



# **Town Of Palmer Lake Community Wildfire Protection Plan**

**Warning and Disclaimer:** The degree of protection from wildfire hazards intended to be provided by this plan is considered reasonable for planning purposes and is based on accepted forestry and fire science methodology. This plan is intended to aid the community in minimizing the dangers, costs, and impacts from wildfire hazards. Fire is a natural force and historical part of the ecosystem. Therefore, unforeseen, or unknown wildfire conditions or natural or man-made changes in conditions such as climate, vegetation, fire breaks, fuel materials, fire suppression or protections devices, and ignition sources may contribute to future damages to structures and land uses even though properly permitted within designated wildfire hazard areas.

**MOTHER NATURE HAS THE RIGHT OF WAY**

## Table of Contents

<b>Introduction</b>	<b>3</b>
<b>Key Stakeholders</b>	<b>3</b>
<b>Identified Risk/Fire History Map(s)</b>	<b>4-7</b>
<b>Assets at Risk</b>	<b>8</b>
<b>Forest Health/Fire Fuel Class</b>	<b>10</b>
<b>Action Plan</b>	<b>14</b>
<b>Signature Page</b>	<b>17</b>

## INTRODUCTION

The Palmer Lake Community Wildfire Protection Plan (PLCWPP) is a broad plan focused on the protection of residents, structures, and scenic environment of neighborhoods from catastrophic wildfires. The PLCWPP represents a collaboration of Colorado State Forest Services, Palmer Lake Fire Department, and the Town of Palmer Lake. The PLCWPP is intended as a *living document* and will be updated as wildfire mitigation and firefighting methodologies and support technologies change every 10 years. This PLCWPP follows the guidelines set forth in the *Health Forest Restoration Act of 2014* and the *Colorado State Forest Service Minimum Standards for Community Wildfire Protection*. The plants and animals that live in the state of Colorado and the Town of Palmer Lake are adapted to fire, they need fire to create new life and diversity. Fire mitigation is a lifestyle. It is not a one-time event; fire mitigation is a continuous activity.

## Key Stakeholders

The (PLCWPP) is sponsored by the Palmer Lake Fire Department (FD) and Town for the safety of life and protection of property in neighborhoods throughout the town and immediate vicinity. Development of this PLCWPP focuses primarily on wildfire hazard identification and fuel mitigation. The fuel mitigation focuses on specific wildfire risk areas with heavy fuel densities and terrains that could be used for wildfire prevention, coupled with close attention paid to upholding ecological values. Wherever possible, other values such as wildlife habitat enhancement, forest health restoration, improved aesthetics and increased property values.

This PLCWPP is a *“living”* document that will be evaluated and maintained as a responsibility of the fire department. Each individual project identified within this plan has a measured baseline, i.e., current condition description of its *“before”* profile that will be used to evaluate the effectiveness of any fuel reduction project performed during the plan years. Consequently, this plan may be amended and edited to assure that it remains viable and achieves its original intent.

Four primary strategies are employed to achieve mitigation:

1. Each neighborhood or community provides fuel mitigation treatment to HOA owned land and critical private parcels.
2. Encouragement of private landowners doing their own wildfire fuel mitigation.
3. Working with the Town and other stakeholder agencies to require developers of stand-alone, undeveloped areas within zones surrounding the communities to mitigate their land before building occurs.
4. Support of on-going fuel treatment projects on federal, state and county properties.

