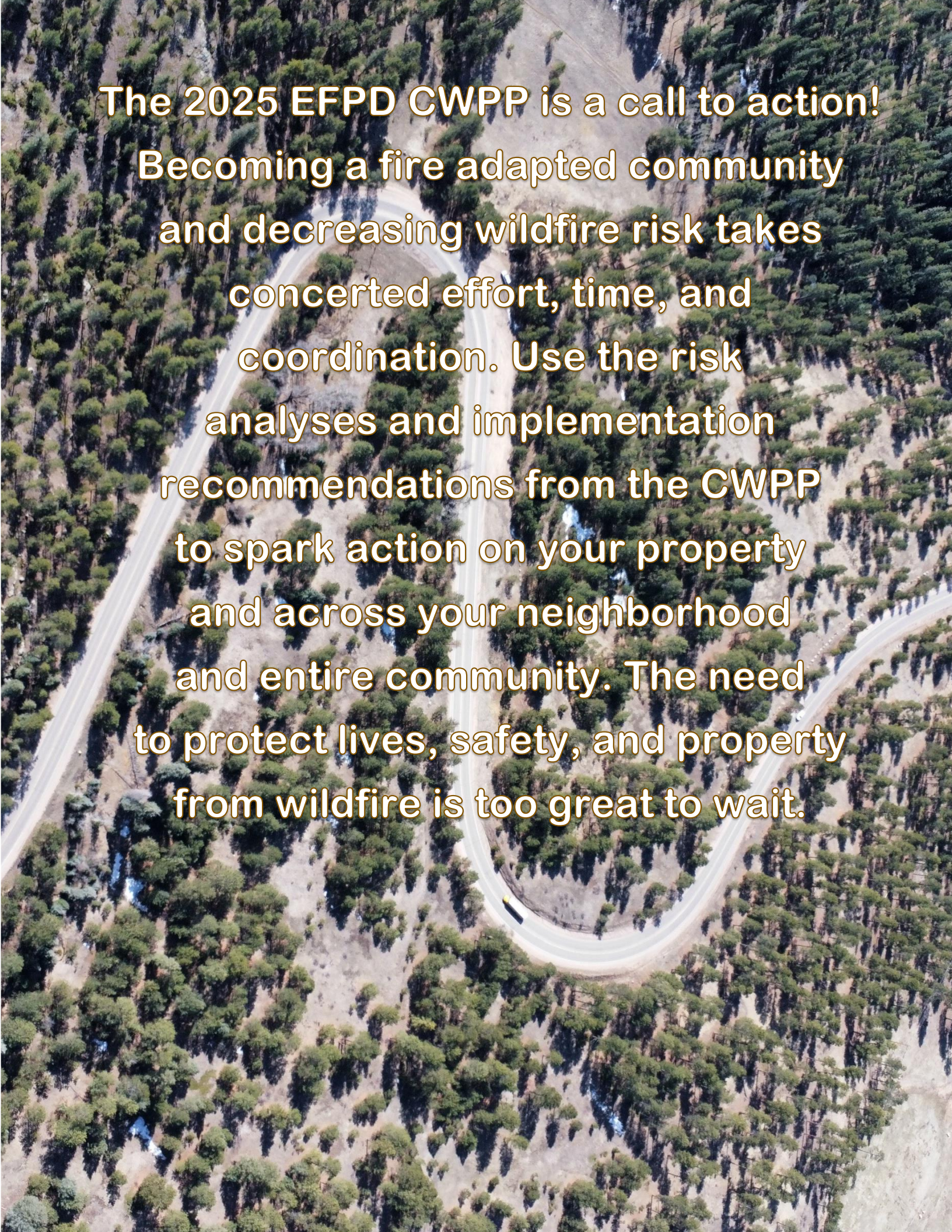
The CSFS requires CWPPs to be updated on a regular basis. It is recommended to update them every 5 years, at minimum. CWPPs greater than 10 years old are outdated and can exclude communities from successfully applying for competitive funding opportunities.

The update to this plan can either be a preface to this document or a new document that integrates with this one. The update to this plan must include:

- A description of progress made since the CWPP was created.
- A description of demographic changes in the community and other important infrastructure changes.
- Identification of new risks in the community.
- Updated risk analysis if major changes have happened between revisions.
- Updated and prioritized projects for the community with maps and descriptions.

The suggested review process by CSFS involves:

- Reviewing the existing CWPP.
- Engaging partners that have a vested interest in the plan.
- Hosting collaborative meetings.
- Documenting completed projects and demographic and landscape changes.
- Developing updated wildfire risk reduction priorities.
- Updating maps.
- Distributing updated drafts to key partners for review and input prior to final approval.
- Finalizing with Core Team signatures and submitting to CSFS State Office.


The 2025 EFPD CWPP is a call to action! Becoming a fire adapted community and decreasing wildfire risk takes concerted effort, time, and coordination. Use the risk analyses and implementation recommendations from the CWPP to spark action on your property and across your neighborhood and entire community. The need to protect lives, safety, and property from wildfire is too great to wait.

6. Glossary

20-foot wind speed: The rate of sustained wind over a 10-minute period at 20 feet above the dominant vegetation. The wind adjustment factor to convert surface winds to 20-foot wind speeds depends on the type and density of surface fuels slowing down windspeeds closer to the ground (NWCG, 2021).

Active crown fire: Fire in which a solid flame develops in the crowns of trees and advances from tree crown to tree crown independently of surface fire spread (NWCG, 2018b).

ArcCASPER: An intelligent capacity-aware evacuation routing algorithm used in the geospatial information system mapping program ArcMap to model evacuation times and congestion based on roadway capacity, road speed, number of cars evacuating per address, and the relationship between roadways congestion and reduction in travel speed (Shahabi and Wilson, 2014).

Basal area: Cross sectional area of a tree measured at breast height (4.5 feet above the ground). Used as a method of measuring the density of a forest stand in units such as ft^2/acre (USFS, 2021b).

Broadcast prescribed burning (aka, prescribed burn, controlled burn): A wildland fire originating from a planned ignition in accordance with applicable laws, policies, and regulations to meet specific objectives (NWCG, 2018b).

Canopy cover: The ground area covered by the crowns of all trees in an area as delimited by the vertical projection of their outermost crown perimeters (NWCG, 2019).

Canopy fuels: The stratum of fuels containing the crowns of the tallest vegetation (living or dead), usually above 20 feet (NWCG, 2018b).

Canopy: The more or less continuous cover of branches and foliage formed collectively by adjacent tree crowns (USFS, 2021b).

Canyon: A long, deep, very steep-sided topographic feature primarily cut into bedrock and often with a perennial stream at the bottom (NRCS, 2017).

Chain: Chains are commonly used in forestry and fire management as a measure of distance. 1 chain is equivalent to 66 feet. Chains were used for measurements in the initial public land survey of the U.S. in the mid-1800s.

Chute: A steep V-shaped drainage that is not as deep as a canyon but is steeper than a draw. Normal upslope air flow is funneled through a chute and increases in speed, causing upslope preheating from convective heat, thereby exacerbating fire behavior (NWCG, 2008).

Community Wildfire Protection Plan (CWPP): A plan developed in the collaborative framework established by the Wildland Fire Leadership Council and agreed to by state, Tribal, and local governments, local fire departments, other partners, and federal land management agencies in the vicinity of the planning area. CWPPs identify and prioritize areas for hazardous fuel reduction treatments, recommend the types and methods of treatment on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure, and recommend measures to reduce structural ignitability throughout the at-risk community. A CWPP may address issues such as wildfire response, hazard mitigation, community preparedness, and structure protection (NWCG, 2018b).

Convection: A type of heat transfer that occurs when a fluid, such as air or a liquid, is heated and travels away from the source, carrying heat along with it. Air around and above a wildfire expands as it is heated, causing it to become less dense and rise into a hot convection column. Cooler air flows in to replace the rising gases, and in some cases, this inflow of air creates local winds that further fan the flames. Hot convective gases move up slope and dry out fuels ahead of the flaming front, lowering their ignition temperature and increasing their susceptibility to ignition and fire spread. Homes located at the top of a slope can become preheated by convective heat transfer. Convection columns from wildfires carry sparks and embers aloft.

Crown (aka, tree crown): Upper part of a tree, including the branches and foliage (USFS, 2021b).

Defensible space: The area around a building where vegetation, debris, and other types of combustible fuels have been treated, cleared, or reduced to slow the spread of fire and reduce exposure to radiant heat and direct flame. It is encouraged that residents develop defensible space so that during a wildfire their home can stand alone without relying upon limited firefighter resources due to the great reduction in hazards they have undertaken. The Colorado State Forest Service defines three zones of defensible space: zone 1 (HIZ1) as 0 to 5 feet from the home, zone 2 (HIZ2) as 5 to 30 feet from the home, and zone 3 (HIZ3) as 30 to about 100 feet from the home (CSFS, 2021).

Direct attack: Any treatment applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel (NWCG, 2018b).

Draws: Topographic features created by a small, natural watercourse cutting into unconsolidated materials. Draws generally have a broader floor and more gently sloping sides than a ravine or gulch (NRCS, 2017).

Ecological restoration: The process of assisting the recovery of an ecosystem that has been damaged, degraded, or destroyed (SER, 2004). In ponderosa pine and dry mixed-conifer forests of the Colorado Front Range, ecological restoration involves transforming dense forests into a mosaic of single trees, clumps of trees, and meadows similar to historic forests that were maintained by wildfires and very resilient to them (Addington et al., 2018).

Ember: Small, hot, and carbonaceous particles. The term "firebrand" is also used to connote a small, hot, and carbonaceous particle that is airborne and carried for some distance in an airstream (Johnston, 2018).

Ember cast: The process of embers/firebrands/flaming sparks being transported downwind beyond the main fire and starting new spot fires and/or igniting structures. Short-range ember cast is when embers are carried by surface winds and long-range ember cast is when embers are carried high into the convection column and fall out downwind beyond the main fire. The number of embers reaching an area decreases exponentially with distance traveled, and the likelihood of structure ignition increases with the number of embers landing on receptive fuels (Caton et al., 2016). The distance used to differentiate short-range and long-range ember cast varies among sources. NWCG (2018b) classifies short-range ember cast as embers that travel less than 0.25 miles and long-range ember cast as embers that travel more than 0.25 miles, whereas Beverly et al., (2010) use a threshold of 0.06 miles. We use the Beverly et al., (2010) definition in this CWPP.

Fire adapted community (FAC): A human community consisting of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire (NWCG, 2018b). There is not a checklist or one silver bullet to become a FAC; there are many strategic actions and tools that should be used together to reduce shared risk. Risk mitigation is the responsibility of everyone who lives and works in the community—residents, community groups, fire protection districts, agency partners, non-governmental organizations, etc. Fire adaptation is an ongoing process of collaborative action to identify risk, mitigate it, and maintain the work overtime.

Fire behavior: The manner in which a fire reacts to the influences of fuel, weather, and topography. Characteristics of fire behavior include rate of spread, fire intensity, fire severity, and fire behavior category (NWCG, 2018b).

Fire history: A general term referring to the historic fire occurrence in a specific geographic area (NWCG, 2018b).

Fire intensity (aka, fireline intensity): (1) The product of the available heat of combustion per unit of ground and the rate of spread of the fire, interpreted as the heat released per unit of time for each unit length of fire edge, or (2) the rate of heat release per unit time per unit length of fire front (NWCG, 2018b).

Fire regime: Description of the patterns of fire occurrences, frequency, size, and severity in a specific geographic area or ecosystem. A fire regime is a generalization based on fire histories at individual sites. Fire regimes can often be described as cycles because some parts of the histories usually get repeated, and the repetitions can be counted and measured, such as fire return interval (NWCG, 2018b).

Fire severity. Degree to which a site has been altered or disrupted by fire; loosely, a product of fire intensity and residence time (NWCG, 2018b). Fire severity is determined by visually inspecting or measuring the effects that wildfire has on soil, plants, fuel, and watersheds. Fire severity is often classified as low-severity (less than 20% of

overstory trees killed) and high severity (more than 70% of overstory trees kills). Moderate-severity or intermediate fire severity falls between these two extremes (Agee, 1996). Specific cutoffs for fire severity classifications differ among researchers. For example, Sheriff et al. (2014) define high-severity fires as those killing more than 80% of overstory trees.

Fire weather conditions: Weather conditions that influence fire ignition, behavior, and suppression, for example, wind speed, wind direction, temperature, relative humidity, and fuel moisture (NWCG, 2018b).

Firebreak: A natural or constructed barrier where all vegetation and organic matter have been removed down to bare mineral soil. Firebreaks are used to stop or slow wildfires or to provide a control line from which to work (Bennett et al., 2010; NWCG, 2018b).

Fireline: (1) The part of a containment or control line that is scraped or dug to mineral soil, or (2) the area within or adjacent to the perimeter of an uncontrolled wildfire of any size in which action is being taken to control fire (NWCG, 2018b).

Flame length: The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface). Flame length is measured on an angle when the flames are tilted due to effects of wind and slope. Flame length is an indicator of fire intensity (NWCG, 2018b).

FlamMap: A fire analysis desktop application that can simulate potential fire behavior and spread under constant environmental conditions (weather and fuel moisture) (Finney, 2006). FlamMap is one of the most common models used by land managers to assist with fuel treatment prioritization, and it is often used by fire behavior analysts during wildfire incidents.

Fuel model: A stylized set of fuel bed characteristics used as input for a variety of wildfire modeling applications to predict fire behavior (Scott and Burgan, 2005).

Fuel reduction: Manipulation, combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage from wildfires and resistance to control (NWCG, 2018b).

Fuelbreak: A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled. Fuelbreaks differ from firebreaks due to the continued presence of vegetation and organic soil. Trees in shaded fuelbreaks are thinned and pruned to reduce the fire potential but enough trees are retained to make a less favorable microclimate for surface fires (NWCG, 2018b).

Fuels mitigation / management: The act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire, in support of land management objectives (NWCG, 2018b).

Fuels: Any combustible material, most notably vegetation in the context of wildfires, but also including petroleum-based products, homes, and other man-made materials that might combust during a wildfire in the wildland-urban interface. Wildland fuels are described as 1-, 10-, 100-, and 1000-hour fuels. One-hour fuels are dead vegetation less than 0.25 inch in diameter (e.g., dead grass), ten-hour fuels are dead vegetation 0.25 inch to 1 inch in diameter (e.g., leaf litter and pine needles), one hundred-hour fuels are dead vegetation 1 inch to 3 inches in diameter (e.g., fine branches), and one thousand-hour fuels are dead vegetation 3 inches to 8 inches in diameter (e.g., large branches). Fuels with larger diameters have a smaller surface area to volume ratio and take more time to dry out or become wetter as relative humidity in the air changes (NWCG, 2018b).

Handcrews: A number of individuals that have been organized and trained and are supervised principally for operational assignments on an incident (NWCG, 2018b).

Handline: Fireline constructed with hand tools (NWCG, 2018b).

Hazards: Any real or potential condition that can cause injury, illness, or death of personnel, or damage to, or loss of equipment or property (NWCG, 2018b).

Home hardening: Steps taken to improve the chance of a home and other structures withstanding ignition by radiant and convective heat and direct contact with flames or embers. Home hardening involves reducing structure ignitability by changing building materials, installation techniques, and structural characteristics of a

home (California Fire Safe Council, 2020). A home can never be made fireproof, but home hardening practices in conjunction with creating defensible space increases the chance that a home will stand strong during a wildfire.

Home ignition zone (HIZ): The characteristics of a home and its immediate surroundings within 100 feet of structures. Conditions in the HIZ principally determine home ignition potential from radiant heat, convective heat, and ember cast (NWCG, 2018b).

Ignition-resistant building materials: Materials that resist ignition or sustained flaming combustion. Materials designated ignition-resistant have passed a standard test that evaluates flame spread on the material (Quarles, 2019; Quarles and Pohl, 2018).

Incident Response Pocket Guide (IRPG): Document that establishes standards for wildland fire incident response. The guide provides critical information on operational engagement, risk management, all hazard response, and aviation management. It provides a collection of best practices that have evolved over time within the wildland fire service (NWCG, 2018a).

Indirect attack A method of suppression in which the control line is located some considerable distance away from the fire's active edge. Generally done in the case of a fast-spreading or high-intensity fire and to utilize natural or constructed firebreaks or fuelbreaks and favorable breaks in the topography. The intervening fuel is usually backfired; but occasionally the main fire is allowed to burn to the line, depending on conditions (NWCG, 2018b).

Insurance Services Office (ISO) rating: ISO ratings are provided to fire departments and insurance companies to reflect how prepared a community is for fires in terms of local fire department capacity, water supply, and other factors (see more information online at https://www.isomitigation.com/ppc/fsrs/).

Ladder fuels: Fuels that provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees with relative ease. Ladder fuels help initiate torching and crowning and assure the continuation of crowning. Ladder fuels can include small trees, brush, and lower limbs of large trees (NWCG, 2018b).

LANDFIRE: A national program spearheaded by the U.S. Department of the Interior and the U.S. Department of Agriculture to provide spatial products characterizing vegetation, fuels, fire regimes, and disturbances across the entire United States. LANDFIRE products serve as standardized inputs for fire behavior modeling. More information about the program is available online at https://www.landfire.gov/.

Lop-and-scatter: Cutting (lopping) branches, tops, and unwanted boles into shorter lengths and spreading that debris evenly over the ground such that resultant logging debris will lie close to the ground (NWCG, 2018b).

Mastication: A slash management technique that involves using a machine to grind, chop, or shred vegetation into small pieces that then become surface fuel (Jain et al., 2018).

Mitigation actions: Actions that are implemented to reduce or eliminate (mitigate) risks to persons, property, or natural resources. These actions can be undertaken before and during a wildfire. Actions before a fire include fuel treatments, vegetation modification in the home ignition zone, and structural changes to increase the chance a structure will stand strong during a wildfire (aka, home hardening). Mitigation actions during a wildfire include mechanical and physical tasks, specific fire applications, and limited suppression actions, such as constructing firelines and creating "black lines" through the use of controlled burnouts to limit fire spread and behavior (NWCG, 2018b).

Mosaic landscape: A heterogeneous area composed of different communities or a cluster of different ecosystems that are similar in function and origin in the landscape. It consists of 'patches' arranged in a 'matrix', where the patches are the different ecosystems and the matrix is how they are arranged over the land (Hansson et al., 1995).

National Wildfire Coordinating Group (NWCG): An operational group established in 1976 through a Memorandum of Understanding between the U.S. Department of Agriculture and Department of the Interior to coordinate programs of the participating agencies to avoid wasteful duplication and to provide a means of constructively working together. NWCG provides a formalized system and agreed upon standards of training, equipment, aircraft, suppression priorities, and other operational areas. More information about NWCG is available online at https://www.nwcg.gov/.

Noncombustible building materials: Material of which no part will ignite or burn when subjected to fire or heat, even after exposure to moisture or the effects of age. Materials designated noncombustible have passed a standard test (Quarles, 2019; Quarles and Pohl, 2018).

Non-survivable road: Portions of roads adjacent to areas with predicted flame lengths greater than 8 feet under severe fire weather conditions. Potentially non-survivable flame lengths start at 8 feet according to the Haul Chart, which is a standard tool used by firefighters to relate flame lengths to tactical decisions (NWCG, 2019). Drivers stopped or trapped on these roadways would have a lower chance of surviving radiant heat from fires of this intensity. Non-survivable conditions are more common along roads that are lined with thick forests, particularly with trees that have limbs all the way to the ground and/or abundant saplings and seedlings.

Overstory: Layer of foliage in a forest canopy, particularly tall mature trees that rise above the shorter immature understory trees (USFS, 2021b).

Passive crown fire: Fire that arises when surface fire ignites the crowns of trees or groups of trees (aka, torching). Torching trees reinforce the rate of spread, but passive crown fires travel along with surface fires (NWCG, 2018b).

Pile burning: Piling slash resulting from logging or fuel management activities into manageable piles that are subsequently burned during safe and approved burning conditions (NWCG, 2018b).

Potential operational delineations (PODs): PODs are topographic areas bounded by features suitable for fire control (e.g., ridgetops and roads) that can be used for proactive wildfire decision making and tactical operations during wildfire events. PODs can serve as management units for proactive ecological resilience and wildfire risk mitigation, as well as for cross-boundary and collaborative land and fire management planning (Thompson et al., 2022).

Radiation: A method of heat transfer by short-wavelength energy through air (aka, infrared radiation). Surfaces that absorb radiant heat warm up and radiate additional short-wavelength energy themselves. Radiant heat is what you feel when sitting in front of a fireplace. Radiant heat preheats and dries fuels adjacent to the fire, which initiates combustion by lowering the fuel's ignition temperature. The amount of radiant heat received by fuels increases as the fire front approaches. Radiant heat is a major concern for the safety of wildland firefighters and can ignite homes without direct flame contact.

Rate of spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Rate of spread is usually expressed in chains or acres per hour for a specific period in the fire's history (NWCG, 2018b).

Ravine: Topographic feature created by streams cutting into unconsolidated materials. They are narrow, steep-sided, and commonly V-shaped. Ravines are steeper than draws (NRCS, 2017).

Resilience: The two main definitions of resilience are (1) the ability of an ecosystem to recover to its original state after a disturbance (aka, "engineering resilience") and (2) the ability of an ecosystem to absorb disturbance before fundamentally changing its structure and/or function (aka, "ecological resilience") (Dakos and Kéfi, 2022).

Risk: (1) The chance of fires starting as determined by the presence and activity of causative agents (e.g., lightning), (2) a chance of suffering harm or loss, or (3) a causative agent (NWCG, 2018b).

Roadside fuel treatment: A natural or manmade change in fuel characteristics along a roadway which affects fire behavior so that fires burning into them can be more readily controlled, survivable conditions with shorter flame lengths are more likely during a wildfire, and firefighter access is enhanced (NWCG, 2018b).

Saddle: A low point on a ridge or interfluve, generally a divide or pass between the heads of streams flowing in opposite directions. The presence of a saddle funnels airflow and increases windspeed, thereby exacerbating fire behavior (NRCS, 2017).

Safety zones: An area cleared of flammable materials used by firefighters for escape in the event the line is outflanked or spot fires outside the control line render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand, allowing the fuels inside the control line to be consumed before going

ahead. Safety zones may also be constructed as integral parts of fuelbreaks; they are greatly enlarged areas which can be used with relative safety by firefighters without the use of a fire shelter (NWCG, 2018b).

Shaded fuelbreak: Fuel treatments in timbered areas where the trees on the break are thinned and pruned to reduce fire potential yet enough trees are retained to make a less favorable microclimate for surface fires (NWCG, 2018b).

Slash: Debris resulting from natural events such as wind, fire, or snow breakage or from human activities such as road construction, logging, pruning, thinning, or brush cutting. Slash includes logs, bark, branches, stumps, treetops, and broken understory trees or brush (NWCG, 2018b).

Smoldering combustion: The combined processes of dehydration, pyrolysis, solid oxidation, and scattered flaming combustion and glowing combustion, which occur after the flaming combustion phase of a fire; often characterized by large amounts of smoke consisting mainly of tars (NWCG, 2018b).

Spot fire: Fire ignited outside the perimeter of the main fire by an ember (NWCG, 2018b). Spot fires are particularly concerning because they can form a new flaming front, move in unanticipated directions, trap firefighters between two fires, and require additional firefighting resources to control.

Spotting: Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire (NWCG, 2018b).

Stand: An area of forest that possesses sufficient uniformity in species composition, age, size, structural configuration, and spatial arrangement to be distinguishable from adjacent areas (USFS, 2021b).

Structure protection: The protection of homes or other structures from an active wildland fire (NWCG, 2018b).