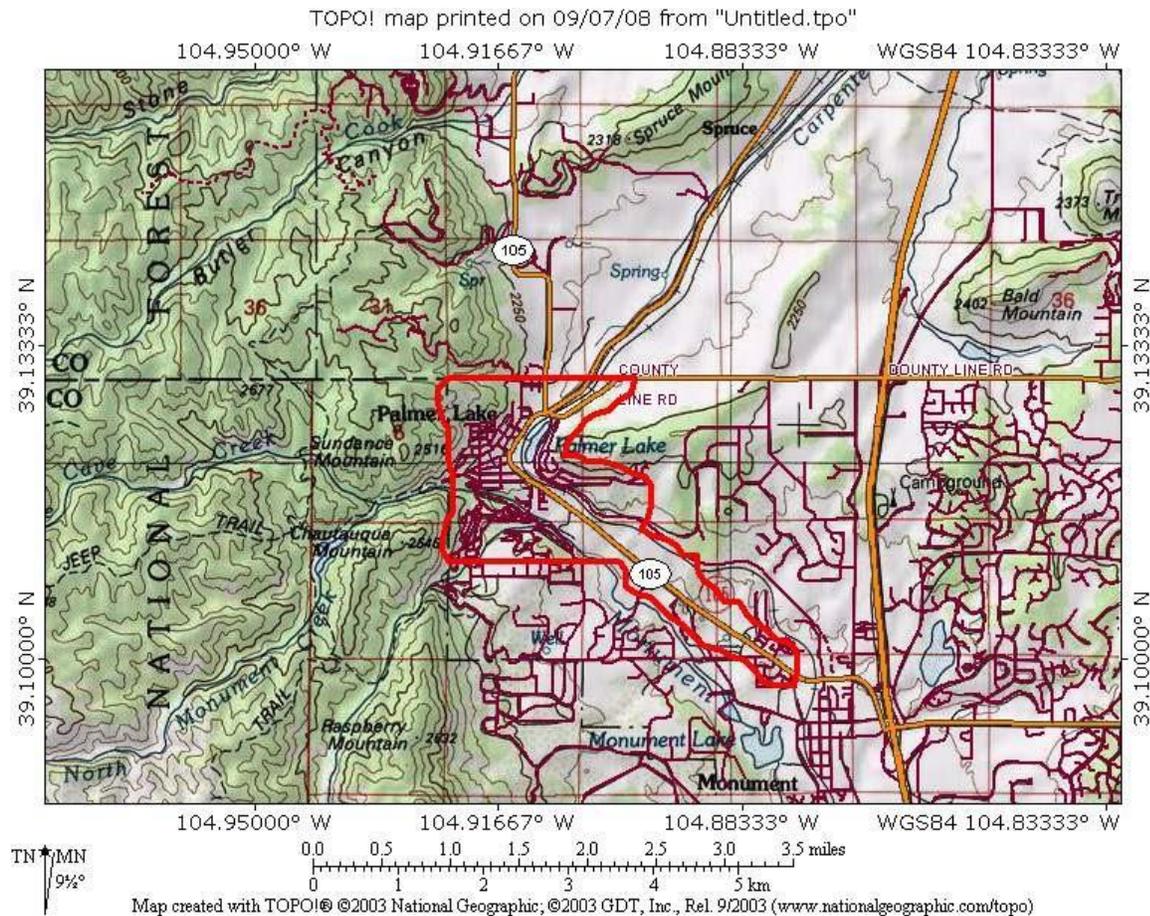
## Identified Risks

Palmer Lake is a wildland urban interface community with high density residential communities surrounded by large lot holdings. To the east, Palmer Lake rises to Ben Lomond Mountain. To the southeast, the community's lowest elevation is 6,940. Average elevation is approximately 7,000 feet, varying greatly from gentle slopes to areas over 100% slopes along the west side of Town. Limited

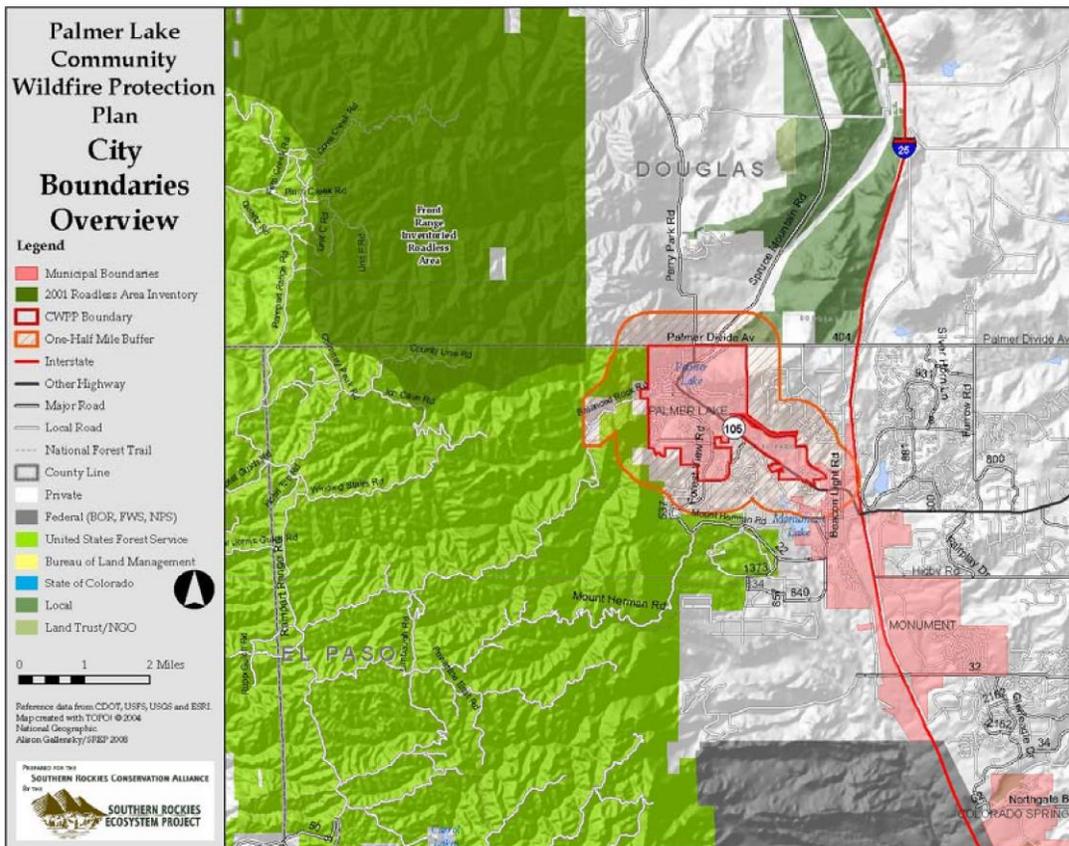
areas are considered accessible by forestry equipment. Vegetation consists of dense stands of Gamble oak, three-leaf sumac, Mountain Mahogany, Ponderosa pine, Douglas Fir, and prairie grasses. The area within the boundaries of Palmer Lake is predominantly historic timber and grazing lands as part of early ranching and logging in the region. The area was first visited by the Stephen Long expedition in 1820. Heavy usage is evident given the presence of old ranch trails and logging stumps. The fire regime for the area historically created a diverse mosaic of plant communities that may have burned on a ten-to-fifty-year cycle. Evidence of this mosaic can be seen in historic 1800's photos of the area. Wildfires have been suppressed over the past 120 years. Palmer Lake has grown steadily with in-fill growth continuing to take place.

The Town has a significant to extreme wildfire threat to the community from all lands of the United States Forest Service to the West, Douglas County Open Space to the North, and Unincorporated El Paso County. With this PLCWPP, care was taken to propose and provide mitigation within the Town to provide fuel breaks to lower the risk of a spreading catastrophic wildfire and to protect residents from potential wildfire intrusion from the various risk sections of the adjoining lands. Two main areas with varying degrees of mitigation were identified within the communities. Mitigation for these areas will be reviewed annually for scheduling with full completion to take from ten to twenty years, depending on availability of funds from multiple sources.