Structure triage: The process of inspecting and classifying structures according to their defensibility or non-defensibility, based on fire behavior, location, construction, and adjacent fuels. Structure triage involves a rapid assessment of a dwelling and its immediate surroundings to determine its potential to escape damage by an approaching wildland fire. Triage factors include the fuels and vegetation in the yard and adjacent to the structure, roof environment, decking and siding materials, prevailing winds, topography, etc. (NWCG, 2018b). There are four categories used during structure triage: (1) defensible – prep and hold, (2) defensible – stand alone, (3) non-defensible – prep and leave, and (4) non-defensible – rescue drive-by. The most important feature differentiating defensible and non-defensible structures is the presence of an adequate safety zone for firefighters (NWCG 2018a). Firefighters conduct structure triage and identify defensible homes during wildfire incidents. Categorization of homes is not pre-determined; triage decisions depend on fire behavior and wind speed due to their influence on the size of safety zones needed to keep firefighters safer.

Suppression: The work and activity used to extinguish or limit wildland fire spread (NWCG, 2018b).

Surface fire: Fire that burns fuels on the ground, which include dead branches, leaves, and low vegetation (NWCG, 2018b).

Surface fuels: Fuels lying on or near the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, and low stature living plants (NWCG, 2018b).

Task book: A document listing the performance requirements (competencies and behaviors) for a position in a format that allows for the evaluation of individual (trainee) performance to determine if an individual is qualified in the position. Successful performance of tasks, as observed and recorded by a qualified evaluator, will result in a recommendation to the trainee's home unit that the individual be certified in the position (NWCG, 2018b).

Torching: The burning of the foliage of a single tree or a small group of trees from the bottom up. Torching is the type of fire behavior that occurs during passive crown fires and can initiate active crown fires if tree canopies are close to each other (NWCG, 2018b).

Values at risk: Aspects of a community or natural area considered valuable by an individual or community that could be negatively impacted by a wildfire or wildfire operations. These values can vary by community and include diverse characteristics such as homes, specific structures, water supply, power grids, natural and cultural resources, community infrastructure, and other economic, environmental, and social values (NWCG, 2018b).

Watershed (aka, drainage basin or catchment): An area of land where all precipitation falling in that area drains to the same location in a creek, stream, or river. Smaller watersheds come together to create basins that drain into bays and oceans (NOAA, 2021).

Wildfire-resistant building materials: A general term used to describe a material and design feature that can reduce the vulnerability of a building to ignition from wind-blown embers or other wildfire exposures (Quarles, 2019; Quarles and Pohl, 2018).

Wildland-urban interface (WUI): Any area where the built environment meets wildfire-prone areas—places where wildland fire can move between natural vegetation and the built environment and result in negative impacts on the community (Mowry and Johnston, 2018). For the purpose of this CWPP, the WUI was delineated using potential operational delineations (PODs) to capture not just populated areas but also portions of the landscape where fires could originate and spread into the community. Mount Evans Wilderness was excluded from the WUI because very little vegetation management will occur in a Wilderness Area, and there are POD boundaries between the Wilderness Area and the district that could be used to slow or suppression wildfire spread towards the community (**Figure 2.c.2**).

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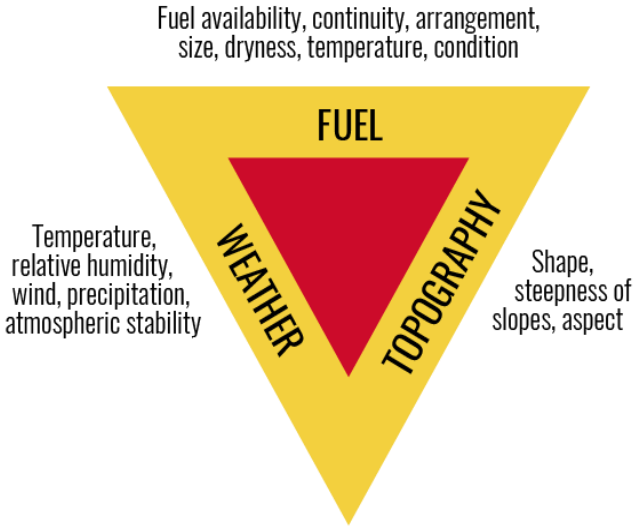
Appendix A. Introduction to Wildfire Behavior and Terminology

Fire Behavior Triangle

Complex interactions among wildland fuels, weather, and topography determine how wildfires behave and spread. These three factors make up the sides of the fire behavior triangle, and they are the variables that wildland firefighters pay attention to when assessing potential wildfire behavior during an incident (NWCG, 2019).



Interactions between fuels, weather, and topography dictate fire behavior. Source: California State University.

Fuels

Fuels include live vegetation such as trees, shrubs, shrubs, and grasses, dead vegetation like pine needles and cured grass, and materials like houses, sheds, fences, trash piles, and combustible chemicals.

Grasses and pine needles are known as "flashy" fuels because they easily combust and burn the fastest of all fuel types. If you think of a campfire, flashy fuels are the kindling that you use to start the fire. Flashy fuels dry out faster than other fuel types when relative humidity drops or when exposed to radiant and convective heat[3]. Fires in grassy fuel types can spread quickly across large areas, and fire behavior can change rapidly with changes in weather conditions.

Dead branches on the surface dry out slower than flashy fuels, release more radiant heat when they burn, and take longer to completely combust. The rate of spread is fast to moderate through shrublands depending on their moisture content, and long flame lengths can preclude direct attack by firefighters. Shrubs and small trees can also act as ladder fuels that carry fire from the ground up into the tree canopy.

Dead trees (aka, snags) and large downed logs are called "heavy fuels," and they take the longest to dry out when relative humidity drops and when exposed to radiant and convective heat. Heavy fuels release tremendous radiant heat when they burn, and they take longer to completely combust, just like a log on a campfire. Fire spread through a forest is slower than in a grassland or shrubland, but forest fires release more heat and can be extremely difficult and unsafe for firefighters to suppress. An abundance of dead trees killed by drought, insects, or disease can exacerbate fire behavior, particularly when dead trees still have dry, red needles (Moriarty et al., 2019; Parsons et al., 2014).

Topography

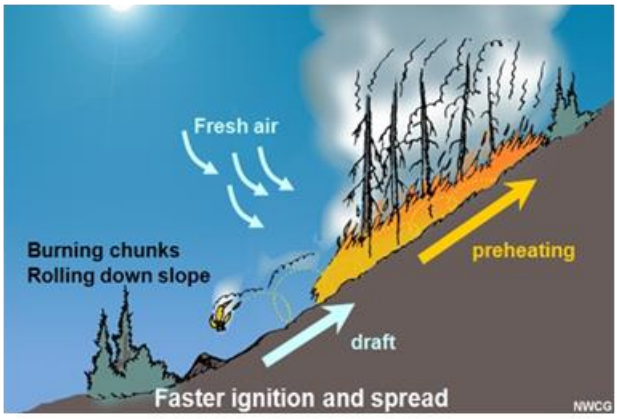
Topography (slope and aspect) influences fire intensity, speed, and spread. In the northern hemisphere, north-facing slopes experience less sun exposure during the day, resulting in higher fuel moistures. Tree density is often higher on north-facing slopes due to higher soil moisture. South-facing slopes experience more sun exposure and

[3] Radiant heat transfer occurs by short-wavelength energy traveling through air. Radiant heat is what you feel when sitting in front of a fire. Radiant heat preheats and dries fuels adjacent to a wildfire, which initiates combustion by lowering the fuel's ignition temperature. Convective heat transfer occurs when air is heated, travels away from the source, and carries heat along with it. Convective heat is what you would feel if you put your hand in the air above an open flame. Air around and above a wildfire expands as it is heated, causing it to become less dense and rise into a hot convection column. Cooler air flows in to replace the rising gases, and in some cases, this inflow of air creates local winds that further fan the flames. Hot convective gases move up slope and dry out fuels ahead of the flaming front, lowering their ignition temperature and increasing their susceptibility to ignition and fire spread.

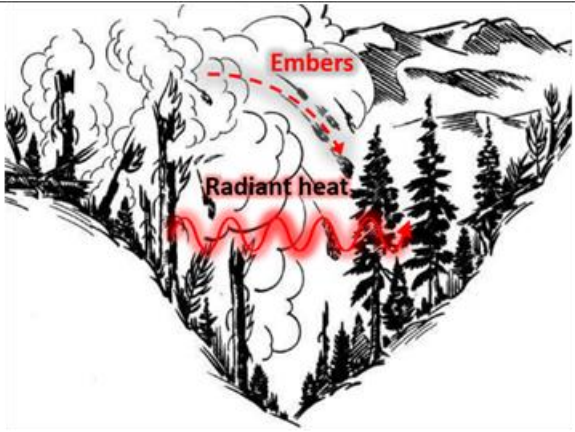
higher temperatures and are often covered in grasses and shrubs. The hotter and drier conditions on south-facing slopes mean fuels are drier and more susceptible to combustion, and the prevalence of flashy fuels results in fast rates of fire spread.

Fires burn more quickly up steep slopes due to radiant and convective heating. Fuels are brought into closer proximity with the progressing fire, causing them to dry out, preheat, and become more receptive to ignition, thereby increasing rates of spread. Steep slopes also increase the risk of burning material rolling and igniting unburnt fuels below.

Narrow canyons can experience increased combustion because radiant heat from a fire burning on one side of the canyon can heat fuel on the other side of the canyon. Embers can easily travel from one side of a canyon to the other. Topography also influences wind behavior and can make fire spread unpredictable. Wildfires burning through steep and rugged topography are harder to control due to reduced access for firefighters and more unpredictable and extreme fire behavior.



Slope increases fire spread through radiant and convective heating (source: NWCG).



Fires can easily cross narrow canyons (source: U.S. Forest Service).

Weather

Weather conditions impacting fire behavior include temperature, relative humidity, precipitation, wind speed, and wind direction. The National Weather Service uses a system called a red flag warning to indicate local weather conditions that can combine to produce increased risk of fire danger and behavior. Red flag warning days indicate an increased risk of extreme fire behavior due to a combination of hot temperatures, very low humidity, dry fuels, strong winds, and the presence of thunderstorms.

Direct sunlight and hot temperatures impact how ready fuels are to ignite. Warm air preheats fuels and brings them closer to their ignition point. When relative humidity is low, the dry air can absorb moisture from fuels, especially flashy fuels, making them more susceptible to ignition. Long periods of dry weather can dehydrate heavier fuels, including downed logs, increasing the risk of wildfires in areas with heavy fuel loads.

RED FLAG CRITERIA

Red flag days are warnings issued by the National Weather Service (NWS) to indicate that warm temperatures, very low humidity, and stronger winds are expected to result in elevated fire danger in the next 24-48 hours.

The NWS Denver/Boulder Forecast Office has two options for red flag criteria:

Option 1	Option 2
Relative humidity <= 15% Wind gusts >= 25 mph Dry fuels	Widely scattered dry thunderstorms Dry fuels

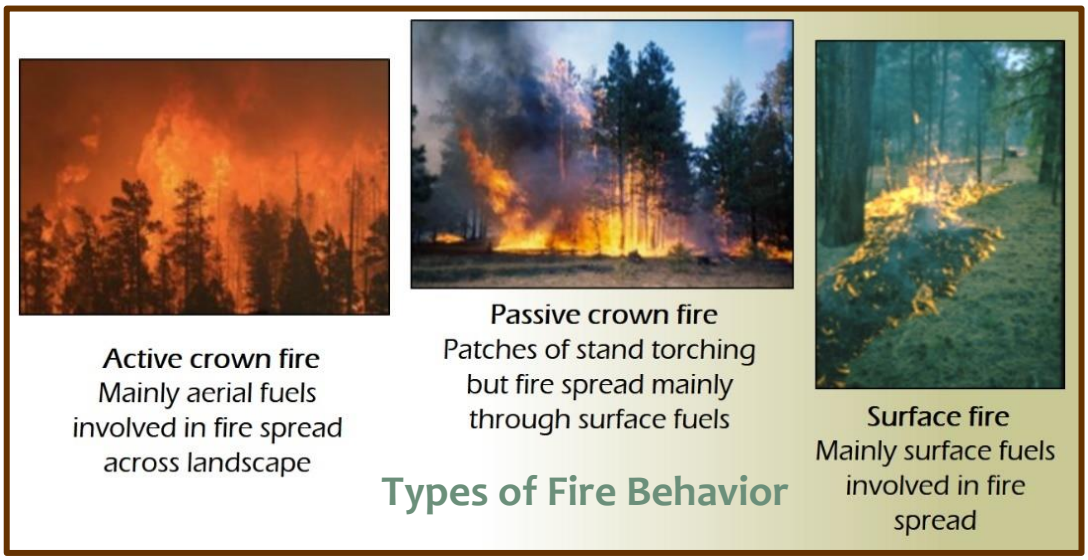
Wind influences fire behavior by drying out fuels, increasing the amount of oxygen feeding the fuel, preheating vegetation through convective heat, and carrying embers more than a mile ahead of an active fire. Complex topography, such as chutes, saddles, and draws, can funnel winds in unpredictable directions, increasing wind speeds and resulting in erratic fire behavior.

Categories of Fire Behavior

Weather, topography, and fuels influence fire behavior, and fire behavior in turn influences the tactical options available for wildland firefighters and the risks posed to lives and property. Three general categories of fire behavior are described throughout this CWPP: surface fire, passive crown fire, and active crown fire.

- **Surface fire –** Fire that burns fuels on the ground, which include dead branches, leaves, and low vegetation. Surface fires can be addressed with direct attack using handcrews when flame lengths are less than four feet and with equipment when flame lengths are less than eight feet. Surface fires can emit significant radiant heat, which can ignite nearby vegetation and homes.
- **Passive crown fire –** Fire that arises when a surface fire ignites the crowns of trees or groups of trees (aka, torching). Torching trees reinforce the rate of spread, but passive crown fires travel along with surface fires. Firefighters can sometimes address passive crown fires with an indirect attack, such as dropping water or retardant out of aircraft or digging fireline at a safe distance from the flaming front. The likelihood of passive crown fire increases when trees have low limbs and when smaller trees and shrubs grow below tall trees and act as ladder fuels. Radiant heat and ember production from passive crown fires can threaten homes during wildfires.
- **Active crown fire –** Fire in which a solid flame develops in the crowns of trees and advances from tree crown to tree crown independently of surface fire spread. Crown fires are very difficult to contain, even with the use of aircraft dropping fire retardant, due to long flame lengths and the tremendous release of radiant energy. The likelihood of active crown fires increases when trees have interlocking canopies. Radiant heat and ember production from active crown fires can threaten homes during wildfires.

Passive and active crown fires can result in short- and long-range ember production that can create spot fires and ignite homes. Spot fires are particularly concerning because they can form a new flaming front, move in unanticipated directions, trap firefighters between two fires, and require additional firefighting resources to control. Crown fires are generally undesirable in the wildland-urban interface (WUI) because of the risk to lives and property; however, passive and active crown fires are part of the natural fire regime for some forest types and result in habitat for plant and animal species that require recently disturbed conditions (Keane et al., 2008; Pausas and Parr, 2018). Historically, passive and active crown fires occurred in some lodgepole pine forests and higher-elevation ponderosa pine and mixed-conifer forests on north-facing slopes (Addington et al., 2018; Romme, 1982).



Wildfire Threats to Homes

Wildfires can ignite homes through several pathways: radiant heat, convective heat, and direct contact with flames or embers. The ability for radiant heat to ignite a home is based on the properties of the structure (i.e., wood, metal, or brick siding), the temperature of the flame, the ambient air temperature, and the distance from the flame (Caton et al., 2016). Ignition from convective heat is more likely for homes built along steep slopes and in ravines and draws. For flames to ignite a structure, they must directly contact the building long enough to cause ignition. Flames from a stack of firewood near a home could cause ignition to the home, but flames that quickly burn through grassy fuels are less likely to ignite the home (although the potential still exists). Fires can also travel between structures along fuel pathways such as a fence or row of shrubs connecting a shed and a home (Maranghides et al., 2022). Some housing materials can burn hotter than the surrounding vegetation, thereby exacerbating wildfire intensity and initiating home-to-home ignition (Mell et al., 2010).

Homes built mid-slope and at the top of steep slopes and within ravines and draws are at greater risk of convective heat from wildfires. A wildfire could rapidly spread up this steep slope and threaten the home above. Photo credit: The Ember Alliance

Homes can be destroyed during wildfires even if surrounding vegetation has not burned. During many wildland fires, 50 to 90% of homes ignite due to embers rather than radiant heat or direct flame (Gropp, 2019; Johnston, 2018). Embers can ignite structures when they land on roofs, enter homes through exposed eaves, or get under wooden decks. Embers can also ignite nearby vegetation and other combustible fuels, which can subsequently ignite a home via radiant heating or direct flame contact. Burning homes can release embers that land on and ignite nearby structures, causing destructive home-to-home ignitions, as evidenced by the destructive 2021 Marshall Fire in Boulder County. Structural characteristics of a home can increase its exposure to embers and risk of combustion, such as wood shingle roofs and unenclosed eaves and vents (Hakes et al., 2017; Syphard and Keeley, 2019). Embers can also penetrate homes if windows are destroyed by radiant or convective heat.

Resources for More Information on Fire Behavior

- Introduction to Fire Behavior from the National Wildfire Coordinating Group (9:57 minute video)
- The Fire Triangle from the National Wildfire Coordinating Group (7:26 minute video)
- Understanding Fire Behavior in the Wildland/Urban Interface from the National Fire Protection Association (20:51 minute video)
- Understanding Fire from California State University (website)
- S-190 Introduction to Wildland Fire Behavior Course Materials from the NWCG (PowerPoints, handouts, and videos)

Appendix B. Community Risk Assessment and Modeling Methodology

Fire Behavior Analysis

Interpretations and Limitations

Fire behavior models have been rigorously developed and tested based on over 40 years of experimental and observational research (Sullivan, 2009). Fire behavior models allow us to identify areas that could experience high-severity wildfires and pose a risk to lives, property, and other values at risk.

Fire behavior analyses are useful for assessing relative risk across the entire district and are not intended to assess specific fire behavior in the vicinity of individual homes. It is not feasible to predict every combination of fire weather conditions, ignition locations, and suppression activities that might occur during a wildfire. Uncertainty regarding where a wildfire might ignite and how it will behave is inevitable until one occurs. Even then, fire behavior can be erratic and unpredictable.

Important Considerations about Fire Behavior Predictions

Fire behavior models can provide reasonable estimates of relative wildfire behavior across a landscape. However, wildfire behavior is complex, and models are a simplification of reality. Models also struggle to capture impacts of structures on wildfire spread and home-to-home ignitions. It is recommended to use the fire behavior analyses within this document to understand relative risk at a landscape scale, and not as an indication of a single property's risk.

Exceptionally hot, dry, and windy conditions are increasingly common due to climate change and could result in even more extreme fire behavior across the district than predicted by this analysis.

The 2025 CWPP for the district utilizes the 2022 Wildfire Risk for All Lands in Colorado (COAL) analyses led by Pyrologix, LLC for the U.S. Forest Service Rocky Mountain Region (Napoli et al., 2022b). The 2022 COAL is an objective, science-based risk assessment used to support risk management and proactive wildfire planning and management, including CWPPs, across Colorado. The assessment uses state-of-the art fire behavior modeling conducted with the large-fire simulator (FSim) (Finney et al., 2011) and WildEST (Scott, 2020), which deploys a command-line version of FlamMap (Finney, 2006).

Fire behavior models like FSim and WildEST do not adequately account for structures as a fuel type. Structures like homes, sheds, fences, and other buildings are absolutely a source of fuel during wildland fires and can produce massive amounts of embers that contribute to home-to-home ignitions (Maranghides et al., 2022). FSim and WildEST cannot account for fine-scale variation in surface fuel loads, defensible space created by individual homeowners, and the ignitability of building materials, nor are these data available at the scale of individual homes across an entire fire protection district. In the absence of this information and a deeper quantitative understanding of interactions between structures and wildland vegetation during a wildfire, fire behavior cannot be modeled for areas dominated by homes in the same fashion as areas dominated by grassland, shrubland, or forest vegetation.

For this reason, TEA conducted a separate analysis to predict potential exposure of homes to radiant heat and ember cast (see section below). Maps of fire behavior predictions include areas indicated as "unburnable / not modeled." Parking lots, roadways, bodies of water, and barren areas are considered unburnable; areas dominated by homes and buildings were classified as "not modeled" because fire behavior models do not include structures as a fuel type (Scott and Burgan, 2005).

Plan Unit Relative Risk Assessment

CWPP Plan Units

The Ember Alliance and CWPP Advisory Committee compared the ***relative*** risk that wildfires pose to life and property in 26 plan units across the district (**Figure 3.b.1**). Plan units are areas with shared fire risk where residents can organize and support each other to effectively mitigate hazardous fuels across the plan unit. We delineated 26 plan units in the district by considering clusters of addresses, connectivity of roads, topographic features, land parcels, and local knowledge of community organization. The boundaries and names of several plan units were amended from the 2020 CWPP to improve the cohesion of each plan unit in terms of evacuation routes and to more accurately reflect community cohesion developed through the EFR Community Wildfire Ambassador program.

Risk Rating Approach

An important part of the district's 2025 CWPP was assessing relative risk among plan units to help prioritize hazard mitigation and develop priority plan unit-specific recommendations. Plan units receiving a "high" relative rating have risk factors that are lower than risk factors in plan units with an "extreme" rating, but they are still areas with wildfire hazards. Relative risk was assessed in four categories: potential fire behavior, fire suppression challenges (e.g., limited hydrant availability and engine access), evacuation challenges, and home ignition zone hazards.

This assessment was based on predictions of fire behavior, radiant heat and ember cast exposure, roadway survivability, relative evacuation times, and local knowledge from the CWPP Advisory Committee and other fire and fuel professionals in the district about evacuation hazards, suppression challenges, and hazards in the home ignition zone. The Ember Alliance and CWPP Advisory Committee developed a rating scale specifically for the district based on the range of values observed across the community (**Table B.1**). **This relative risk assessment is not intended or suitable for comparing this fire protection district to other areas in Colorado or the United States.**

Table B.1. *Relative risk rating values for the district.*

Hazard category	Max. points possible	Range of values in plan units	High	Higher	Extreme	Most extreme
A. Potential fire behavior	58	10 - 47	≤15	16-35	≥36	
B. Fire suppression challenges	48	0 – 48	0	24	48	
C. Evacuation challenges	72	5 – 57	≤30	31-44	≥45	
D. Home ignition zone hazards	85	39 – 82	≤44	45-59	≥60	
Overall risk	268	59 – 216	≤130	131-165	165-195	≥196

Relative Risk Rating Form

A. Potential Fire Behavior	Points
1. Percent area with very high to extreme fire behavior class[1]	
<40%	0
40-<50%	6
≥50%	12
2. Percent area with >11 feet flame lengths[1]	
<30%	0
30-40%	6
≥40%	12
3. Mean rate of spread[1]	
<5.5 chains/hour	0
5.5-6.5 chains/hour	6
≥6.5 chains/hour	12
4. Average burn probability[1]	
<0.6%	0
0.6-<0.8%	6
≥0.8%	12
5. Lightning and human-caused ignition density[2]	
Lower (<1.0 / mi^2)	0
Medium (1.0 – 1.75 / mi^2)	5
Higher (>1.75 / mi^2)	10
A. Total points possible	**58**

[1]Predictions from COAL under 90-97th percentile fire weather conditions for plan unit and adjacent watersheds.

[2]Based on a kernel density of ignition data from 2000-2024 from National Interagency Fire Center IRWIN and the Fire Program Analysis fire-occurrence database.