A wide variety of conservation, property mitigation, vegetation and services reference material can be found in these two links; [About - Wildfire Risk to Communities](#) and [Wildland Fire Risk Assessments \(arcgis.com\)](#)



## Vicinity Map



Town Boundaries

## Fire History

The Palmer Lake area is no stranger to wildfires and the need for wildfire prevention and protection. The proximity of Waldo Canyon Fire (2012, 18,247 acres), the Black Forest Fire (2013, 14,280 acres), and the Hayman Fire (2002, 138,000 acres) emphasized the fact that wildfires “do *happen here!*” The Fire Department and Town staff recognized the importance of developing a program to address the wildfire risk to the community. It began by investigating funding sources for fuel treatments, mitigation, protection, and development of a long-range plan for wildfire protection. Town of Palmer Lake is 1,984 acres.

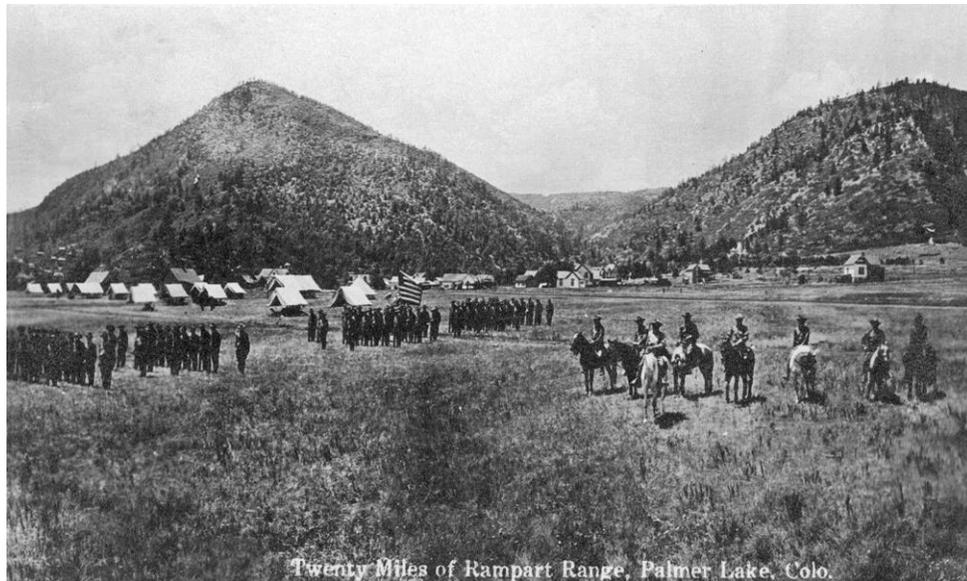
Over the past 120 years, Palmer Lake has avoided major wildfires. Small lightning and human caused fires are suppressed quickly. Evidence was found in the community in the form of fire scarred logging stumps. It is estimated low intensity ground fires have burned through the area with return intervals ranging from every 10 to 25 years. The remaining “stump record” indicates that pre-European ponderosa stands consisted of large, well-spaced trees, pruned up by regular fires. The existing forest is considered a “second growth” forest impacted by 120 years of wildfire suppression. This has resulted in stands of dense ponderosa pines prone to greater risk of high intensity crown fires.



Foothills west of Palmer Lake, 1872, Photo by W. H. Jackson, USGS



Town of Palmer Lake, 1871, Photo by W. H. Jackson, USGS



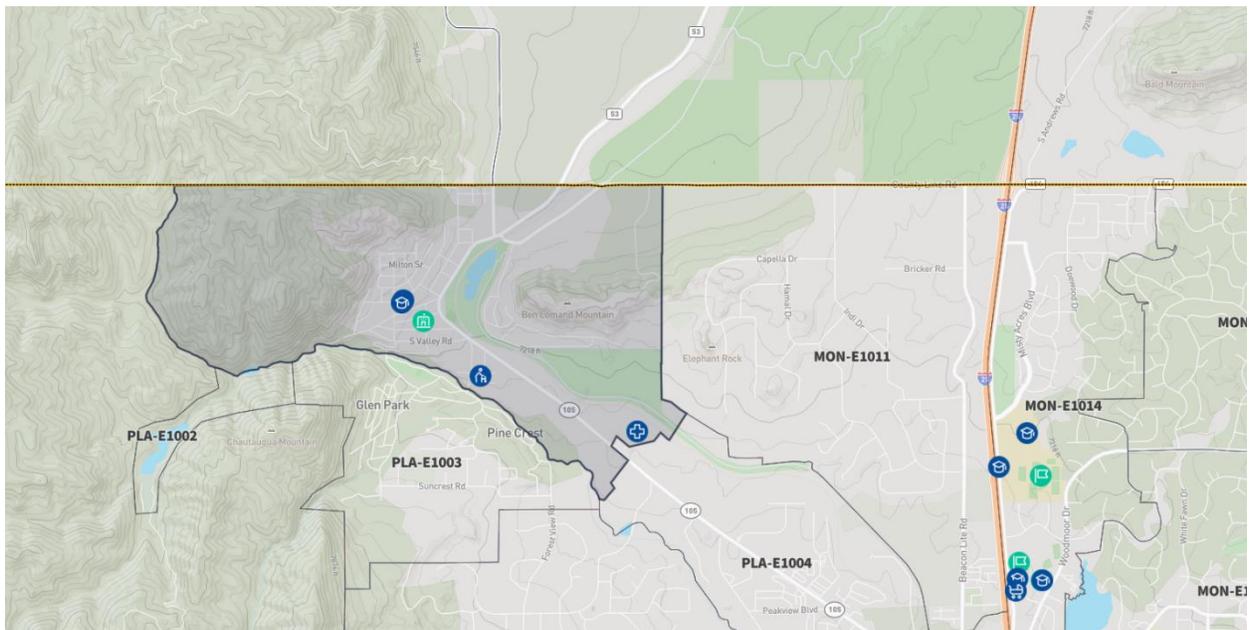
Twenty Miles of Rampart Range, Palmer Lake, Colo.  
Town of Palmer Lake, ca 1908, Photo Courtesy of Palmer Lake Museum

## Assets at Risk

### Wildland Urban Interface (WUI) Impact Areas

With the high potential of ground lightning ignition, railroad fires, and recreation/residential related fire starts, the forest and homes in Palmer Lake are currently at increased risk of loss by wildfires. It should be remembered that wildfires can also spread from the community into the surrounding areas.

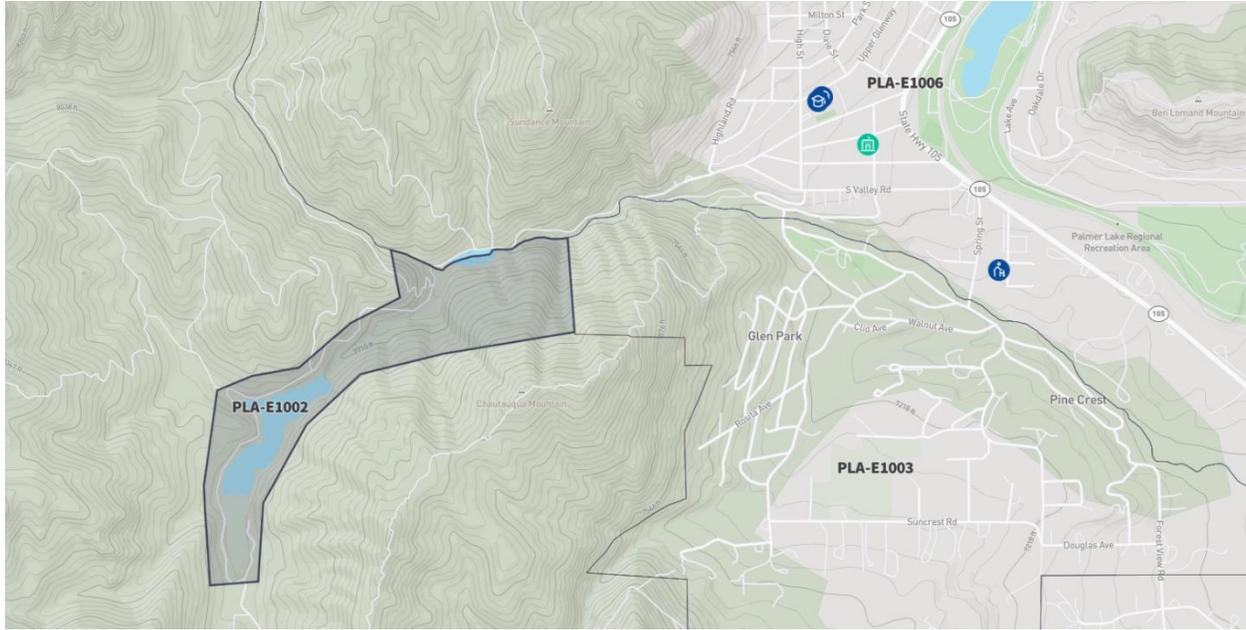
The WUI for Palmer Lake was set up after a meeting with local fire officials. Four zones were established to allow prioritization of treatment areas that may positively impact the community. These are shown in the following figures. WUI/PLCWPP Zones. These zones were set up to aid federal, state, local, county, and municipal agencies in targeting planning and funding for areas within one-half mile of wildland interface communities like Palmer Lake.