B. Fire Suppression Challenges	Points
1. General assessment of water sources (hydrants, cisterns, and/or draft sites), road accessibility for engines, presence of legible and reflective signs, and suppression difficulty index by the CWPP Advisory Committee	
Low to moderate suppression challenges	0
High suppression challenges	24
Very high to extreme suppression challenges	48
B. Total points possible	**48**

C. Evacuation Challenges	Points
1. Number of lanes in each direction	
At least 1 lane on practically all roads	0
At least 1 lane on most roads	5
Less than 1 lane on most roads	10
2. Number of main egress routes	
3 or more	0
Only 2	8
Only 1	15
3. Total evacuation time for all of plan unit[3]	
<30 minutes	0
30-60 minutes	5
60-80 minutes	10
>80 minutes	15
4. Percentage of roadways with non-survivable conditions (>10% probability of flame lengths >8 feet)	
<65%	0
65-<80%	6
≥85%	12
5. Cell service availability[4]	
High LTE signal strength	0
Moderate LTE signal strength	5
None to low LTE signal strength	10
6. Presence of livestock that could require multiple trips to evacuate	
Few properties with livestock	0
Some properties with livestock	5
Many properties with livestock	10
C. Total points possible	**72**

[3]Estimates from ArcCASPER (see evacuation modeling methodology above).

[4]Based on LTE signal strength data for Verizon, AT&T, and T-Mobile from coveragemap.com.

D. Home Ignition Zone Hazards	Points
1. Percent of homes with combustible or non-ignition resistant siding and/or decking[5]	
<25% of homes	0
25-50% of homes	10
>50% of homes	20
2. Percent of homes with wooden fences within 5 feet of the home	
5%	0
5-25%	3
>25%	5
3. Percent of homes with adequate mitigation in home ignition zone 1 & 2	
>90%	0
50-90%	8
25-50%	15
10-25%	20
<10%	25
4. Percent of homes with additional hazards in zones 1 and 2 (e.g., wood piles, propane tanks, flammable lawn furniture, trash, wooden sheds, campers, etc.)	
<10%	0
10-50%	2
>50%	5
5. Percent of homes located mid-slope on slopes >10 degrees	

<5%	0
5-25%	2
>25%	5
6. Percent of homes located on ridgetops	
<5%	0
5-25%	2
>25%	5
7. Number of primary structures exposed to radiant heat and/or short-range embers	
<100	0
100-300	6
>300	12
8. Average number of structures within short-range spotting of other structures (primary and auxiliary structures included)	
<3	0
3-10	4
>10	8
D. Total points possible	**85**

[5]Most homes in the district have class A roofs, so the main factor distinguishing among plan units was combustible siding and decking.

Modeling Specifications

Fire behavior models require information on topography, canopy, and surface fuel loads across the area of interest as well as fire weather conditions. For the 2022 COAL, Pyrologix, LLC mapped fuel conditions across Colorado representative of the 2020 fire season. They organized a fuel calibration workshop in February 2020 with wildland fire professionals to review and improve fuel data available from the 2016 LANDFIRE Remap. They modified fuel characteristics in areas that had experienced recent wildfires and fuel treatments to approximate post-disturbance conditions. Fuel types are highly variable across the district, with grass fuel models dominating lower-elevation areas, valley bottoms, and dry south-facing slopes, and timber understory and timber litter dominating the western portion of the district as well as scattered forestlands throughout the eastern portion of the district (**Figure B.1**).

Pyrologix, LLC developed custom fuel models for high elevation-subalpine vegetation, burnable agriculture, burnable urban areas, and burnable roadsides. Fuel models are a stylized set of fuel bed characteristics used as input for a variety of wildfire modeling applications to predict fire behavior (Scott and Burgan, 2005). They utilized timber litter fuel models for low- and moderate-density developed areas to allow fire to propagate through developed areas under extreme (97th percentile) fire weather conditions. See additional details on development of fuel data for the 2022 COAL in (Napoli et al., 2022a).

Pyrologix, LLC modeled fire behavior in FSim under 50,000-100,000 simulated fire seasons and 216 deterministic weather conditions in WildEST for each of 10 fire occurrence areas across Colorado. Fire occurrence areas were delineated based on historic occurrence of large fires, ecoregions, and local fire staff input. The district falls in the fire occurrence area (FOA) 803, for which historic weather conditions were based on the Cheesman Remote Automated Weather Station and for which Pyrologix, LLC conducted 100,000 simulations. For each day of the 100,000 simulated fire seasons, FSim selects plausible weather scenarios based on historic fire weather between 1979 and 2017. Ignition locations for the simulations are guided by the occurrence of historic ignitions between 1992 and 2018.

Fire behavior predictions from WildEST are weighted averages based on the weather type probability for the weather scenarios—a probability that integrates the relative area burned for that weather scenario and the relative frequency of the weather scenario occurring. Fire behavior conditions were summarized for simulations with an energy release component (ERC) in the 70-80th percentile of historic ERC values, 80-90th percentile, 90-97th percentile, and ≥97th percentile and wind speeds of 5, 10, and 15 miles/hour. For the district's 2025 CWPP, we utilized fire behavior predictions for the 90-97th percentile ERC under 15 miles/hour wind speeds, which represent potential fire behavior under extreme fire weather conditions. See additional details on fire weather conditions and methodology for the 2022 COAL in (Vogler et al., 2022).

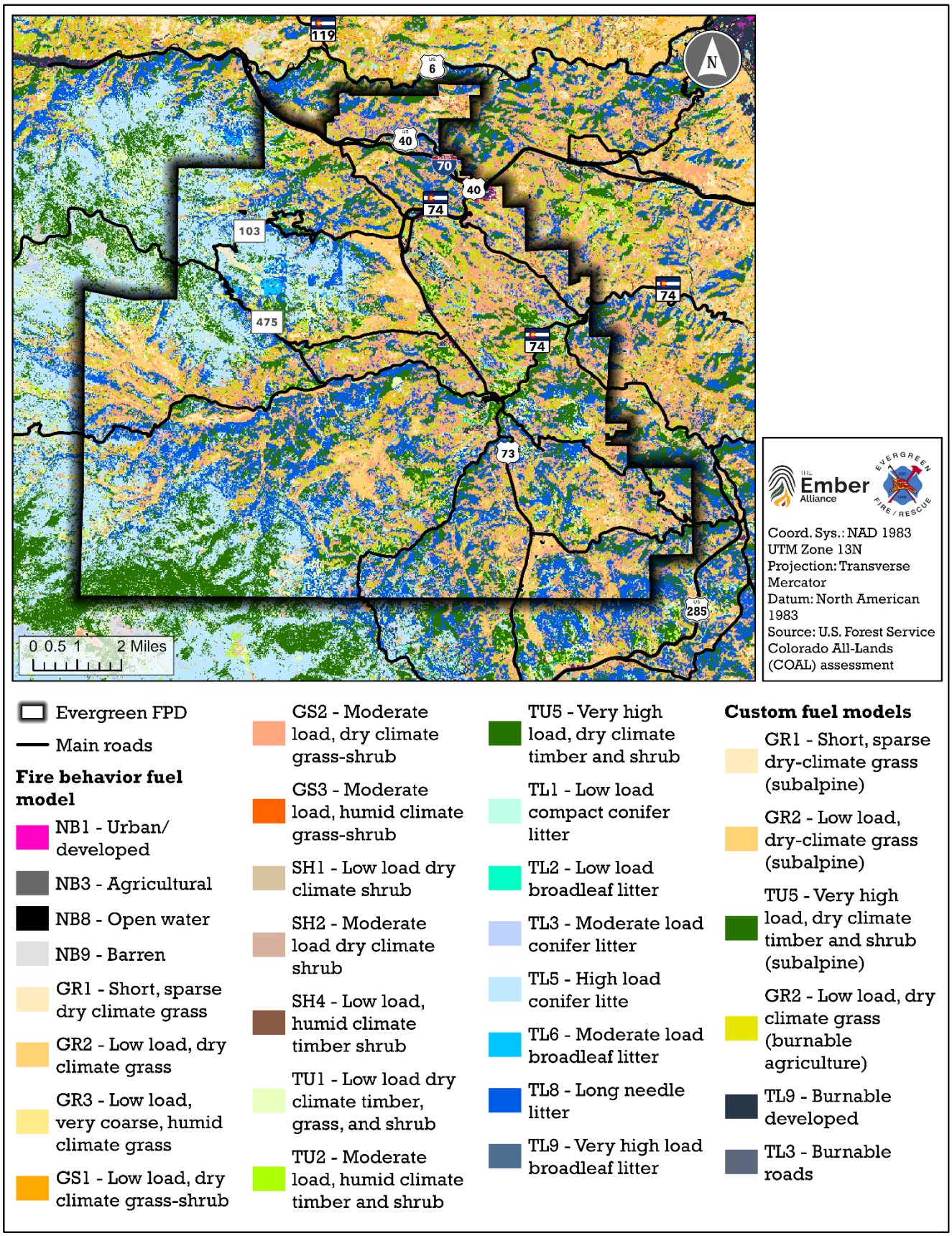


Figure B.1. *Fire behavior fuel models are an important input for modeling potential fire behavior. See (Scott and Burgan, 2005) for a description of each fuel model and (Napoli et al., 2022a) for methods used to map surface fuels for the 2022 COAL.*

Predicted Fire Behavior

Mean Flame Length

Flame length is the distance measured from the average flame tip to the middle of the flaming zone at the base of the fire. Flame length is measured at an angle when the flames are tilted due to effects of wind and slope (see image at right). Flame length is an indicator of fire intensity—the amount of energy released by a fire.

Mean flame length from the 2022 COAL is the weighted average flame length for a head-fire experienced at each location under 90-97th percentile ERC and 15 mile per hour winds. Mean flame length is calculated as the sum-product of the predicted flame lengths for each of the weather scenarios with 90-97th percentile ERC and each scenario's weather type probability (**Figure B.2**).

Probability of Flame Length Exceeding Mechanical Control

The probability of flame length exceeding mechanical control is the probability that flame lengths from head fires exceed 8 feet—the threshold beyond which firefighters can safely engage with a wildfire at the flaming front (**Table B.2**). The 2022 COAL calculated the probability of flame lengths exceeding 8 feet in the district by adding together the weather type probability for each of the weather scenarios for which head-fire flame length exceeded 8 feet (**Figure B.3**). Areas with a higher probability of exceeding mechanical control are likely to experience >8-foot flame lengths under even moderate fire weather conditions, and those with a lower probability are only likely to experience >8-foot flame lengths under extreme fire weather conditions.

Most Likely Fire Type

Each location on the landscape is described by the most likely type of fire behavior it could experience based on all simulated wildfires that reached that location. Fire types for the 2022 COAL are surface fire (no forest canopy present), underburn (surface fire where forest canopy is present), low-grade passive crown fire (0-25% crown fraction burned), mid-grade passive crown fire (>25-60% crown fraction burned), high-grade passive crown fire (>60-90% crown fraction burned), and active crown fire (>90%). WildEST produces a probability of each type of fire occurring at a given location, and The Ember Alliance determined the type of fire with the greatest probability of occurring at each location in the district using output from the 2022 COAL (**Figure B.4**).

Mean Rate of Spread

Mean rate of spread from the 2022 COAL is the weighted average rate of spread for a head-fire experienced at each location under 90th-97th percentile ERC and 15 mile per hour winds. Mean rate of spread is calculated as the sum-product of the predicted flame lengths for each of the weather scenarios with 90-97th percentile ERC and each scenario's weather type probability (**7**). Rates of spread are faster on steep slopes, when wind speeds are greater and aligned with the direction of spread, and in fine, flashy fuels like continuous, dry grass.

Fire Behavior Class

Wildland firefighters pay attention to current and expected fire behavior when making tactical decisions. Fire behavior classes are based on flame length, rate of spread, and crown fire activity and are utilized by firefighters to guide tactical decisions following the Haul Chart (**Table B.2**). The Ember Alliance combined estimates of mean flame length and fire type from the 2022 COAL to produce a map of fire behavior class across the district (**Figure B.6**).

Under hot, dry, and windy weather, 80% percent of the district could experience high to extreme fire behavior, including ember production that ignites additional fires away from the main fire and the movement of high-intensity fire from treetop to treetop. Such fires are extremely challenging if not impossible to control until winds die down and fuel moisture increases. Low or moderate fire behavior are most likely in large grasslands, such as Elk Meadows, in the district.

Table B.2. *The Haul Chart and tactical interpretations. The Haul Chart is a tool used by firefighters for relating fire behavior to tactical decision-making (NWCG, 2019).*

Fire behavior class	Flame length (feet)	Rate of spread (chains/hr)*	Tactical interpretation
Very low, smoldering	<1	0-2	Fire is not spreading and has limited flames. Fire can be attacked at the head or flanks by persons using handtools. Handline will hold the fire.
Low, creeping, spreading	1-4	2-5	Fire can be attacked at the head or flanks by persons using handtools. Handline should hold the fire.
Moderate, running	4-8	5-20	Fires are too intense for direct attack at the head of the fire by persons using handtools. Handline cannot be relied on to hold the fire. Equipment such as dozers, engines, and retardant aircraft may be effective.
High, torching and spotting	8-11	20-50	Fires present serious control problems with torching, crowning, and spotting. Control efforts at the head of the fire are probably ineffective.
Very high, active crown fire	11-25	50-150	Crowning, spotting, and major fire runs are expected. Control efforts at the head of the fire are ineffective.
Extreme and erratic	>25	>150	Extreme intensity, turbulent fire, and chaotic spread. Escape to safety should be considered.

*__Note:__ 1 chain = 66 feet. Chains are commonly used in forestry and fire management as a measure of distance. 1 chain/hour = 1.1 feet/minute.

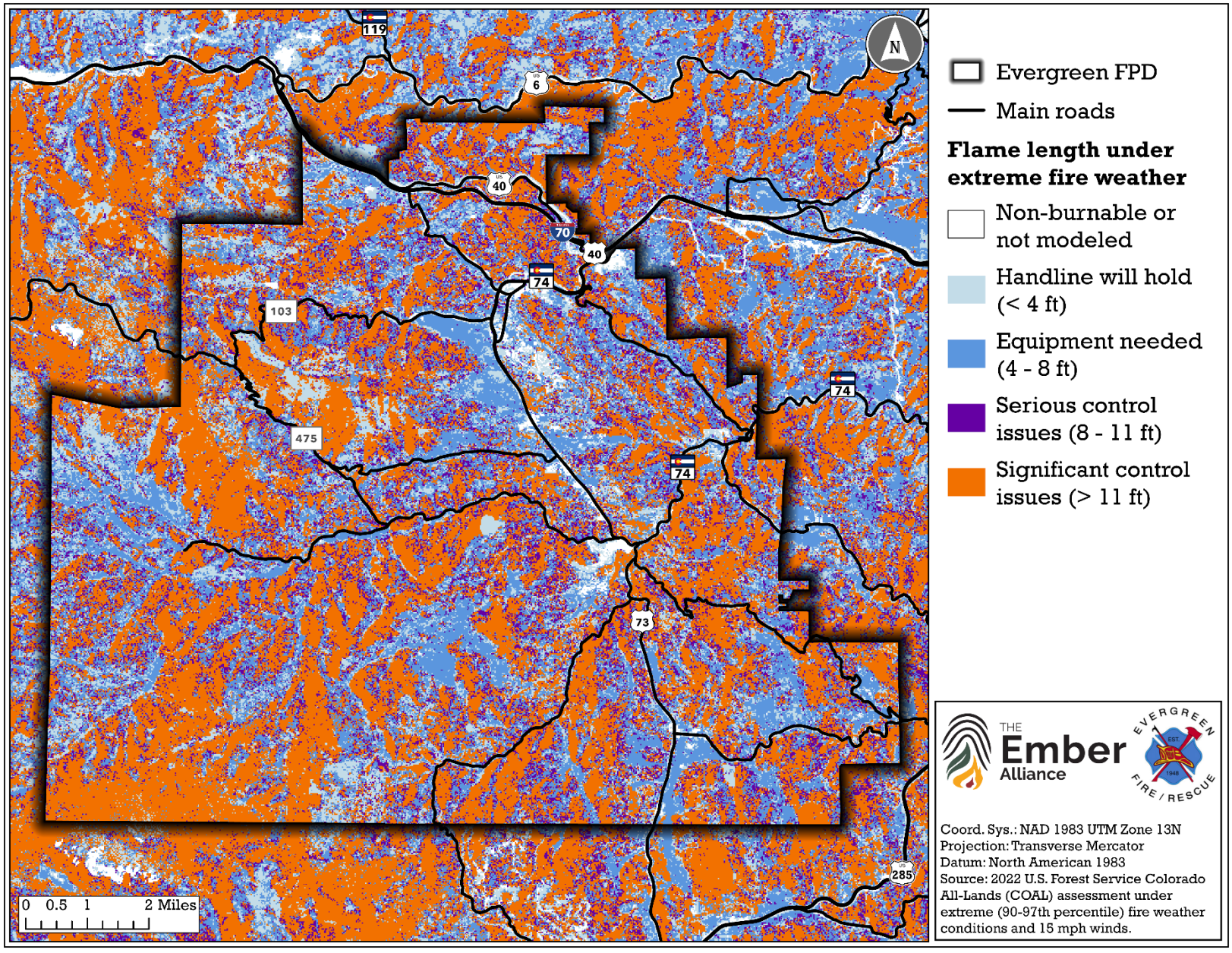


Figure B.2. *Mean flame lengths in the district under extreme fire weather conditions, categorized by the Haul Chart (**Table B.2**). Source: 2022 U.S. Forest Service COAL.*

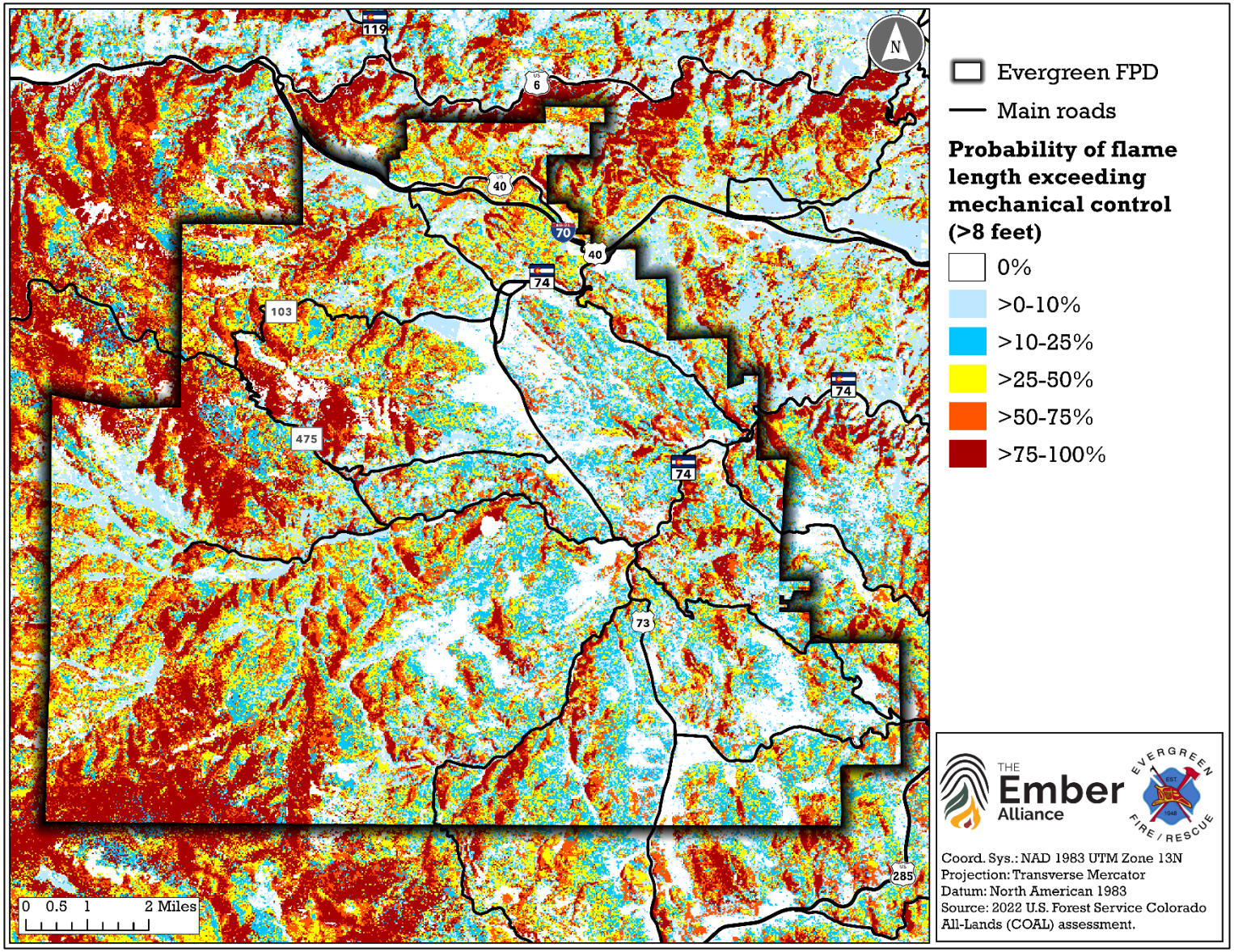


Figure B.3. *Probability of flame length exceeding mechanical control (>8-foot flame lengths) in the district. Areas with a higher probability of exceeding mechanical control are likely to experience >8-foot flame lengths under even moderate fire weather conditions, and those with a lower probability are only likely to experience >8-foot flame lengths under extreme fire weather conditions. Firefighters can no longer safely engage with a wildfire at the flaming front when flame lengths exceed 8 feet (**Table B.2**). Source: 2022 U.S. Forest Service COAL.*

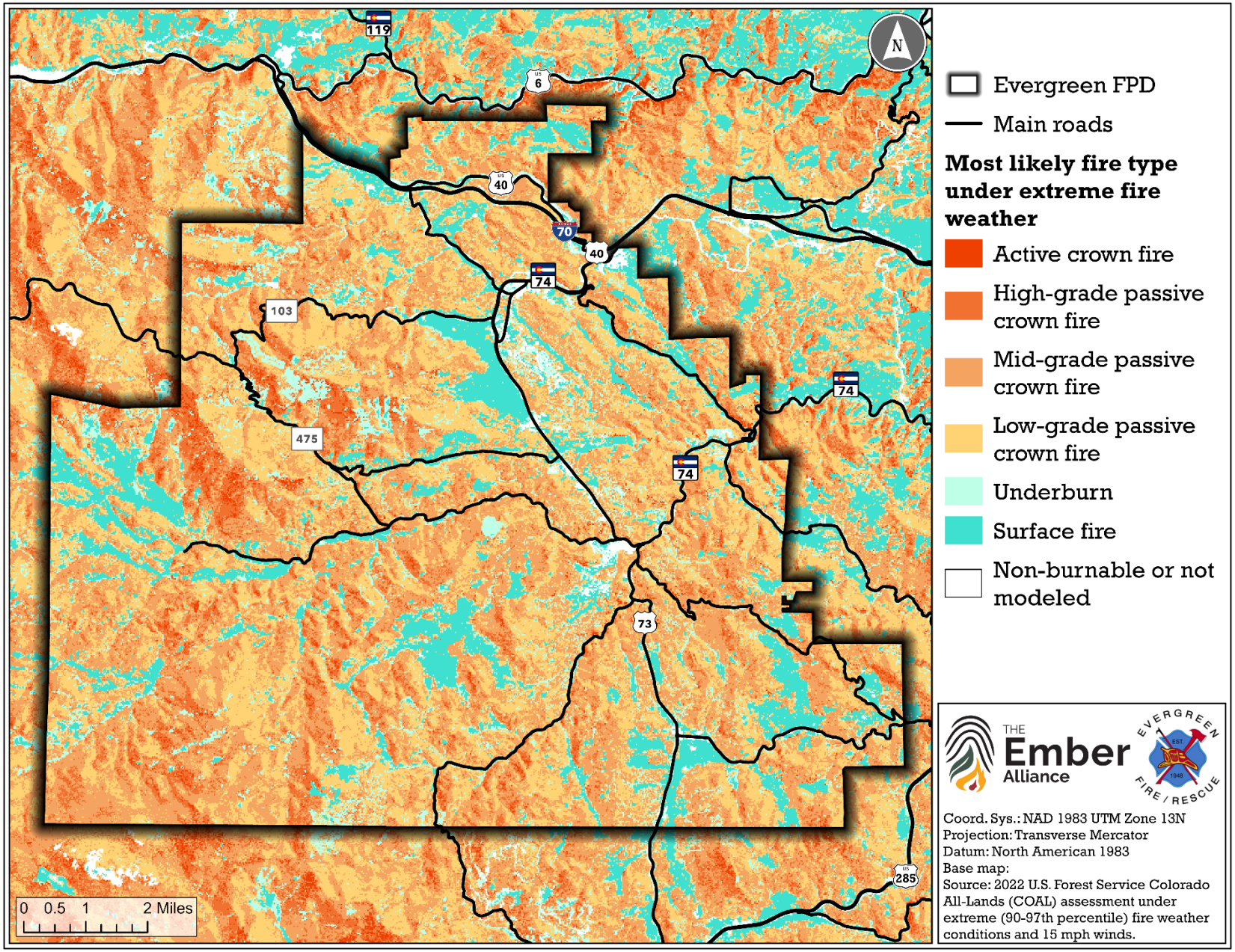


Figure B.4. *Most likely fire type in the district under extreme fire weather conditions. Source: 2022 U.S. Forest Service COAL.*