Town of Palmer Lake, Zone Haven, Zone PLA-1006, 1,558 Acres, 2023

#### Zone 1, PLA-E1006

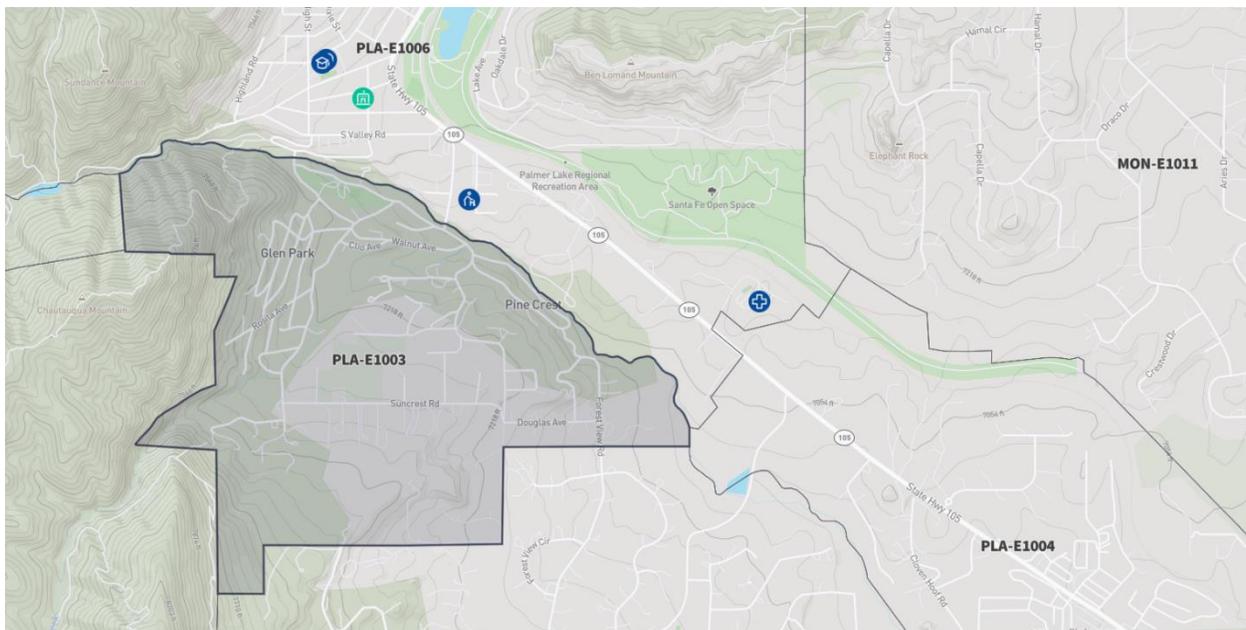
This area is the main part of town, including many historic structures. The topography is gentler and rolling. Fuels vary from open meadows to brush, and timber stands mixed with Gambel Oak. Lower density Ponderosa Pine stands were noted on the northwest half of the compartment. Housing and building density are high with many properties unable to create adequate home ignition zones. The highest priority within Zone 1 is along all roadways. This area consists of residential and light industrial uses. Ben Lomond Mountain is the major fuel component. Mountain pine beetles (MPB) are currently building to damaging levels on the mountain. MPB killed trees will continue to increase the volume of heavy fuels near homes.