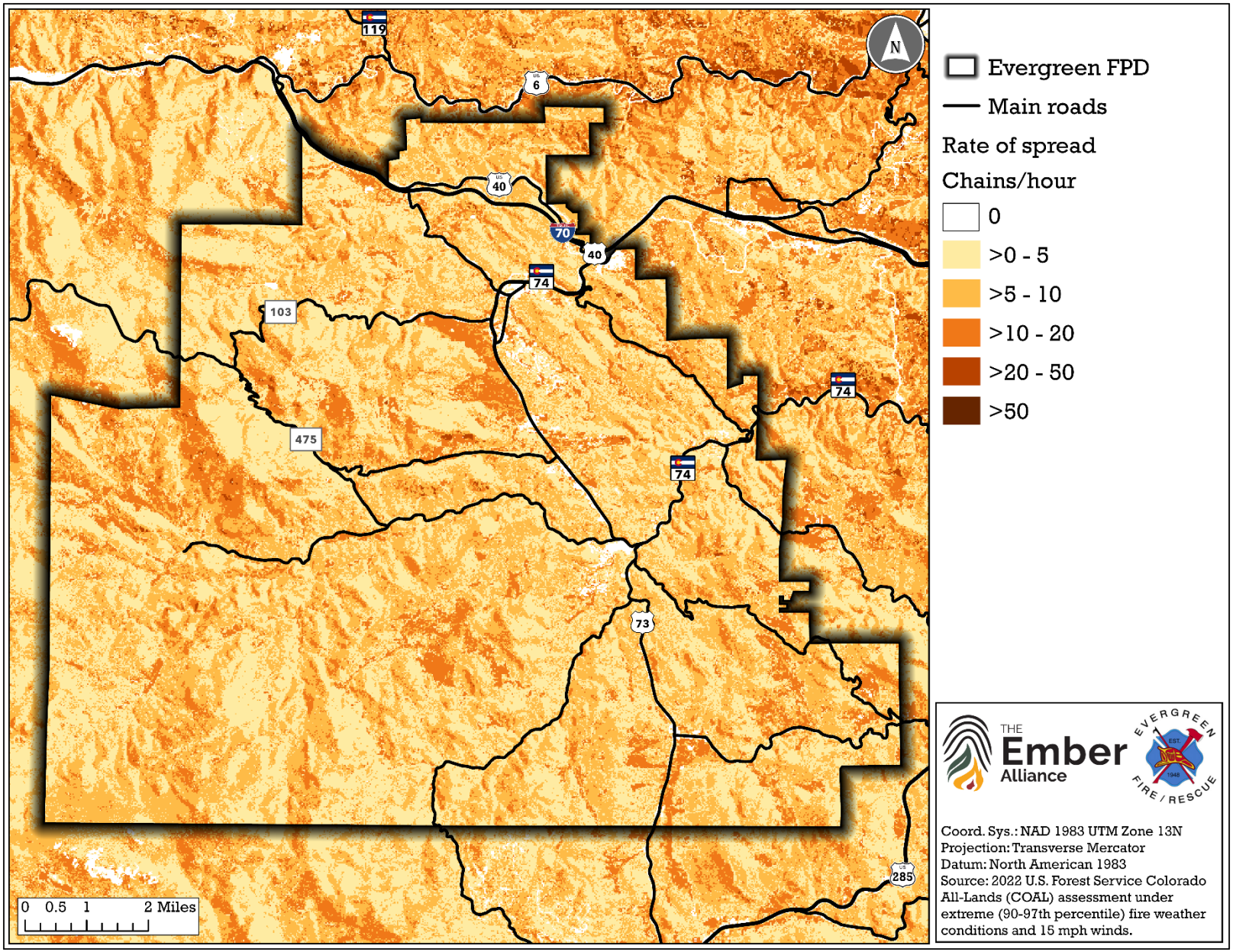


Figure B.5. *Mean rate of spread in the district under extreme fire weather conditions. Chains are commonly used in forestry and fire management as a measure of distance. 1 chain = 66 feet. 1 chain/hour = 1.1 feet/minute. Source: 2022 U.S. Forest Service COAL.*

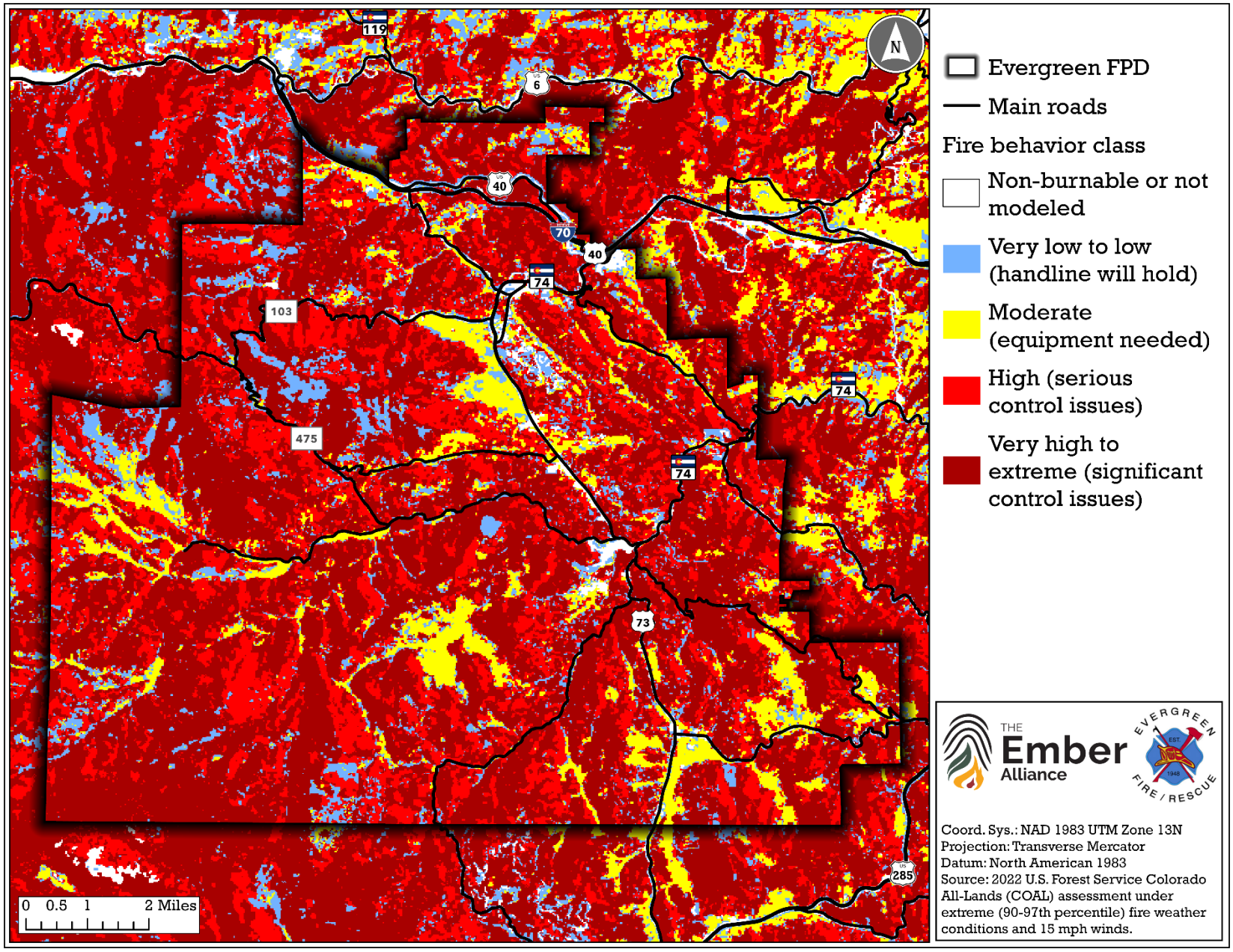


Figure B.6. *Under extreme fire weather conditions—conditions typical of a summer day in the district—80% percent of the district could experience high to extreme fire behavior. Source: 2022 U.S. Forest Service Colorado All-Lands (COAL) assessment.*

Burn Probability

Burn probability is the annual likelihood of wildfire at a given location. Fuels, topography, and wind affect burn probability by dictating how fire spreads across the landscape. Ignition locations for the 2022 COAL simulations using FSim were based on historic fire occurrence from 1992-2018. Burn probability is calculated by dividing the number of fire perimeters that burned each location by the total number of simulated fires in the fire occurrence area.

Most of the district falls into the high burn probability category relative to the state of Colorado (**Figure B.7**). High burn probabilities occur in much of the district due to the potential for rapid rates of fire spread across expansive grasslands and in areas with steep, complex terrain. Lower burn probabilities are predicted east of major roads, like Highway 74, due to the potential for major roads to serve as fuel breaks under moderate fire weather conditions. Due to assumptions made for the 2022 COAL assessment, burn probabilities are lower in urban areas as well—wildfires were only allowed to spread into urban areas under 97-100th percentile fire weather conditions.

Expected Net Value Change

Expected net value change (eNVC) is a quantitative assessment of wildfire risk to highly valued resources and assets (HVRAs) at each location of a landscape based on potential fire intensity, likelihood of wildfire, and the exposure, relative importance, and sensitivity of values at risk to different types of fire behavior. Expected net value change is calculated by multiplying (1) flame length probability for each flame length class multiplied by (2) the potential impact of each flame length class on each HVRA (positive or negative impact) by (3) the relative importance of each HVRA and by the burn probability at each location. Expected net value change for each flame length class and each HVRA are then added together.

Expected net value change is positive where the overall impact of wildfire is expected to benefit HVRAs present at a location, and expected net value change is negative where the overall impact is expected to degrade HVRAs. The impact of wildfire might be negative to some HVRAs co-located in area where wildfire benefits other HVRAs, and if the potential positive benefits are greater than the potential negative impacts, and if the relative importance of the HVRA that could benefit from wildfire is greater than the relative importance of the HVRA that could be degraded by wildfire, then the expected net value change will be positive. Areas where HVRAs are more sensitive to wildfire (i.e., the HVRA can experience negative impacts even when expected flame lengths are shorter), areas where the likelihood of longer flame lengths are greater, and areas with higher burn probabilities are more likely to have a negative expected net value change.

Various interagency representatives and additional fire and resource staff participated in a virtual fire effects workshop in July 2021 to define the sensitivity of each HVRA to different types of fire behavior (also known as response functions). U.S. Forest Service line officers, area fire management officers, and interagency representatives reviewed and adjusted relative importance values proposed by Pyrologix, LLC. Categories of HVRAs for the 2022 COAL were people and property (53% relative importance), infrastructure (32%), drinking water (10%), and ecosystem function (5%). A list of sub-HVRAs and maps of and quantitative response functions for each sub-HVRA are provided in (Napoli et al., 2022b).

According to the 2022 COAL, wildfire and/or broadcast prescribed burning could benefit portions of the district by restoring ecological conditions and reducing fuel loads (**Figure B.8**). Beneficial fire (positive expective net value change) is more likely in areas without homes, where expected fire behavior is low to moderate, and where ecosystems are more likely to benefit from wildfire. Ponderosa pine ecosystems are very likely to benefit from prescribed burns with lower-severity fire behavior but could experience negative impacts from wildfires with higher-severity conditions. Lodgepole pine ecosystems are likely to benefit from higher-severity fire behavior due to their adaptation to stand-replacing wildfire with serotinous cones.

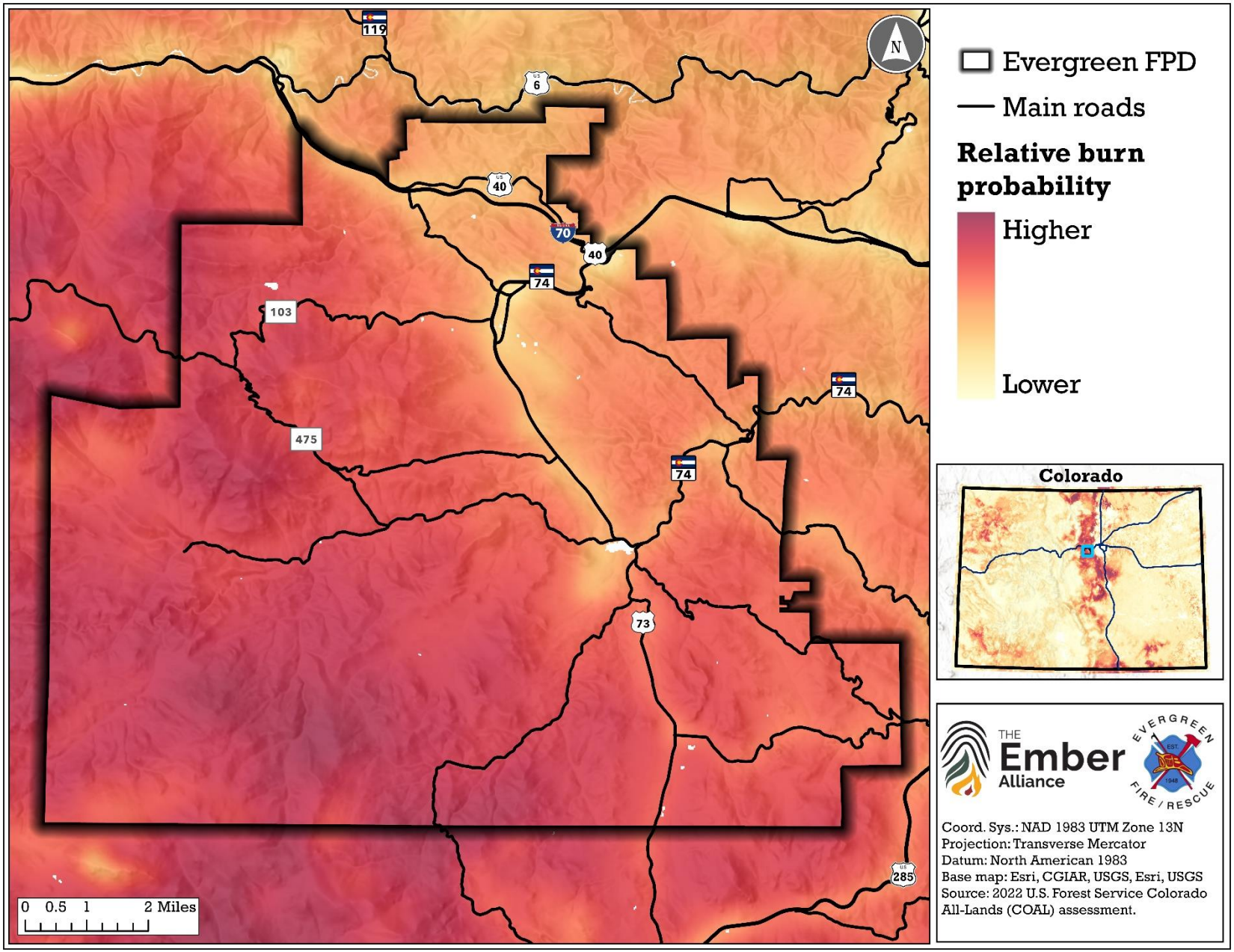


Figure B.7. *Most of the district falls into the high burn probability category relative to the state of Colorado. Source: 2022 U.S. Forest Service COAL.*

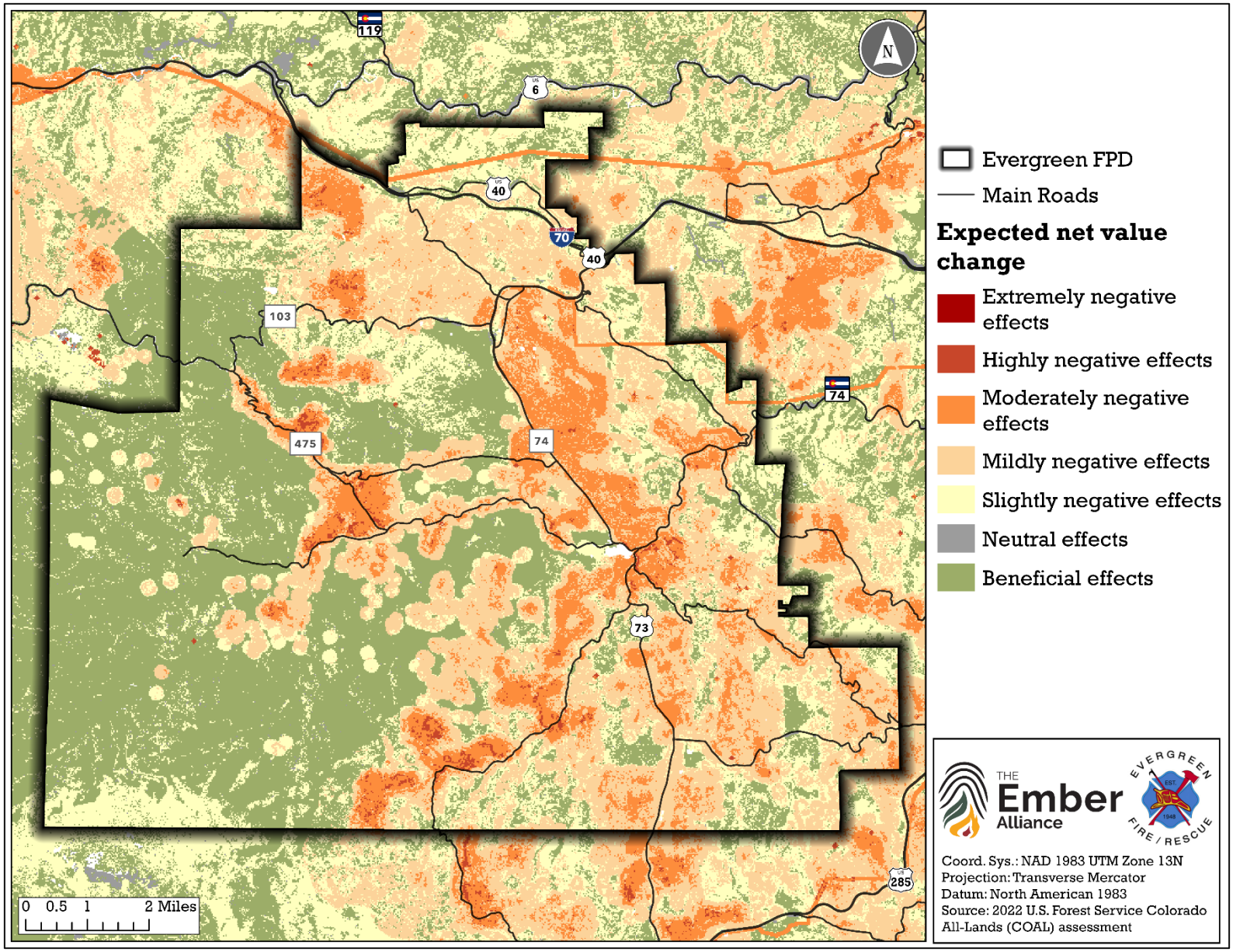


Figure B.8. *Based on an analysis of expected net value change, wildfire and/or broadcast prescribed burning could benefit portions of the district by restoring ecological conditions and reducing fuel loads. Source: 2022 U.S. Forest Service COAL.*

Predicted Radiant Heat and Ember Cast Exposure

The Ember Alliance assessed the risk that radiant heat and long-range ember cast pose to structures2. Radiant heat from burning vegetation can ignite nearby homes, and embers emitted from burning vegetation or other homes can travel long distances and ignite vegetation and homes away from the main fire. This analysis is useful for comparing relative exposure across the district and not for evaluating absolute risk to individual homes. Fire behavior outputs from the 2022 COAL cannot account for defensible space, the fire resistance of materials used in home construction, and other fine-scale variation in fuel loads that contribute to the ignition potential of individual homes.

Ember production and transport and their ability to ignite recipient fuels are guided by complex processes structure (Caton et al., 2016), so The Ember Alliance utilized research by Beverly et al., (2010) and Caggiano et al., (2020) for simplified predictions of exposure radiant heating, and long-range ember cast. Exposure is based on distance from long flame lengths and torching trees assuming:

Embers can ignite homes even when the flaming front of a wildfire is far away. See **Section 3.a. Mitigate the Home Ignition Zone** for tangible and relatively simple steps you can take to harden your home against embers. Mitigation practices, such as removing pine needles from gutters and installing covers over vents, can make ignition less likely and make it easier for firefighters to defend your property.

- Radiant heat can ignite homes when extreme fire behavior (flame lengths > 8 feet) occurs within 33 yards (30 meters) of structures, following the approach of Beverly et al., (2010). Areas with mean flame lengths of >8 feet (**.5**) were included in these predictions. Research summarized by (Abo El Ezz et al., 2022) suggest that 75% of structures are destroyed when exposed to >8-foot flame lengths during actual wildfires.
- Short-range embers can reach homes within about 110 yards (100 meters) of active crown fires, following the approach of Beverly et al., (2010).
- Long-range embers can reach homes within 930 yards (850 meters) of mid-grade passive crown fire, high-grade passive crown fire, or active crown fires (**Figure B.4**). (Caggiano et al., 2020) found that a vast majority (95%) of home losses during WUI fires occurred within 100 meters of wildland vegetation, but homes were lost as far as 850 meters from the flaming front. The density of long-range embers received by a location will be less than the density of short-range embers.

The risk to homes from short-range embers is greater than from long-range embers. Although embers can travel miles ahead of a wildfire, the number of embers reaching an area decreases exponentially with distance traveled, and the likelihood of structure ignition increases with the number of embers landing on the structure (Caton et al., 2016).

On days with extreme fire weather conditions, 71% of homes in the district could experience damaging radiant heat from burning vegetation, and 100% of homes could be exposed to embers from burning vegetation, regardless of vegetation in the immediate vicinity of the home (**Figure B.9**).