Town of Palmer Lake, ZoneHaven, Zone PLA-1002, 106 Acres, 2023

Zone 2, PLA-E1002

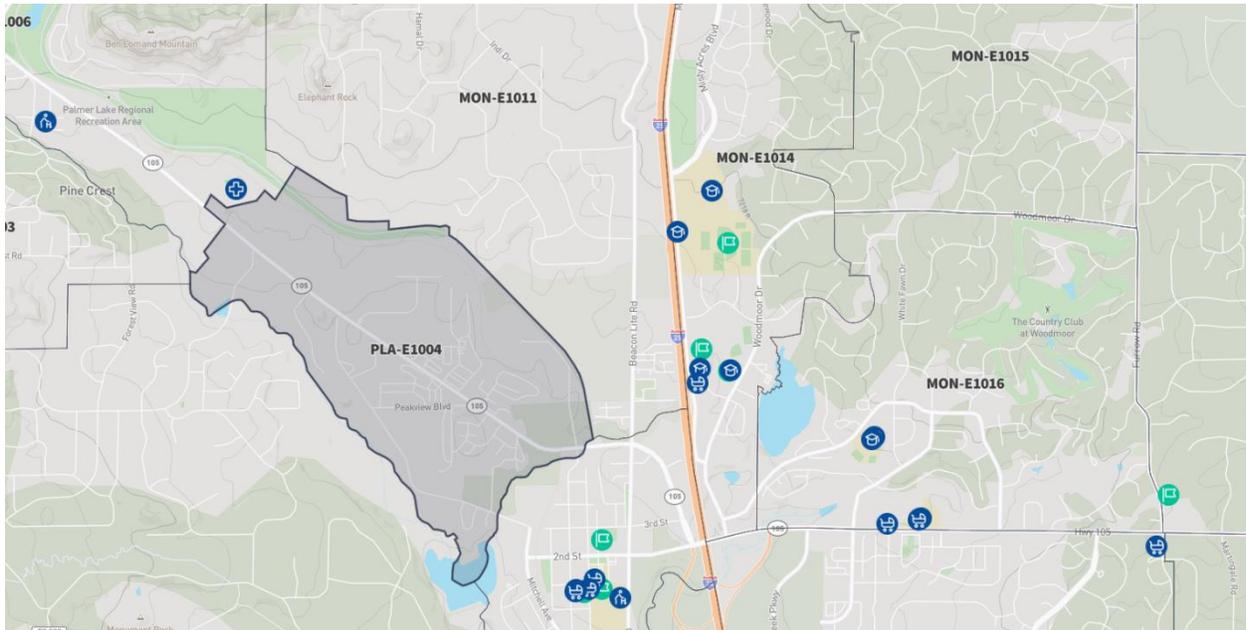
This area is the reservoir area and part of the town’s water supply network. Two reservoirs are in North Monument Creek. Both are surrounded by untreated national forest lands. A major wildfire in the upper reaches of the watershed will have a significant impact on water quality and life expectancy of the impoundment structures.



Town of Palmer Lake, ZoneHaven, Zone PLA-1003, 605 Acres, 2023

### Zone 3, PLA-E1003

This area is described as “The Glen”. Topography is rugged and steep in portions of the community. Homes are of moderate to high density. Numerous historic cabins are densely packed together with narrow, winding roadways. Road right-of-way treatments will be one of the highest priorities for the town. Lot sizes will also limit the ability of individual homeowners to provide their own defensible spaces.