Homes serve as an additional source of fuel that could produce high-intensity flames, emit embers, and initiate home-to-home ignitions. We located areas with an elevated risk of home-to-home exposure in two ways:

- Identify structures that are within 100 feet of other structures (from structure edge to structure edge) and in areas with parcels that tend to be <1 acre (**Figure B.9**). (Maranghides et al., 2022) classifies these conditions as medium-density and high-density WUI with a moderate to high potential exposure to fire for burning neighboring structures.
- Determine the number of structures with overlapping HIZs (0-100 feet from structures) (**Figure B.10**). It is imperative that homeowners work with their neighbors to reduce shared risk when HIZs 2 and 3 overlap with adjacent properties. Structures with overlapping HIZs have a greater risk for home-to-home fire spread, especially if homes are not mitigated or hardened (Syphard et al., 2012).

Areas with an elevated risk of home-to-home ignitions include portions of Pine Valley, Echo Hills, Bergen Park, Stagecoach, Hiwan Hills, downtown Evergreen, Rosedale, Brookvale, Upper Bear Creek, Brook Forest, Marshdale,

and downtown Kittredge. Nearly all structures in the district (93%) share a HIZ with at least one neighboring structure, and 13% share a HIZ with 11 or more structures.

All structures in the district should be built and upgraded with ignition-resistant materials and need mitigated HIZs to reduce the ability of embers to penetrate the building. This includes secondary structures (e.g., sheds, garages, barns) to reduce the likelihood of ignition and fire spread to primary structures (Maranghides et al., 2022). This CWPP outlines home hardening practices that residents and business owners can complete to reduce the risk of embers penetrating their homes.

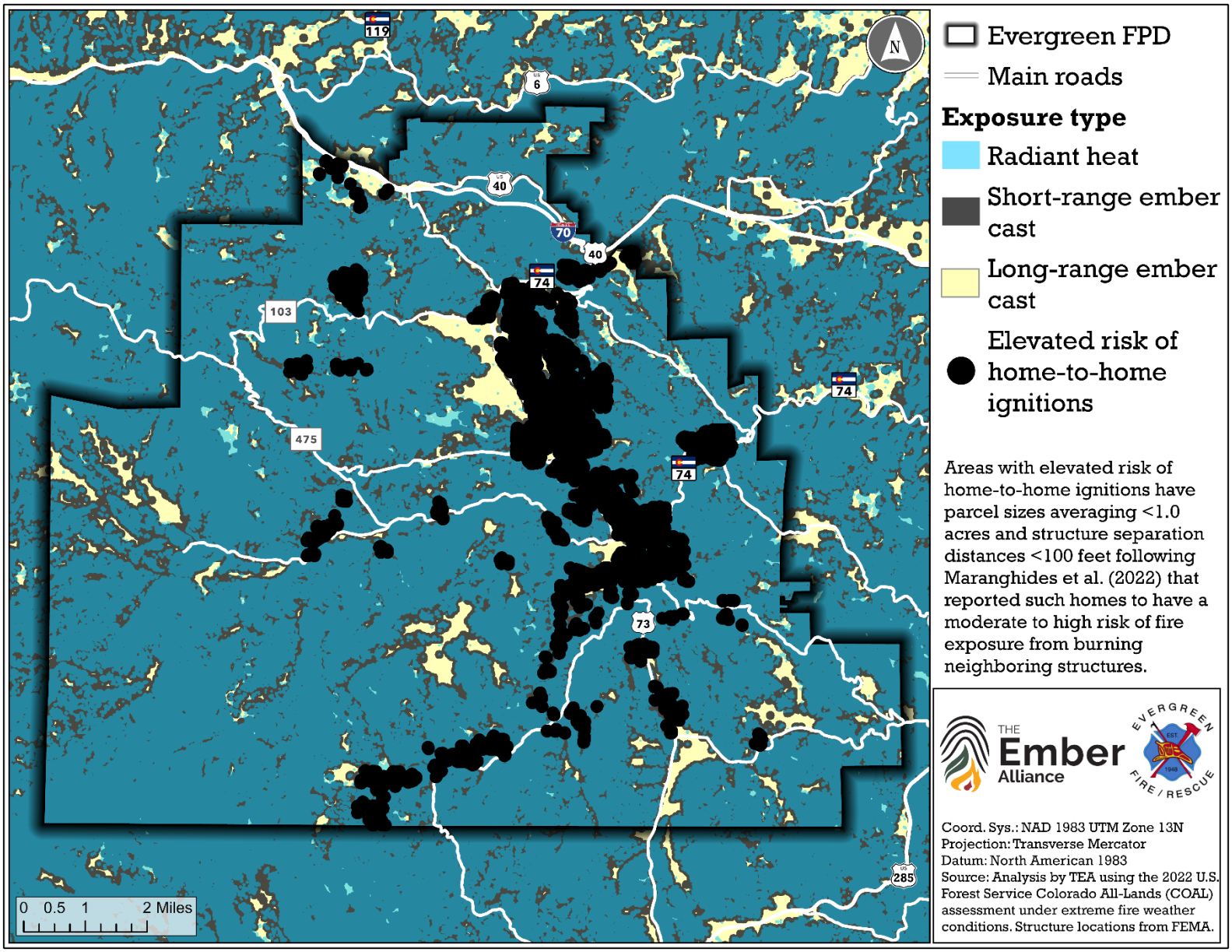


Figure B.9. *Predicted exposure to radiant heat and short- and long-range ember cast, and areas with an elevated risk of home-to-home ignitions in the district. Source: Analysis by The Ember Alliance using data from the 2022 U.S. Forest Service COAL and structure locations from FEMA.*

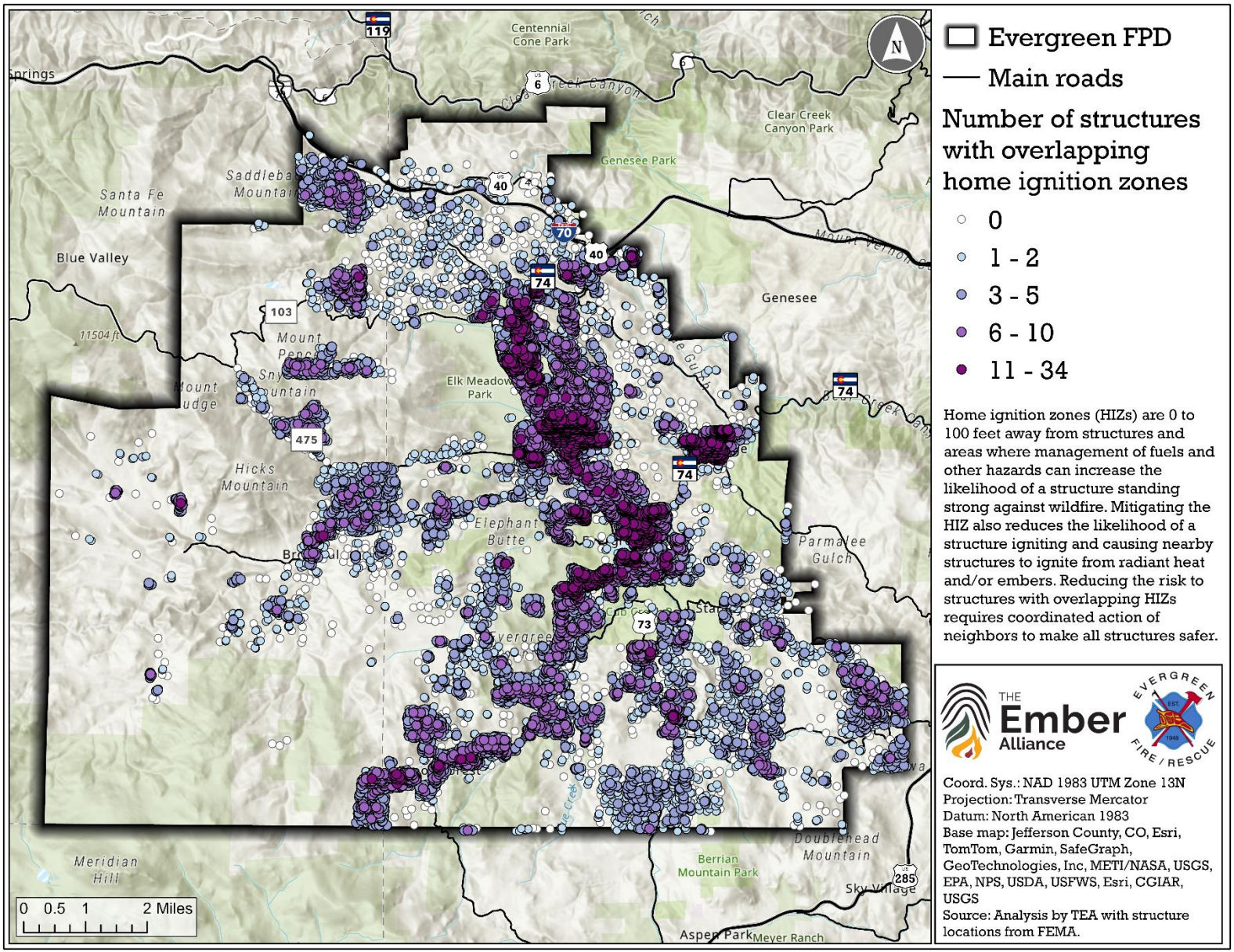


Figure B.10. *93% of structures in the district have overlapping home ignition zones (HIZs; 0-100 feet from structures), and some structures share overlapping HIZ with up to 34 other structures. Structures with overlapping HIZs are at greater risk of structure-to-structure ignitions from radiant heat and ember cast (Syphard et al., 2012). Analysis by The Ember Alliance using structure data from Microsoft building footprints (circa 2020).*

Exposure of Highly Valued Resources and Assets

The Ember Alliance identified highly valued resources and assets (HVRAs) in areas that could experience damaging radiant heat and/or ember cast to inform project prioritization for the CWPP (**Table B.3**; **Figure B.11**). Burn probability relative to the rest of the district was also assessed to help guide prioritization—areas with a greater likelihood of burning might be higher priority for immediate action.

Based on this analysis and expert opinion, one of the first-priority projects for the district's 2025 CWPP is mitigation around communication towers (see **Section 4.c. Priority Stand-Scale Project Areas**). All HVRAs in the district could be exposed to radiant heat and/or ember cast. HVRAs in areas with lower relative burn probabilities occur in Floyd Hill, Bergen Park, El Rancho, and downtown Kittredge.

Keep in mind that fire behavior analyses from the 2022 COAL are at the scale of 0.2 acres (30 x 30 meters), and input fuel data is developed via extrapolation of aerial imagery and satellite data. **Site-level assessments are vital to verify exposure of HVRAs and develop specific plans for mitigation.**

Table B.3. *Highly valued resources and assets (HVRAs) with potential exposure to radiant heat and/or embers. Burn probability is normalized and relativized to compare burn probability across the district.* ***The colors in the "Potential exposure" column correspond to the key in Figure B.11****. Source: Analysis by The Ember Alliance using data from the 2022 U.S. Forest Service COAL.*

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
Vulnerable populations				
School	King - Murphy Elementary School	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Bear Creek West
School	Mount Blue Sky Outdoor Laboratory	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Watershed West
Childcare center	Evergreen Academy (pre-school)	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
Childcare center	Montessori School of Evergreen	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Central Evergreen
School	Montessori School of Evergreen	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Herzman / Marshdale
Childcare center	Wulf Recreation Center	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
School	Clear Creek Middle/High Combined School	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Floyd Hill
Childcare center	Marshdale Elementary School	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	North Turkey Creek
School	Wilmot Elementary School	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
Assisted living / adult care	Augustana Elk Run Assisted Living	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
Childcare center	Bearly Tawl	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Floyd Hill
School	Bergen Elementary School	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Childcare center	Buchanan Park Recreation Center	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
School	Evergreen Country Day School	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kerr Gulch
Assisted living / adult care	Life Care Center of Evergreen	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
Assisted living / adult care	Seven Dimensions Behavioral Health, LLC	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kerr Gulch
School	Vertical Skills Academy	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Childcare center	Episcopal Day School of Evergreen	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Childcare center	Evergreen Academy	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
School	Evergreen High School	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
School	Marshdale Elementary School	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	North Turkey Creek
School	Evergreen Middle School	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Medical	Jefferson Center for Mental Health	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
School	Montessori School of Evergreen	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
Assisted living / adult care	Mt Evans Home Health Care & Hospice	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
School	Rocky Mountain Academy of Evergreen	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
Childcare center	The Great Escape Preschool	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Stagecoach / Hiwan Hills
Childcare center	The Learning Center Preschool of Evergreen	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
Childcare center	Avid4 Adventure / Mt Evans	High density of embers from burning vegetation	Highest (75-100%)	Watershed West

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
Safety and security				
Communication tower	Bergen Peak	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Central Evergreen
Communication tower		Radiant heat and high density of embers from burning vegetation	Highest (75-100%)	Herzman / Marshdale
Communication tower	Bear Mountain	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Bear Mountain
Fire station	Evergreen Fire Rescue Station 1	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
Law enforcement	Jefferson County Sheriff's Office Mountain Precinct	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Sewage Treatment	West Jefferson County Metro	Radiant heat and high density of embers from burning vegetation	High (50-<75%)	Bergen Park
Road & Bridge	Jefferson County Road & Bridge Shop	Radiant heat and high density of embers from burning vegetation	Moderate (25-<50%)	Stagecoach/Hiwan Hills
Communication tower	Elmgreen Park	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Floyd Hill
Fire station	Evergreen Fire Rescue Station 2	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Fire station	Evergreen Fire Rescue Station 5	High density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Bear Creek West
Fire station	Evergreen Fire Rescue Station 8	High density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Brook Forest
Fire station	Evergreen Fire Rescue Station 3	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Herzman / Marshdale
Fire station	Evergreen Fire Rescue Station 6	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kittredge
Fire station	Evergreen Fire Rescue Station 7	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Fillius Park
Communication tower	Nob Hill	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kerr Gulch
Fire station	Evergreen Fire Rescue Station 4	High density of embers from burning vegetation	High (50-<75%)	Herzman / Marshdale
Substation		High density of embers from burning vegetation	Moderate (25-<50%)	Fillius Park
Recreation				
Trailhead	Maxwell Falls Lower Trailhead	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Brook Forest
Trailhead	Cub Creek Trailhead	High density of embers from burning vegetation	Highest	Brook Forest

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
			(75-100%)	
Other community assets				
Historic / cultural site	Brook Forest Inn Complex	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Brook Forest
Historic / cultural site	Dodge Ranch Headquarter - Jeffco Outdoor Lab	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Watershed West
Historic / cultural site	Evans/Elbert Ranch Complex	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Watershed West
Historic / cultural site	Greystone	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Bear Creek East
Historic / cultural site	Stransky Ranch	Radiant heat and high density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Brook Forest
Historic / cultural site	Conference Meeting House (Center Stage)	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
Historic / cultural site	Dedisse - Historic CCC Built Huts	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Central Evergreen
Historic / cultural site	Ebenezer in the Pines	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
Historic / cultural site	Evergreen Conference Lower Complex	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Cemetery	Evergreen Memorial Park Cemetery	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Danks Drive
Historic / cultural site	Forest Heights Lodge	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Highland Haven - Dailey Cabin	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Hiwan Homestead Museum Complex	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
Historic / cultural site	Humphrey Museum – Soda Creek	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Fillius Park
Historic / cultural site	Ice House	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Kittredge
Historic / cultural site	Pearl Jarvis Home - Old Senior Resource Center	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Herzman / Marshdale
Historic / cultural site	Rosedale	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Bear Creek East
Historic / cultural site	Williams House	Radiant heat and high density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
Historic / cultural site	Captain's Rock Ranch	Radiant heat and high density of embers from burning vegetation	Highest (75-100%)	Watershed West
Historic / cultural site	USFS Witter Gulch Ranger Station	Radiant heat and high density of embers from burning vegetation	Highest (75-100%)	Bear Creek West
Historic / cultural site	Alderfer Ranch Complex	Low to moderate density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Buffalo Creek East
Historic / cultural site	Broce Pony Ranch	Low to moderate density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Buffalo Creek West
Historic / cultural site	Indian Creek Park Complex	Low to moderate density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Watershed West
Historic / cultural site	Original Buffalo Park School - Wilmot Elementary	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
Historic / cultural site	Wilmot Ranch House	Low to moderate density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
Historic / cultural site	Evergreen Center for the Arts	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Historic / cultural site	Evergreen Lake House	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bear Creek East
Historic / cultural site	Evergreen Lake Warming Hut	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bear Creek East
Post office	Evergreen Post Office	Low to moderate density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Central Evergreen
Historic / cultural site	The Bagery Building	Low to moderate density of embers from burning vegetation and/or nearby structures	Low (<25%)	Bergen Park
Historic / cultural site	Barn in Elk Meadow	Low to moderate density of embers from burning vegetation	High (50-<75%)	Central Evergreen
Historic / cultural site	CPW Headquarters at Mt. Evans Elk Management Area	High density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Watershed West
Historic / cultural site	Singing River Ranch Complex	High density of embers from burning vegetation and/or nearby structures	Highest (75-100%)	Bear Creek West
Cemetery	All Souls Grove Columbarium	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Bancroft Cabin – Nature Center	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Bear Creek Cemetery	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Central Evergreen
Historic / cultural site	Bucannon Show Barn – Mt. Home	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills

HVRA category / sub-category	Name / location	Potential exposure	Normalized relative burn probability	Plan Unit
Historic / cultural site	Hart House (Lariat Lodge)	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Stagecoach / Hiwan Hills
Historic / cultural site	Lewis Ranch	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Bear Mountain
Historic / cultural site	Listen Lodge (Catus Jacks)	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Bear Creek East
Historic / cultural site	Marshdale Lodge (Bistro)	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Herzman / Marshdale
Historic / cultural site	O'Fallon - Historic CCC Built Huts	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Kittredge
Historic / cultural site	Old Evergreen School	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Buffalo Creek East
Historic / cultural site	Saint Marks	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Saint Raphael's	High density of embers from burning vegetation and/or nearby structures	High (50-<75%)	Little Cub Creek
Historic / cultural site	Bancroft/Johnson Barn	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Historic / cultural site	Bancroft/Johnson Outbuildings	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Historic / cultural site	Bergen Home	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Historic / cultural site	Fahnestock Buildings	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Bergen Park
Historic / cultural site	Fillius - Historic CCC Built Huts	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Fillius Park
Post office	Kittredge Post Office	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kittredge
Historic / cultural site	Old Kittridge School	High density of embers from burning vegetation and/or nearby structures	Moderate (25-<50%)	Kittredge
Historic / cultural site	Brookvale School	High density of embers from burning vegetation	Highest (75-100%)	Watershed West
Historic / cultural site	Historic horse barn and cabin	High density of embers from burning vegetation	Highest (75-100%)	Watershed West
Historic / cultural site	Devlin/Metcalf (Margret Davis home) Cabin	High density of embers from burning vegetation	Highest (75-100%)	Watershed West

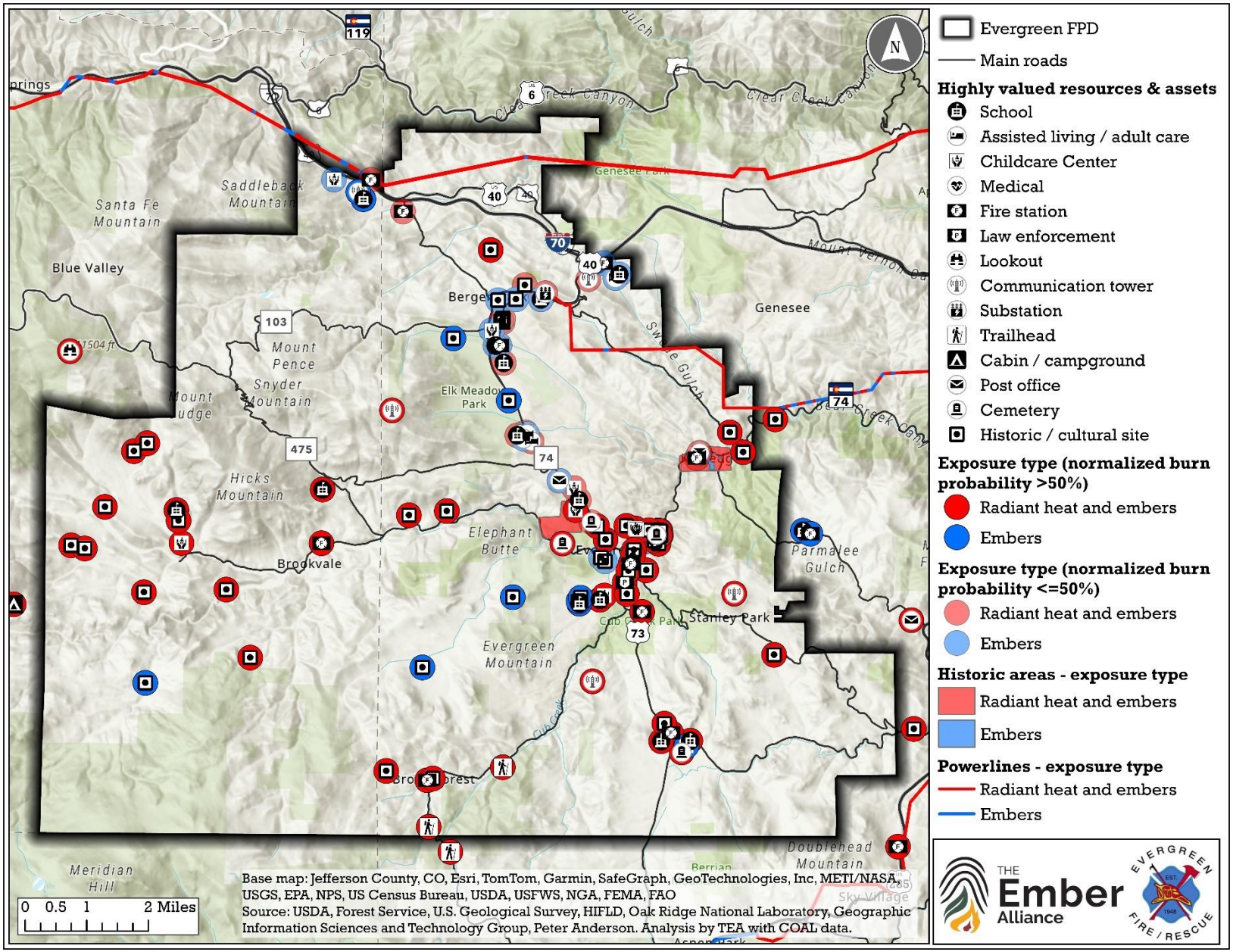


Figure B.11. *Predicted exposure of highly valued resources and assets (HVRAs) in and around the district to radiant heat and/or ember cast. Source: Analysis by The Ember Alliance using data from the 2022 U.S. Forest Service COAL. See* ***Figure 2.a.1*** *for source credits for locations of HVRAs.*

Roadway Survivability

The Ember Alliance utilized fire behavior predictions to identify road segments that could experience non-survivable conditions during a wildfire (**Figure B.12**). "Non-survivable roadways" were defined as portions of roads adjacent to areas with flame lengths greater than 8 feet. Drivers stopped or trapped on potentially non-survivable roadways could have a lower chance of survival due to radiant heat emitted from fires of this intensity. This assumption is based on the Haul Chart, which is a standard tool used by firefighters to relate flame lengths to tactical decisions (**Table B.2**). Direct attack of a flaming front is no longer feasible once flame lengths exceed about 8 feet due to the intensity of heat output (NWCG, 2019). Flames greater than 8 feet could also make roads impassable and cut residents off from egress routes. Non-survivable conditions are more common along roads lined by thick forests with abundant ladder fuels, such as trees with low limbs and saplings and tall shrubs beneath overstory trees.

The probability of exceeding mechanical control (8-foot flame lengths) from the 2022 COAL (**Figure B.3**) was used to identify roadways with a higher chance of non-survivable conditions. The average probability of flame lengths >8 feet was determined in 90 m x 90 m areas along roadways and reclassified into four bins (0 to 10%, >10 to 25%, >25 to 50%, >50 to 100%). Small segments of roads (<100 m long) were combined with the longest adjacent segment and additional quality assurance/quality control was conducted on small segments of road with probabilities inconsistent with neighboring segments. Road segments with ≤10% probability of flame length exceeding 8 feet were considered survivable. Roadways with a higher probability of non-survivable conditions are more likely to experience >8-foot flame lengths under even moderate fire weather conditions, and those with a lower probability are only likely to experience >8-foot flame lengths under extreme fire weather conditions.

Under extreme fire weather conditions, 78% of roads in the district could experience potentially non-survivable conditions during wildfires (**Figure B.12**). Some non-survivable road segments across the district occur in areas with potentially high congestion. These areas are a high priority for roadside fuel mitigation to create safer conditions for residents, visitors, fire fighters, and other first responders. See priority roadside project areas for the 2025 CWPP in **Section 4.b. Priority Roadside Fuel Treatments.**

Mitigation actions along sections of road with high risk for non-survivable conditions during a wildfire can increase the chances of survival for residents stranded in their vehicles during a wildfire and decrease the chance that roadways become impassable due to flames. Evacuation preparedness is paramount for all residents of Asotin County.

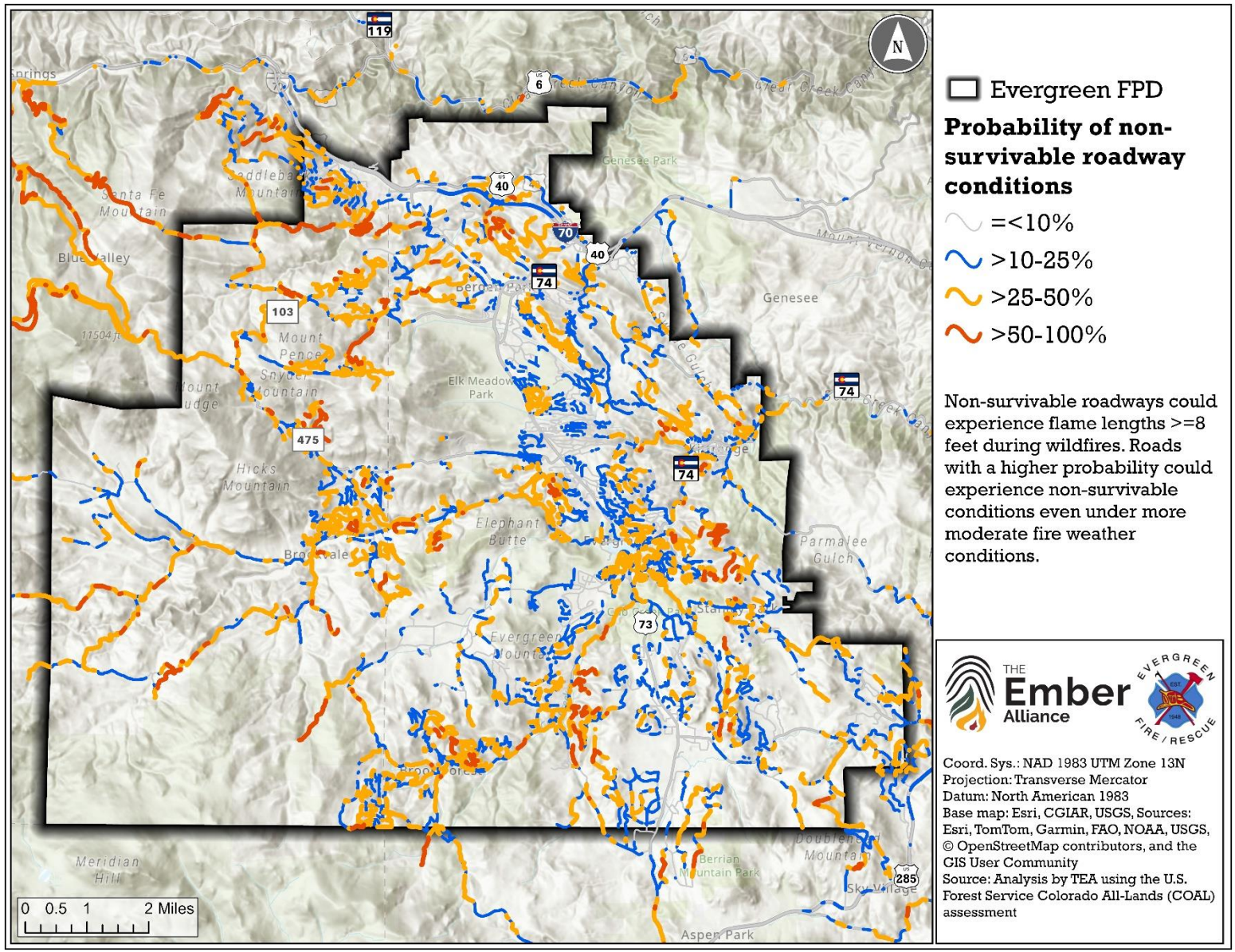


Figure B.12. *Under extreme fire weather conditions, 78% of roads in the district could experience potentially non-survivable conditions during wildfires (defined as >10% probability of flame lengths over 8 feet). Roadways with a higher probability of non-survivable conditions are more likely to experience >8-foot flame lengths under even moderate fire weather conditions, and those with a lower probability are only likely to experience >8-foot flame lengths under extreme fire weather conditions. Source: Analysis by The Ember Alliance using the U.S. Forest Service Colorado All Lands (COAL) dataset.*

Evacuation Modeling

Evacuation can weigh heavily on the minds of residents in the district. The death of 29 people in Los Angeles, California during the 2025 Palisades and Eaton Fires underscores the importance of evacuation preparedness and fuel mitigation along evacuation routes. Of those who tragically perished in these fires, some did not receive evacuation alerts, others could not leave their home due to limitations from animals or family members, and many were simply overwhelmed by the 'perfect storm' of extreme fire weather conditions.

Modeling relative evacuation times and congestion were important for the updated CWPP to improve upon modeling done in 2020 and to guide prioritization of roadside treatments and targeted evacuation education. Dozens of evacuation models are available, all with varying complexities, purposes, assumptions, and limitations (Intini et al., 2019; Ronchi et al., 2019). Modeling hypothetical evacuations is extremely challenging—there are hundreds of possible evacuation scenarios in terms of the direction of wildfire spread, the timing of evacuation orders, the behavior of individuals during an evacuation, potential confusion due to misinformation, potential for impaired visibility due to smoke, potential for lane closures to accommodate emergency traffic, potential for accidents, etc. The assumptions and uncertainties that are layered upon each other when conducting fire behavior and evacuation modeling make it nearly impossible to precisely model potential evacuation outcomes (Maranghides and Link, 2023).

Simulation models cannot account for all variables present during an evacuation. Evacuation analyses for the 2025 CWPP are useful for assessing relative evacuation times and congestion across the district, but they are not intended to depict what will occur in any specific evacuation event or to suggest specific routes for individual residents. All residents should know and practice driving different routes out of their neighborhoods. **Residents need to follow guidance from law enforcement personnel during evacuation events, practice safe driving, and follow evacuation etiquette (e.g., allowing cars to merge and not texting or stopping to take photographs).**

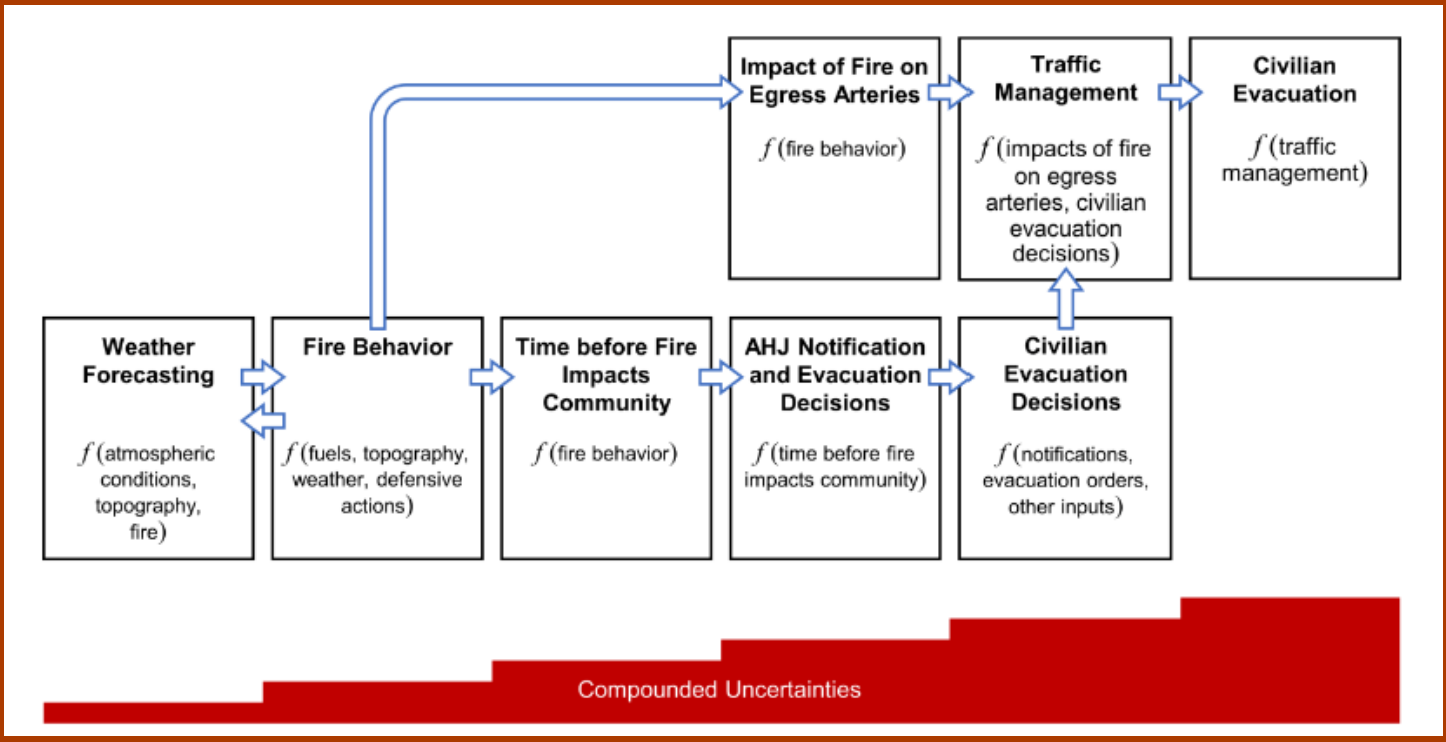


Illustration from Maranghides and Link (2023) demonstrating the interrelationships and compounding uncertainties involved in evacuation models. AHJ = authorities having jurisdiction.

Given the funding, timeline, scope, and intent of the CWPP, The Ember Alliance and CWPP Advisory Committee decided to utilize the same model, ArcCASPER, that was used for the 2020 EFPD CWPP. ArcCASPER is an open-source, large-scale evacuation routing tool based on peer-reviewed research, and it has been found to simulate reasonable evacuation patterns (Harris et al., 2015; Shahabi, 2015; Shahabi and Wilson, 2014). ArcCASPER easily integrates into ArcMap software, which was utilized for other spatial analyses and maps for the 2025 CWPP, making it a reasonable and cost-effective approach. Assumptions and limitations of ArcCASPER are described below. Many of these limitations are shared with other widely available evacuation models. If more detailed evacuation modeling is desired, EFR could hire a traffic engineer for a study solely focused on evacuation modeling and planning.

The analysis completed using ArcCASPER for the 2025 CWPP was conducted for two specific purposes:

- Determine which parts of the district might take relatively longer to evacuate than others given the roadway network and housing densities under a potential fire and evacuation scenario. This information fed into plan unit relative risk ratings for the 2025 CWPP, and it is helping EFR determine where residents might be most in need of targeted education about the importance of responding early to evacuation orders.
- Determine which roadways might experience relatively more congestion under a potential fire and evacuation scenario. Congestion predictions were one piece of information supporting the prioritization of roadside fuel treatment for the 2025 CWPP.

The analysis using ArcCASPER for the CWPP is NOT intended or appropriate for:

- Developing general or incident-specific evacuation plans. A limited number of scenarios were modeled for the CWPP, so it is unlikely that a specific incident would match the exact situations modeled here.
- Determining when evacuation orders should be given. These decisions are context specific and made by experts during an actual emergency as it unfolds.
- Determining which specific routes people should take during an evacuation. Individual residents are responsible for being familiar with potential evacuation routes and to practice driving these routes under various conditions, including under limited visibility and at night. Law enforcement personnel will provide specific information about route closures and availability during an actual incident.
- Determining the exact amount of time it would take individual residents to evacuate. The purpose of ArcCASPER is to minimize global evacuation time—the time it takes for all simulated evacuees to reach scenario endpoints—and not to optimize evacuation routes for each individual evacuee.
- Determining the exact amount of time it would take for all evacuees in simulated evacuation groups to reach scenario endpoints. Relative times are much more reliable than exact times given inherent uncertainty in the model, and relative times were more important than exact times for the purposes of the CWPP as the analysis supported the plan unit relative risk assessment.
- Determining the exact level of congestion that could be experienced along a roadway. Estimates of relative congestion are more reliable than exact estimates of congestion given inherent uncertainty in the model, and relative congestion was more important than exact congestion for the purposes of the CWPP as the analysis was one piece of information supporting the prioritization of roadways for treatments in the district.

Modeling Approach

We modeled evacuation time and roadway congestion using ArcCASPER (Shahabi, 2015; Shahabi and Wilson, 2014). Estimates from ArcCASPER are useful for determining relative evacuation capacity and congestion across the district and are not intended to predict household-specific evacuation times.

ArcCASPER "intelligently and dynamically takes into account road capacity and travel time to create routes that minimize traffic congestion and evacuation times" (Shahabi, 2012). The CASPER (Capacity-Aware Shortest Path Evacuation Routing) system estimates traversal speeds for road segments based on roadway capacity (number of lanes), road speed, number of cars evacuating per address, and the relationship between roadway congestion and reduction in travel speed (also known as the "traffic model").

ArcCASPER assumes simultaneous departure of vehicles, but the model's algorithm starts with the evacuee farthest from predefined scenario endpoint(s) and finds that evacuee's quickest path to an endpoint. It iteratively continues this process until there are no more evacuees left. During the analysis, ArcCASPER dynamically updates how long it takes to traverse each road segment based on the number of evacuees using that route and the relationship between traffic and travel speeds. The model adjusts evacuation routes until it minimizes the global evacuation time (i.e., the time it takes for all evacuees to reach predefined scenario endpoints). The objective of the model is NOT to minimize the evacuation time for each individual evacuee.

ArcCASPER Limitations

- ArcCASPER does not account for unpredictable events, such as roadway blockage from accidents, non-survivable conditions along roadways burned-over by flames, or reduced visibility from smoke.
- ArcCASPER does not model background traffic from vehicles on the road but not involved in the evacuation. We included evacuees outside the district that might be utilizing the same roadways as evacuees from inside the district to help address this.
- ArcCASPER also does not model the impact that different types of vehicles might have on evacuations, such as semi-trucks, trucks with trailers, or large recreational vehicles.
- ArcCASPER assumes simultaneous departure of vehicles.
- Predictions are very sensitive to decisions about the shape of the traffic model (e.g., power, exponential, linear), the critical density (number of cars that can be on a road with two lanes [one lane in each direction] without a reduction in travel speed, and the saturation density (number of cars on the road at which the traversal speed reduces to half the original speed) (Shahabi, 2015; Shahabi and Wilson, 2014).
- ArcCASPER does not model the impact of traffic lights, stop signs, or curves on traffic flow.

Evacuation Scenarios

An accurate road network is vital for evacuation modeling, so we worked with the CWPP Advisory Committee to conduct an extensive quality assurance / quality control on road data from Open Street Map. We also work with the Advisory Committee to define evacuation groups, scenario endpoints, and the number of vehicles that might be departing from recreation locations. **Endpoints were locations along major roads at which point the evacuation simulation ended; endpoints were NOT evacuation destinations that would be used during an actual incident.**

We conducted evacuation assessments for 12 evacuation units across the district, which were comprised of 1 to 4 plan units (**12**). The Jefferson County Sheriff's Office has begun using CWPP plan units to assist with evacuation decisions in districts such as EFPD that have explicitly considered evacuations in the delineation of plan units. Each evacuation unit had specific scenario endpoints based on the most likely direction(s) of travel for evacuees from that unit. Evacuation units also differed in which recreational areas and addresses outside the district were included in the simulation (**Table B.4**, **Table B.5**). Roadway networks were modified for each evacuation unit to eliminate unnecessary roadways that ArcCASPER might include to reduce global evacuation times but that would unrealistically be used by evacuees.

We modeled two vehicles leaving each residential address and ten vehicles departing from each business address. We worked with the Advisory Committee to estimate the number of vehicles that might be parked at major recreation sites in the district on a busy summer day. Vehicles from recreation sites were included as evacuees for certain evacuation units based on the location of the recreation site (**Table B.5**). Even though it might take time for evacuees at recreation sites to hike back to their vehicles, delayed departure times cannot be assigned to individual evacuees in ArcCASPER, plus the number of recreators that might be away from their vehicles and their hiking pace are highly variable and unknown.

We used the default traffic model in ArcCASPER, which is a power traffic model with a critical density of 10 and saturation density of 500. The power model is recommended by the model developer (Shahabi, 2015).

Model Output

After simulating evacuations for each evacuation unit, we determined the maximum degree of congestion that was experienced for each segment of road across all evacuation scenarios (**Figure B.14**). Roads were categorized by the congestion index—how much longer it might take to traverse a segment of road with evacuation traffic versus without traffic. Congestion predictions were combined with potential roadway survivability to help prioritize roads for fuel treatments (see section on fuel treatment prioritization below).

We also determined the time required to evacuate all evacuees to scenario endpoints relative to the other evacuation units (**Figure B.15**). We do not present the absolute evacuation times modeled by ArcCASPER because the actual time it would take to evacuate during a specific incident is influenced by a variety of factors not considered in this modeling effort, such as the staggering of evacuation orders, the nature of evacuation orders (i.e., voluntary versus mandatory), traffic accidents, delays from people stopping to take photographs, reduced visibility from smoke, etc.

The CWPP Advisory Committee evaluated the model results and found the predictions reasonable based on their experience of traffic flow in the district and experience with wildfire evacuations in similar areas. After an initial review, several modifications were made to the road network and inclusion of recreation areas and addresses outside the district. The output is useful for understanding where there might be a greater potential for evacuation congestion and extended evacuation times under the assumptions used for these scenarios. One prediction that surprised the Advisory Committee was the lower evacuation time predicted for evacuation unit 8 (Little Cub Creek). The smaller size of this evacuation unit combined with the number of alternative egress routes to reach Highway 74 and Little Cub Creek Road explain these predictions. However, the roads in evacuation unit 8 are narrow, steep, winding, and lined with dense vegetation, so there are still serious evacuation concerns in this area. **Evacuation preparedness is paramount for all residents, recreators, and visitors to the district.**

Evacuation Unit Congestion

Evacuation unit 1:

Floyd Hill

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
US 40	High to extreme	First priority	
Beaver Brook Canyon Road	Moderate		
Saddleback Drive	Moderate		
Aspen Drive	Moderate		
Meadow View Drive	Moderate		
Saddle Ridge Drive	Moderate		

Evacuation unit 2:

Filius Park

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
County Road 65	High to extreme	Second or third priority (depending on section)	
County Rod 103	Moderate	First priority	
South Soda Creek Road	Moderate	Third priority	
Soda Creek Drive	Moderate		
South Stiles Drive	Moderate		
Valley Road	Moderate		

Kerr Gulch

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Kerr Gulch Road	Lower	Third priority	Yes

North Evergreen

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
I70	High to extreme	First priority	Yes
US 40	High to extreme	First priority	
Soda Creek Drive	Lower		Yes

Evacuation unit 3:

Beaver Brook

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes (portions of roadway)
Pine Valley Road	Moderate		

Echo Hills

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes (portions of roadway)
Sinton Road	Moderate	Third priority	Yes

Evacuation unit 4:

Bergen Park

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Evergreen Parkway	High to extreme	First priority	Yes
Brookline Road	High to extreme		
Lewis Ridge Road	High to extreme		
Keystone Drive	Moderate	Third priority	
Prouty Drive	Moderate	Third priority	
Augusta Drive	Moderate		
Interlocken Drive	Moderate		
Inverness Drive	Moderate		
Pinehurst Drive	Moderate		
Placid Drive	Moderate		
South Hiwan Drive	Moderate		
South Medinah Drive	Moderate		
Sugarbush Drive	Moderate		
The Country Club Lane	Moderate		

Evacuation unit 5:

Bear Creek East

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Highway 73	High to extreme	First priority	Yes
Stagecoach Boulevard	Moderate	Second priority	Yes
Upper Bear Creek Road	Moderate	Second priority	Yes
Witter Gulch Road	Moderate	Second priority	Yes (portions of roadway)
Greystone Road	Moderate		Yes
South Blue Spruce Road	Lower		Yes

Bear Creek West

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Upper Bear Creek Road	Moderate	Second priority	Yes
Witter Gulch Road	Moderate	Second priority	Yes (portions of roadway)
Yankee Creek Road	Moderate		Yes
Circle K Ranch Road	Moderate		
Echo Lake Drive	Moderate		
Marion Drive	Moderate		
Mary Beth Road	Moderate		
Patty Drive	Moderate		

Evergreen West

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
County Road 103	High to extreme	First priority	Yes
Witter Gulch Road	Moderate	Second priority	
Aspen Place	Moderate		

Watershed West

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Yankee Creek Road	Lower		Yes
Upper Bear Creek Road	Lower		Yes
Evans Ranch Road	Lower		Yes

<u>Evacuation unit 6:</u>

Central Evergreen

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Stagecoach Boulevard	Moderate	Second priority	Yes
Upper Bear Creek Road	Moderate	Second priority	Yes
Troutdale Scenic Drive	Moderate		
Overlook Trail	Moderate		
Bergen Peak Drive	Moderate		
Elk View Drive	Moderate		
Tanoa Road	Moderate		

Stagecoach/Hiwan Hills

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Evergreen Parkway	High to extreme	First priority	Yes
Douglas Park Road	High to extreme		
Lewis Ridge Road	High to extreme		
Alpine Drive	Moderate		
Aspen Lane	Moderate		
Cedar Circle	Moderate		
Clover Lane	Moderate		
Fir Drive	Moderate		
Fireweed Drive	Moderate		
Forest Way	Moderate		
Hilltop Drive	Moderate		
Histead Drive	Moderate		
Meadow Drive	Moderate		
Pine Drive	Moderate		
Ponderosa Drive	Moderate		
Wild Rose Drive	Moderate		

<u>Evacuation unit 7:</u>

Kittredge

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Kerr Gulch Road	Moderate	Third priority	Yes
Myers Gulch Road	Moderate	Third priority	Yes
Hill Top Drive	Moderate		
Meadow View Road	Moderate		
South Piney Ridge Road	Moderate		
Sweetbriar Trail	Moderate		
Welch Avenue	Moderate		

Evacuation unit 8:

Little Cub Creek

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Bear Creek Road	High to extreme	First priority	Yes
Highway 73	High to extreme	First priority	Yes
Little Cub Creek Road	High to extreme	Second priority	
Stanley Park Road	Lower	Second priority	
Independence Trail	Moderate		
Camel Heights Road	Moderate		
Forest Hill Road	Moderate		
Mountain Park Road	Moderate		
South Road A	Moderate		
Trinchera Trail	Moderate		

Evacuation unit 9:

Buffalo Creek East

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First priority	Yes
Buffalo Park Road	High to extreme	Second priority	Yes
Cliff Road	High to extreme	Second priority	
Columbine Road	High to extreme	Second priority	
Hatch Drive	High to extreme	Second priority	
Olive Lane	High to extreme		
South Olive Road	High to extreme		
South Brook Forest Road	Moderate	Second priority	Yes
Isenberg Lane	Moderate	Second priority	
King Drive	Moderate	Second priority	
Middleton Road	Moderate	Second priority	
Monroe Drive	Moderate	Second priority	
Snowshoe Road	Moderate	Second priority	
South Elaine Road	Moderate	Second priority	
South Merriam Drive	Moderate	Second priority	
Posy Lane	Moderate		
South Olive Lane	Moderate		
South Pine Road	Moderate		
Valley View Road	Moderate		

Woods Drive	Moderate		
South Blue Spruce Road	Lower^		Yes

Buffalo Creek West

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Buffalo Park Road	Moderate	Second priority	Yes
Snowshoe Road	Moderate	Second priority	

Evacuation unit 10:

Blue Creek

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Blue Creek Road	High to extreme	Second priority	Yes
South Brook Forest Road	Moderate	Second priority	Yes
Lynx Lair Road	Moderate		
Berry Brush Lane	Low		

Brook Forest

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Black Mountain Drive	High to extreme	Second priority	Yes
South Brook Forest Road	High to extreme	Second priority	Yes
Forest Estates Road	High to extreme	Second priority	
Saint Moritz Drive	High to extreme		
Aspen Way	Moderate	Second priority	
Cedar Road	Moderate		
Stransky Road	Lower		Yes (eastern segment of roadway)

Buffalo Park Estates

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
South Brook Forest Road	Moderate	Second priority	Yes
Aspen Meadow Drive	Moderate		
Blue Spruce Lane	Moderate		
Brook Forest Drive	Moderate		
Ponderosa Way	Moderate		

Evacuation unit 11:

Evergreen Meadows

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73^	High to extreme	Second priority	Yes
Centaur Drive	Moderate		
Gray Fox Drive	Moderate		
South Alsab Trail	Moderate		
South Citation Trail	Moderate		
South Grizzly Way	Moderate		
South Peace Chance Trail	Moderate		
South Red Fox Drive	Moderate		
Whirlaway Trail	Moderate		

Herzman/Marshdale

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First or second priority (depending on section)	Yes
South Brook Forest Road	Moderate	Second priority	Yes
Camel Heights Road	Moderate		
Cragmont Drive	Moderate		
South Cubmont Drive	Moderate		
South Kiem Road	Moderate		
South Skyline Drive	Moderate		

Evacuation unit 12:

Bear Mountain

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway
High Drive	Moderate	Second priority
Stanley Park Road	Moderate	Second priority
Lone Peak Drive	Moderate	
Lone Peak Trail	Moderate	
South Bear Mountain Drive	Moderate	

Danks Drive

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73	High to extreme	First or second priority (depending on section)	Yes
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes

High Drive

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes
High Drive	High to extreme	Second priority	
Meadow Drive	Moderate		
South Valley Circle	Moderate		
South Valley Drive	Moderate		
Westway Drive	Moderate		
Peaceful Hills	Moderate		

North Turkey Creek

Potentially non-survivable roadway	Potential evacuation congestion	Evergreen FPD CWPP priority roadway	Potential control line / POD boundary
Highway 73^	High to extreme	Second priority	Yes
North Turkey Creek Road	High to extreme	First or third priority (depending on section)	Yes
Silverhorn Drive	Moderate		
South Kilimanjaro Drive	Moderate		
Little Cub Creek Road	Lower		

Table B.4. *Evacuation units and their associated plan units and scenario endpoints. WB = westbound. EB = eastbound. SB = southbound.*

Unit ID	Plan unit(s)	Number of vehicles in scenario		Scenario endpoint(s)						
		Inside of district	Outside of district	I-70 (WB)	I-70 (EB)	Hwy 74 (EB)	Hwy 285 (EB)	Hwy 285 (WB)	Hwy 73 (SB)	CR 103 (WB)**
1	Floyd Hill	766	386	X	X					
2	Fillius Park Kerr Gulch^ North Evergreen	2,484	213	X	X	X				
3	Beaver Brook Echo Hills	684		X	X					X
4	Bergen Park	4,502		X	X					
5	Bear Creek East Bear Creek West Evergreen West Watershed West	2,582			X	X			X	X
6	Central Evergreen Stagecoach/Hiwan Hills	9,130			X	X			X	
7	Kittredge	1,764	559			X	X			
8	Little Cub Creek	1,428				X			X	
9	Buffalo Creek East Buffalo Creek West	3,162				X			X	
10*	Blue Creek Brook Forest Buffalo Park Estates	2,128	46						X	
11*	Evergreen Meadows Herzman/Marshdale	2,330	528			X	X		X	
12	Bear Mountain Danks Drive High Drive North Turkey Creek	2,384	116			X	X	X	X	

^Two addresses in Kerr Gulch were excluded from the evacuation analysis because these addresses would evacuate along Cold Springs Gulch Road and not with any other addresses in the district.

*Sixteen addresses in Blue Creek were included in evacuation unit 11 instead of evacuation unit 10 because these addresses share egress with addresses in Evergreen Meadows.

**ArcCASPER was sending many residents westbound on County Road 103 to increase evacuation efficiency, but it is unlikely that as many residents would go westbound on County Road 103 as the model initially predicted. We reduced the "capacity" of this scenario endpoint to 425 vehicles and the "Cost per Safe Zone Density" to 30 in ArcCASPER to more realistically model the number of evacuees likely to travel in that direction.

Table B.5. *Number of vehicles simulated for each recreation site in the district, and the evacuation groups with which they were included.*

Recreation site	Number of vehicles	Included in evacuation unit(s)
Keys on the Green	50	5 and 6
Buchanan Park / Recreation Center	185	2,4, and 6
Corwina Park East Trailhead	40	2 and 7
Panorama Point Trailhead	25	2 and 7
O'Fallon Park	50	2 and 7
Evergreen Lake House		
Parking at lake	125	5 and 6
Overflow at church	50	6
Alderfer / 3 Sister Park		
East lot	30	9
West lot	42	9
Buffalo Park Road	80	9
Maxwell Falls		
Lower Trailhead	50	10
Upper Trailhead	30	10
Elk Meadow Park		
Lewis Ridge lot	81	4 and 6
Stagecoach lot	67	5 and 6
Lair O’ the Bear		
Parking lot	103	2 and 7
Bear Creek Road	35	2 and 7

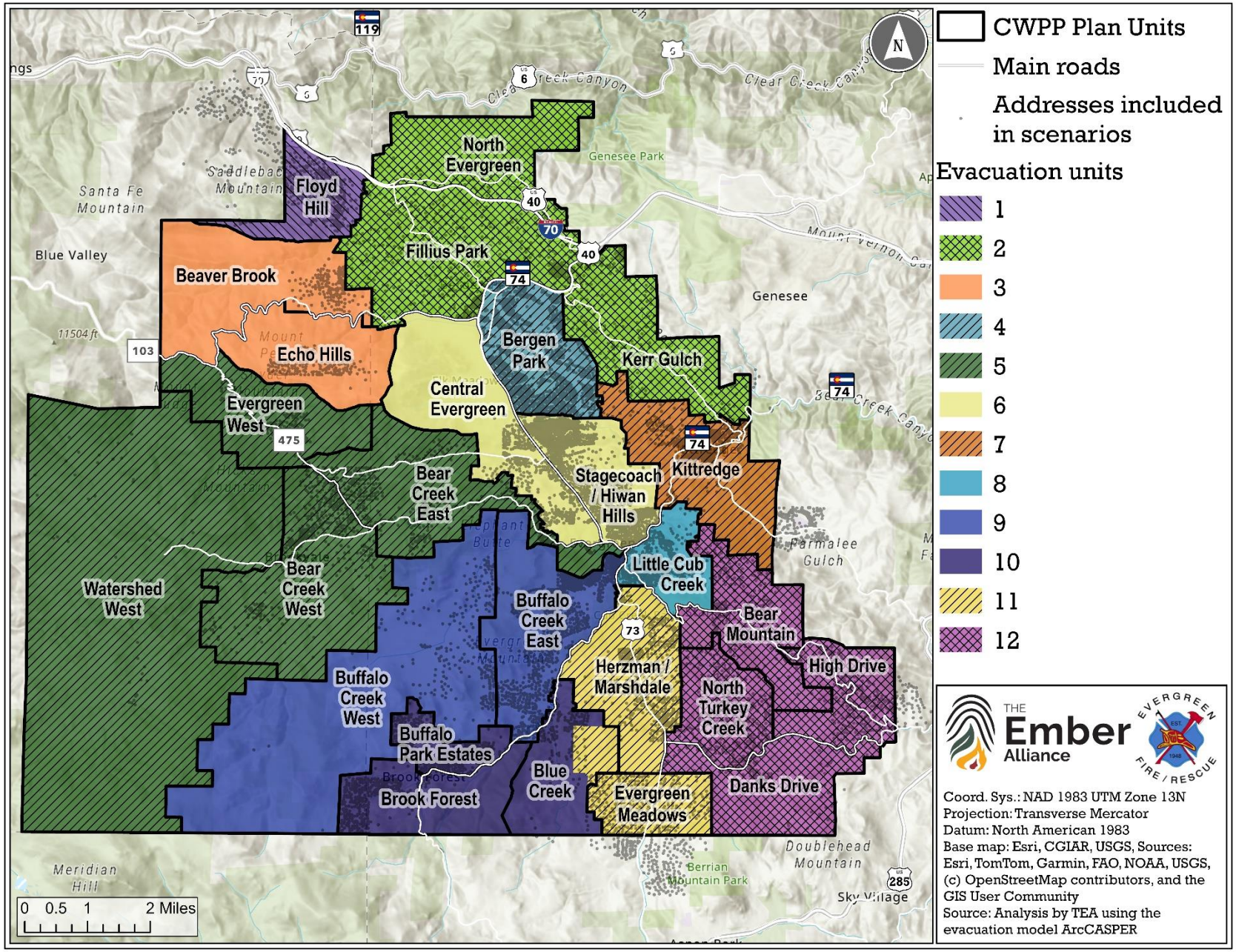


Figure B.13. *Several CWPP plan units were combined to create 12 evacuation units for evacuation modeling as part of the district's 2025 CWPP.*

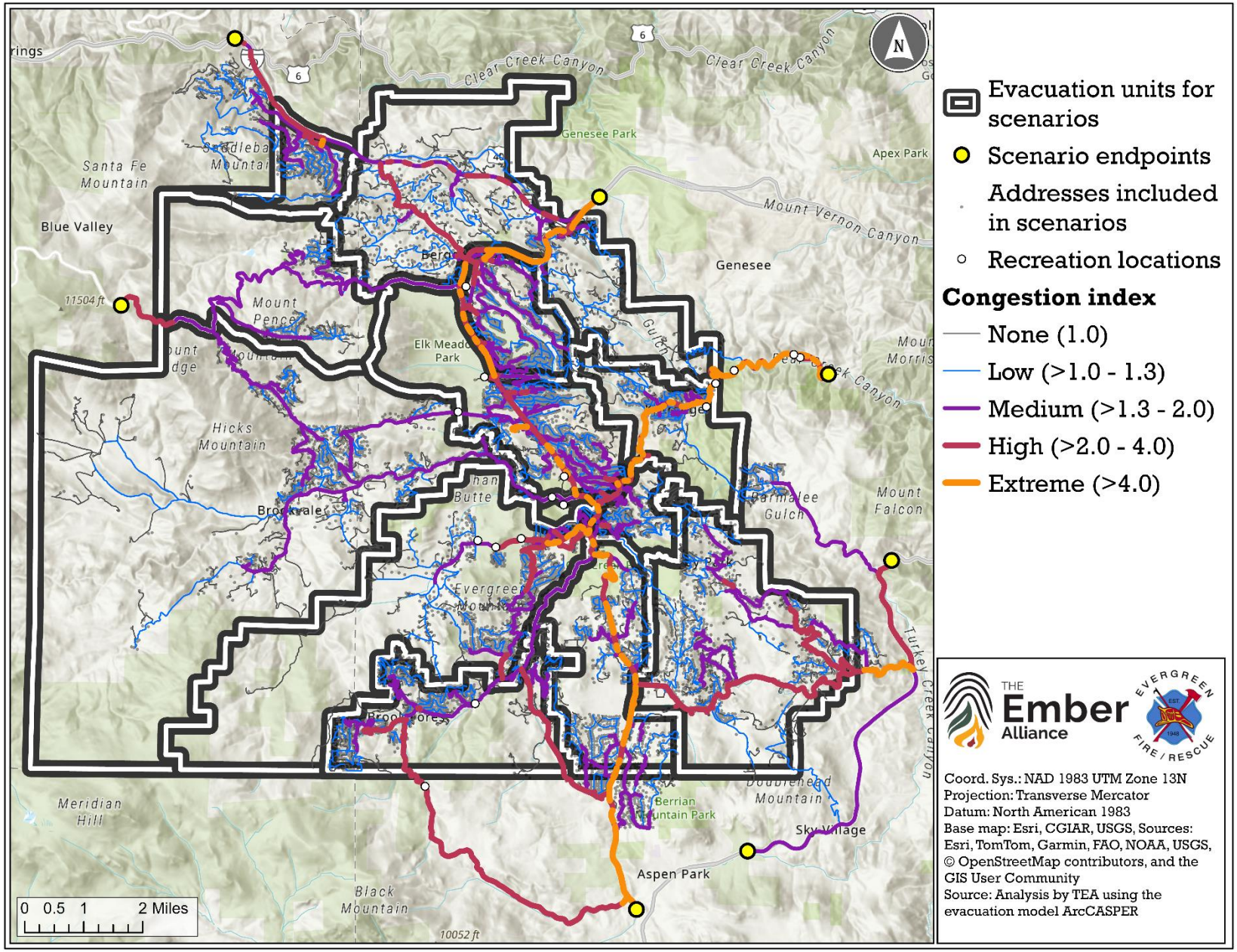


Figure B.14. *Maximum predicted congestion across all evacuation unit scenarios. Congestion index is the ratio between the time required to traverse a segment of road with congestion vs. without congestion.*

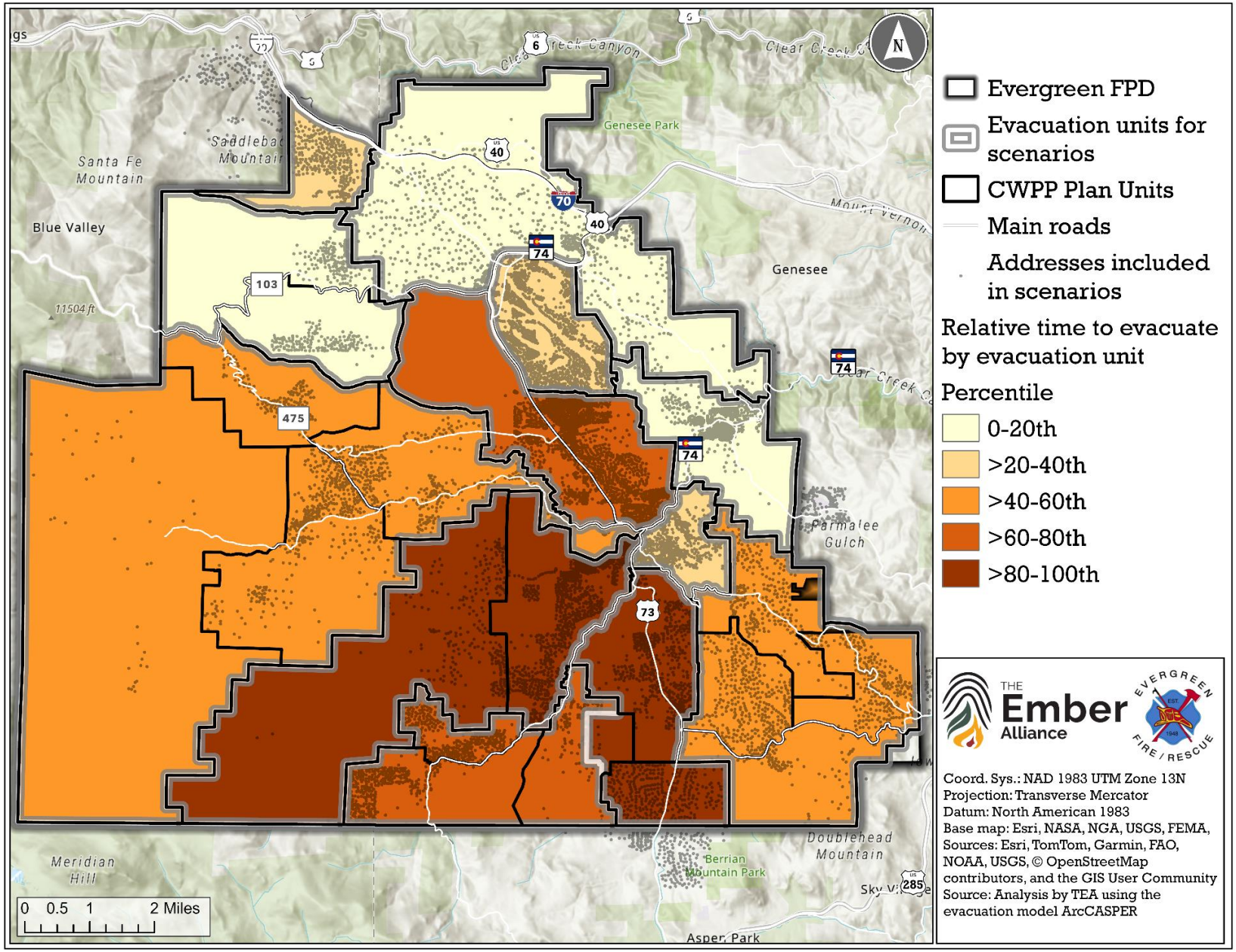


Figure B.15. *Relative time to evacuate all evacuees in each evacuation unit based on the modeling assumptions outlined above. Evacuation preparedness is paramount for all residents, recreators, and visitors to the district, even in areas that could potentially have lower relative evacuation times.*

Climate Change Assessment

Climate change has a measurable impact on fire intensity, frequency, and size, and these impacts are likely to continue over the coming decades (Parks et al., 2016). Fire behavior modeling for this CWPP utilizes weather data from 2014-2022 and does not include future weather predictions. To explore the potential for exacerbated fire weather conditions in the future, The Ember Alliance used the Climate Toolbox's future boxplots and future time series tools (Hegewisch et al., 2021). These tools model climate scenarios for the next 50-100 years using two representative concentration pathways (RCP) that assume different levels of global greenhouse gas emissions The RCP 4.5 scenario assumes that greenhouse gas emissions stabilize before the year 2100, peaking around 2040, and the RCP 8.5 scenario assumes that greenhouse gas emissions are not curtailed by 2100 (IPCC, 2014).

Three variables were selected for this assessment: maximum temperatures in the summer (June, July, and August), the number of days with very high fire danger, and vapor pressure deficit (VPD) in the summer. The Climate Toolbox defines very high fire danger as days with 100-hour fuel moisture below the 10th percentile fuel moisture from 1971-2000. VPD is a meaningful measurement of moisture stress experienced by plants, more so than relative humidity because VPD is independent of temperature. High values of VPD indicate that the air can draw more moisture out of leaves while they photosynthesize, resulting in drier fuels and increased fire risk.

The models predict that maximum summer temperatures in Evergreen, CO could increase by 3.1-4.3° Fahrenheit by 2050, going from 79.6°F in 2005 to 82.7-83.9°F in 2050 (**Figure B.16**). Evergreen, CO could experience about 7 or 8 more days per year with very high fire danger (**Figure B.17**), and average summer VPD could increase from 1.5 in 2005 to 1.7 kilopascal (kPa) by 2050 (**Figure B.18**). Drier fuels in the summer have a greater potential to carry large wildfires; an increase in summer VPD from 1.5 to 1.7 kPa is related to a 7-fold increase in annual area burned in forested parts of the western U.S. (Seager et al., 2015).

Fire behavior may be even more extreme, frequent, and extensive in the coming decades in the district. Mitigating actions in the coming years, including fuel treatments, defensible space around homes, and structure hardening, are critical to protecting life safety of residents and enhance community resiliency into the future.

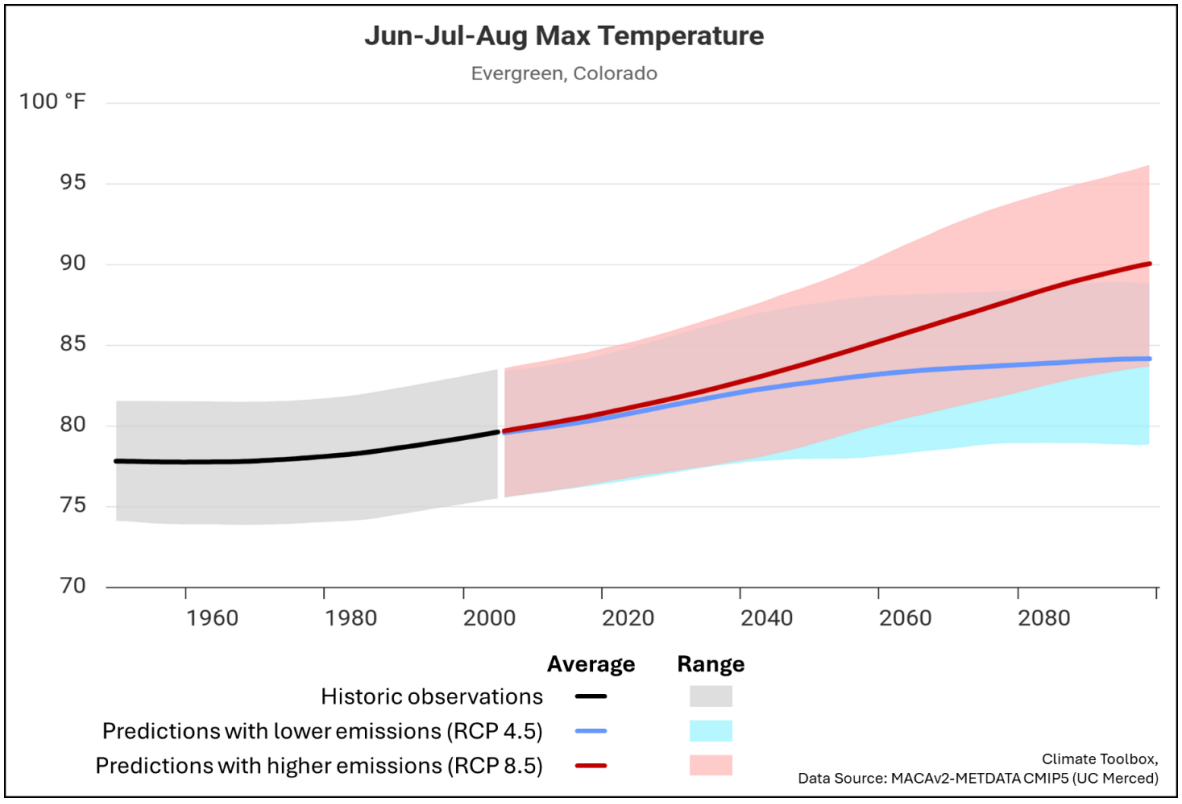


Figure B.16. *Predicted maximum summer temperature in Evergreen, Colorado under lower and higher greenhouse gas emission scenarios. Source: Climate Toolbox (Hegewisch et al., 2021).*

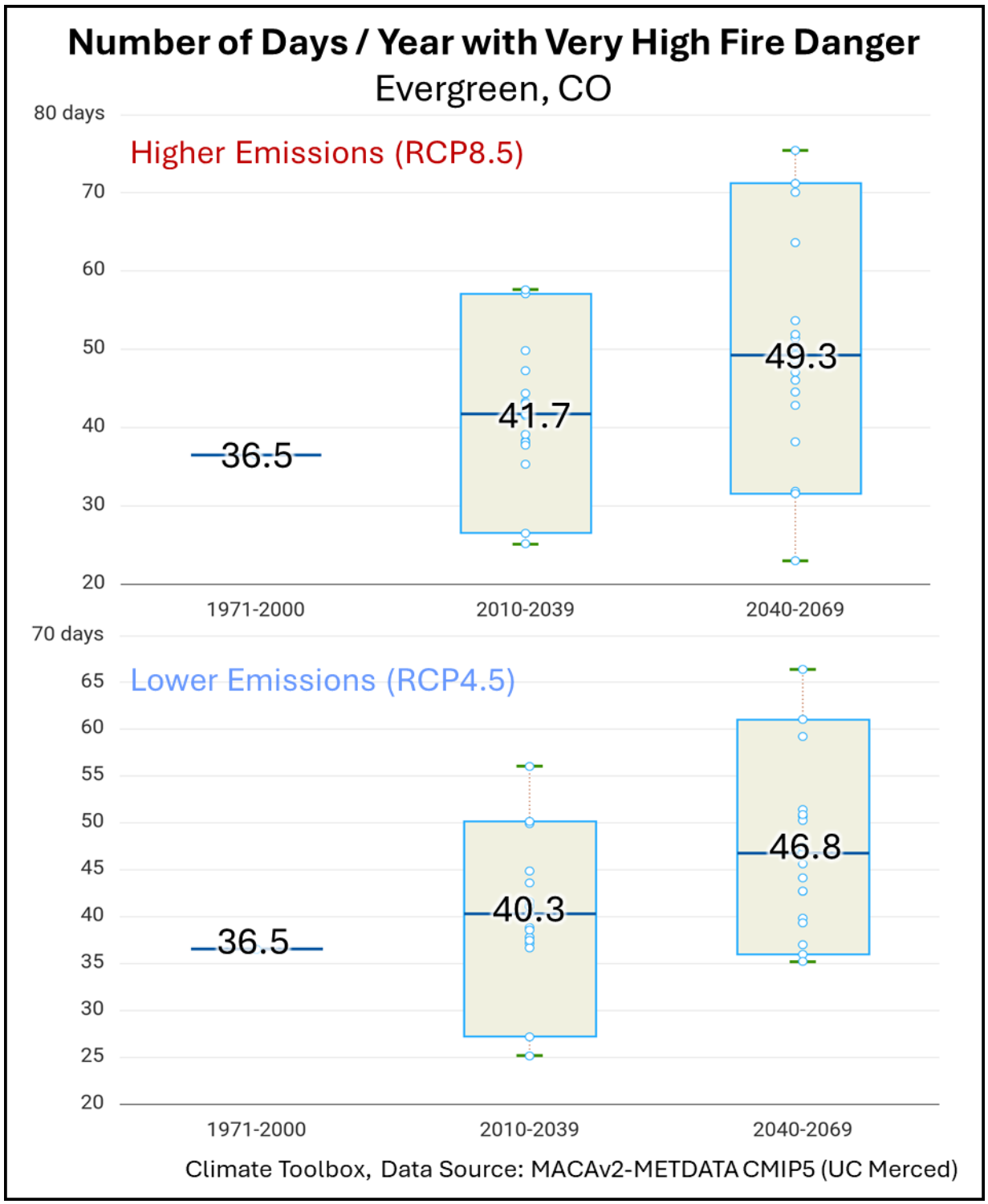


Figure B.17. *Predicted number of days with very high fire danger in Evergreen under lower and higher greenhouse gas emission scenarios. Source: Climate Toolbox (Hegewisch et al., 2021). Boxplots show 5th percentile, median, and 97th percentile predictions. Numbers indicate median values. Whiskers show minimum and maximum predictions. Dots represent individual predictions from different climate models.*

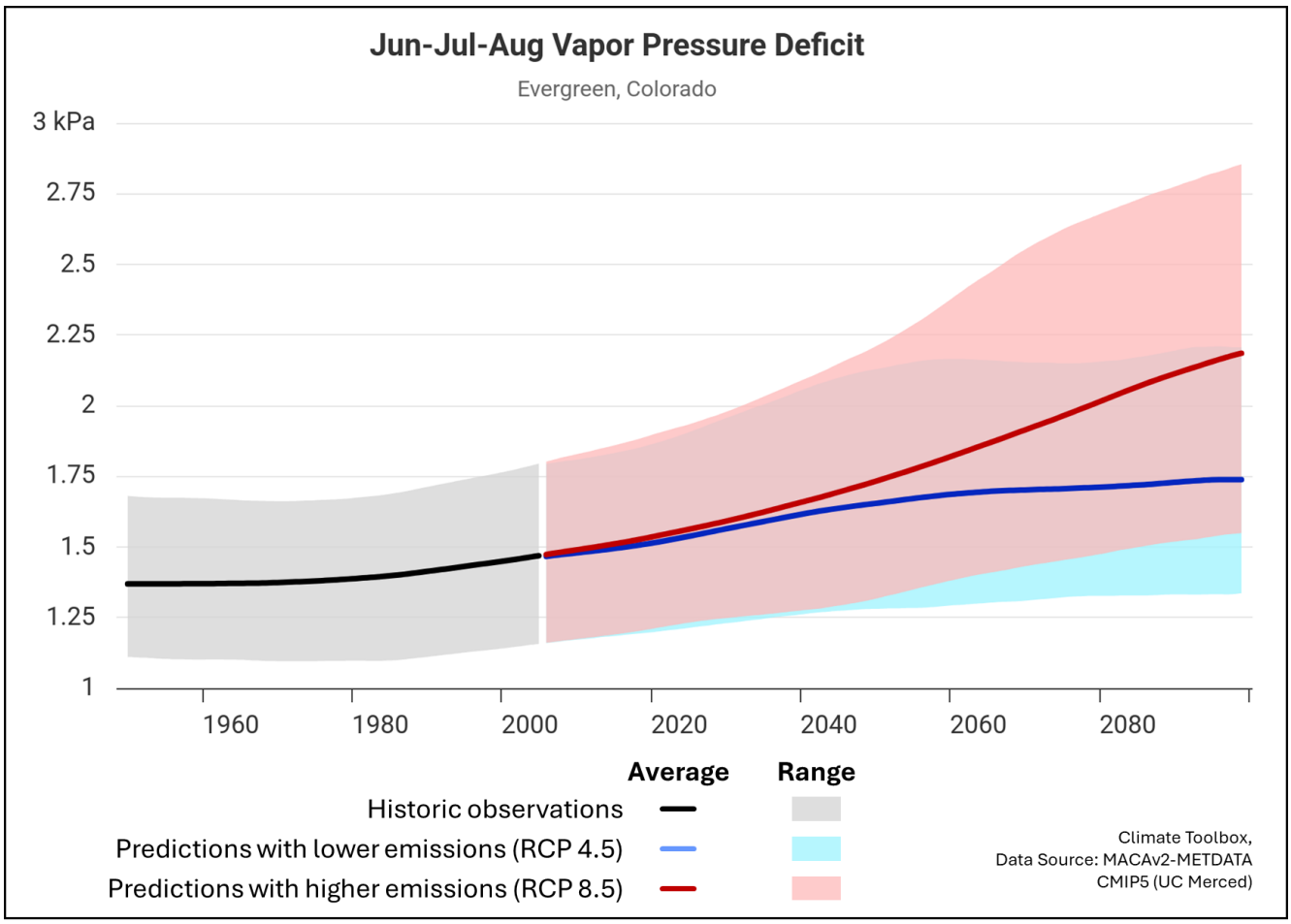


Figure B.18. *Predicted average summer vapor pressure deficit in Evergreen, Colorado under lower and higher greenhouse gas emission scenarios. Higher vapor pressure deficits are associated with drier fuels and greater fire risk. Source: Climate Toolbox (Hegewisch et al., 2021).*

Fuel Treatment Prioritization

Roadside Fuel Treatments

We assessed the potential need for roadside fuel treatments based on the potential for non-survivable conditions (>10% probability of flame lengths >8 feet) and maximum potential congestion based on evacuation modeling described above (**Figure B.19**). This analysis was utilized to inform decisions about priority roadway projects for the 2025 EFPD CWPP. Additional factors considered for prioritization were the location of priority projects from the Jefferson County CWPP and the location of POD boundaries. Roadways that are also POD boundaries could have strategic importance for fighters during wildfire suppression or serve as holding features during broadcast prescribed burns. The 2022 COAL analysis used to assess non-survivable conditions occurred at the scale of 0.2 acres (30 x 30 meters), so on-the-ground assessments are required to identify the exact location of roadside treatments.

The location of potential operational delineations (PODs) was an important consideration for treatment identification. PODs are collaboratively delineated fire management and planning units. Boundaries of PODs are called potential control lines that follow features such as roads, rivers, and ridgetops and can be used as tactical features during wildfires and for proactive landscape-scale management including prescribed burning the PODs StoryMap from the Rocky Mountain Research Station for more information.

Stand-Scale Fuel Treatments

Project areas were identified by the CWPP Advisory Committee and partners with land management agencies and other organizations at an in-person meeting on January 28th, 2025. Partners involved in the prioritization meeting were Evergreen Fire Rescue, U.S. Forest Service, Colorado State Forest Service, Jefferson County Sheriff's Office, Clear Creek County Sheriff's Office, Jefferson County Open Space, Jefferson Conservation District, Denver Mountain Parks, Genesee Foundation, Upper South Platte Partnership, Clear Creek Watershed & Forest Health Partnership's (CCWFHP), Core Electric, and Xcel Energy.

We divided participants into three groups, and each group drew their own priority treatment locations (**Figure B.20**). Groups identified and prioritized project areas based on the following factors:

- Potential fire behavior under extreme fire weather conditions (**Figure B.6**)
- Home exposure to radiant heat / embers (**Figure B.9**)
- Presence and exposure of infrastructure and other highly valued resources (**Figure B.11**)
- Previous fuel treatments and ongoing/planned projects (**Figure 2.g.1**)
- Location of PODs (**Figure 2.c.3**) and POD wildfire transmission risk and suppression difficulty index for the Arapaho Roosevelt National Forest (unpublished analysis by the Colorado Forest Restoration Institute).
- Priority areas previously identified by JCOS for their 2022 Forest Health Plan and the CCWFHP's 2021 Pre-Wildfire Planning Study.
- Potential for post-fire sediment delivery based on an analysis by TEA for the 2020 CWPP and ongoing analysis by Teren for the Natural Resources Conservation Service for a Wildfire Ready project (currently unpublished data).

After the meeting, project area locations and priorities were refined by the Advisory Committee and through follow-up conversations with partners (**Figure B.21**). The CWPP priority projects focus on high-priority locations to address in the next 5 years, but this prioritization does not discourage ecological resilience and fuel mitigation in other areas. If multiple neighbors work together to mitigate fire risk across ownership boundaries, it could attract funding and increase the priority and effectiveness of treating those areas. Land managers, county administrators, and residents should reevaluate fire risks and reprioritize projects as conditions change over time.

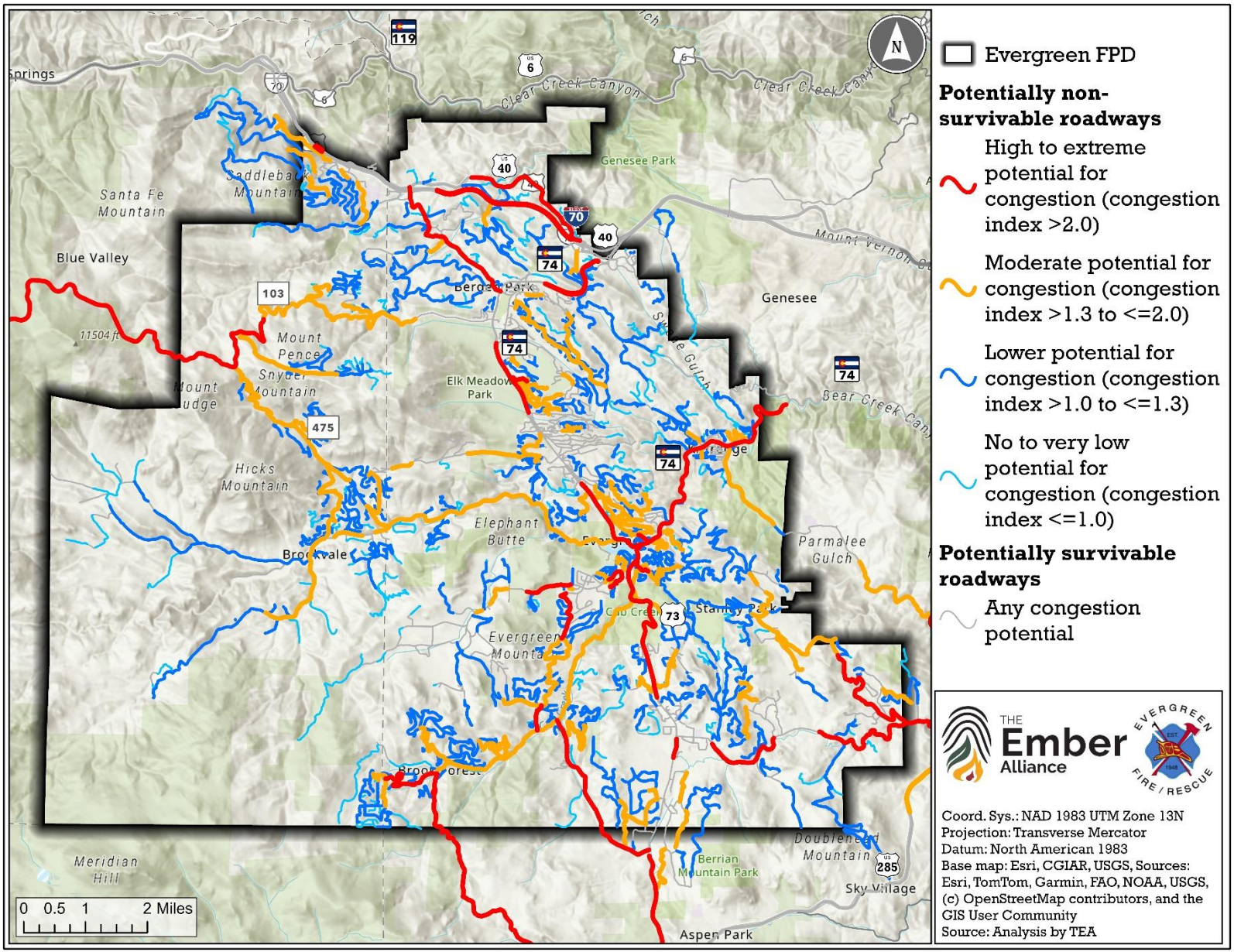


Figure B.19. *Potential need for roadside fuel treatments based on based on the potential for non-survivable conditions (>10% probability of flame lengths >8 feet) and maximum potential congestion. The 2022 COAL analysis used to assess non-survivable conditions occurred at the scale of 0.2 acres (30 x 30 meters), so on-the-ground assessments are required to identify the exact location of roadside treatments.*

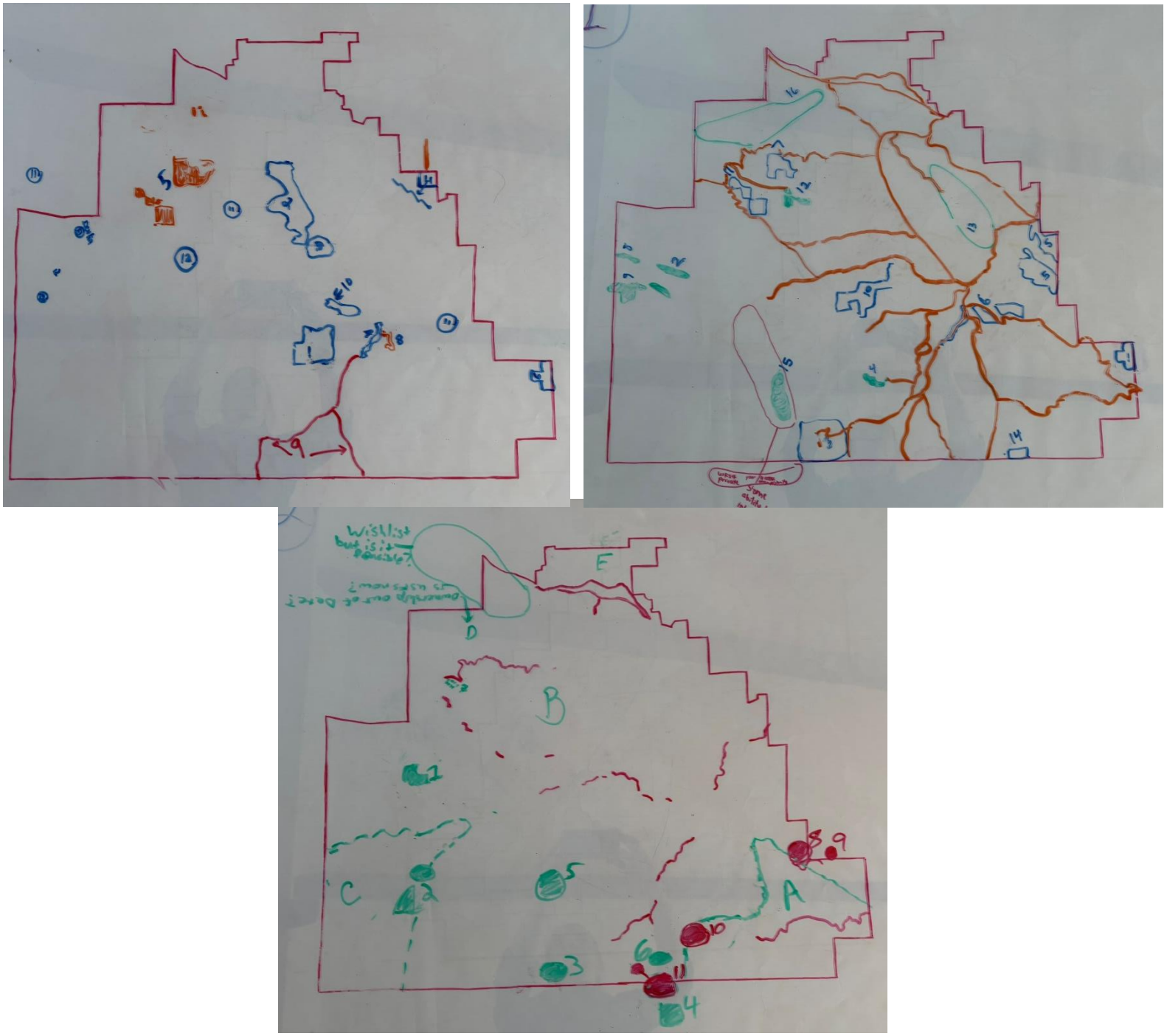


Figure B.20. *Roadside and stand-scale fuel treatments identified by each of the three groups of partners at the prioritization meeting for the district's 2025 CWPP on January 28th, 2025. After the meeting, project area locations and priorities were refined by the Advisory Committee and through follow-up conversations with partners (**Figure B.21**).*

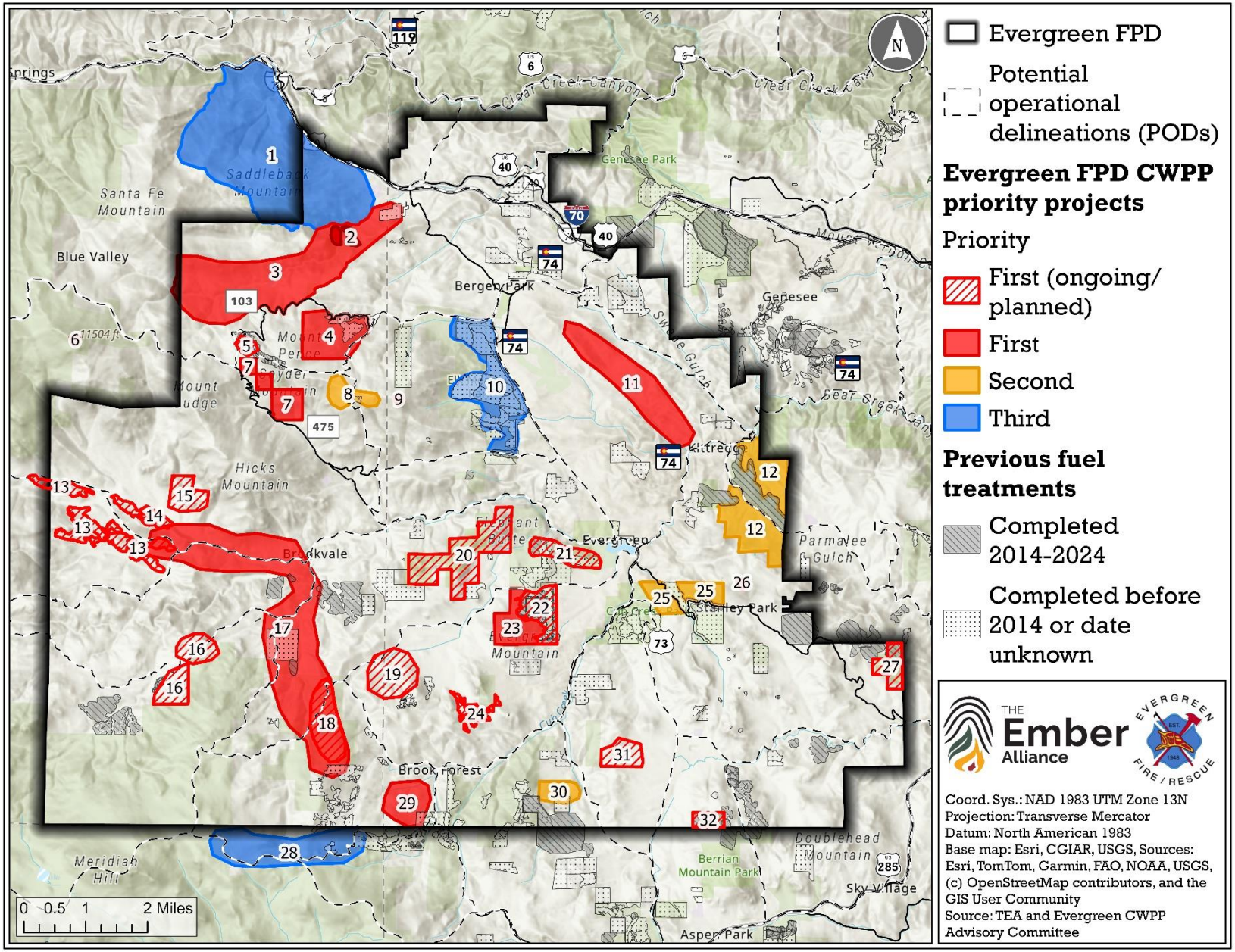


Figure B.21. *Priority project areas for planning and/or implementation in the next 5 years to reduce the impact of wildfire in the district, create strategic opportunities for wildland firefighters, create safer conditions for evacuations, and promote ecological resilience.*