Town of Palmer Lake, ZoneHaven, Zone PLA-E1004, 756 Acres, 2023

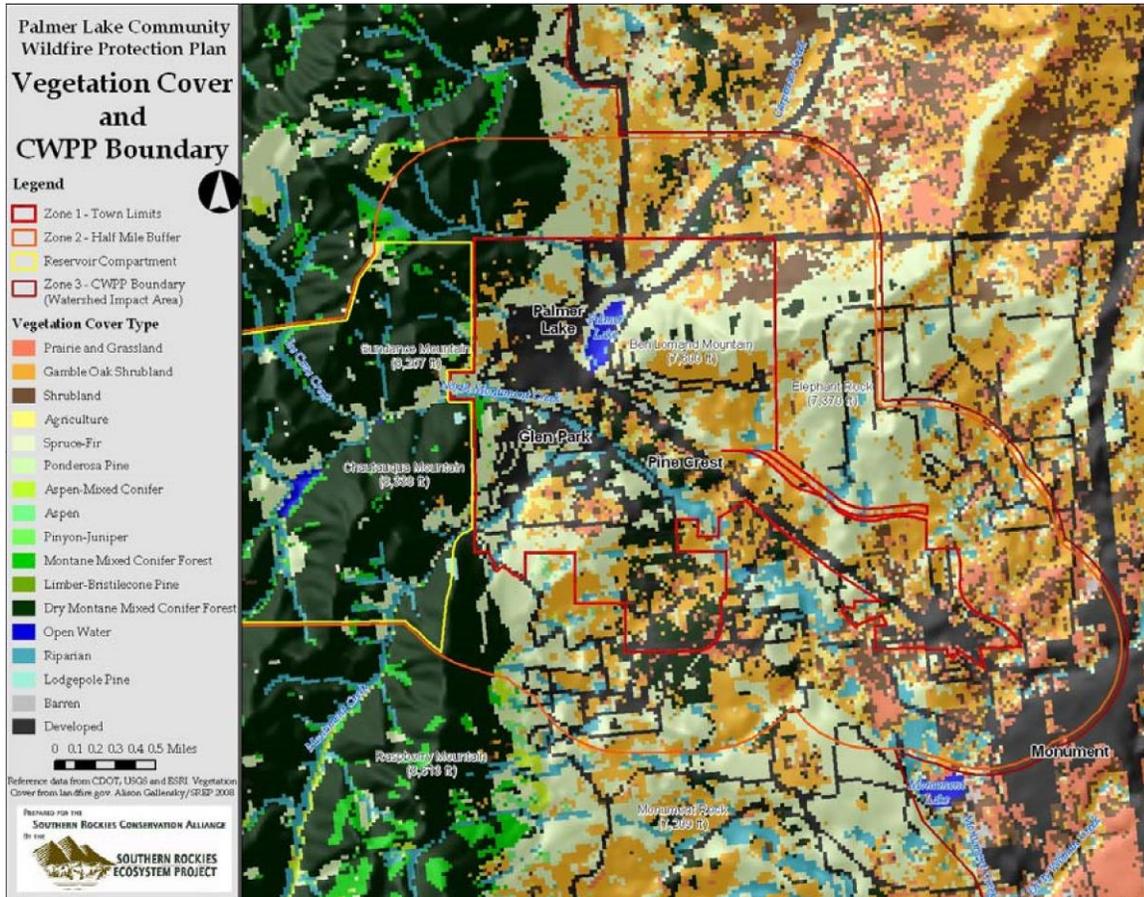
### Zone 4, PLA-E1004

This area consists of primarily rural properties and pockets of residential and commercial areas. All are concentrated along State Highway 105. The primary fuel type is meadow grasses. Mowing will be the primary need for protection of structures. Limited areas of Gambel Oak and scattered pines are present and can be treated at the time of further development expansion.

## Forest Health/Fire Fuels Class

This section of the PLCWPP addresses the identification and the prioritization of fuel mitigation treatments for high-risk wildfire hazards impacting the Town of Palmer Lake as well as a brief assessment of vegetation fuels currently within the proposed fuel treatment areas. The three main components affecting wildfire behavior are fuel, weather, and topography.

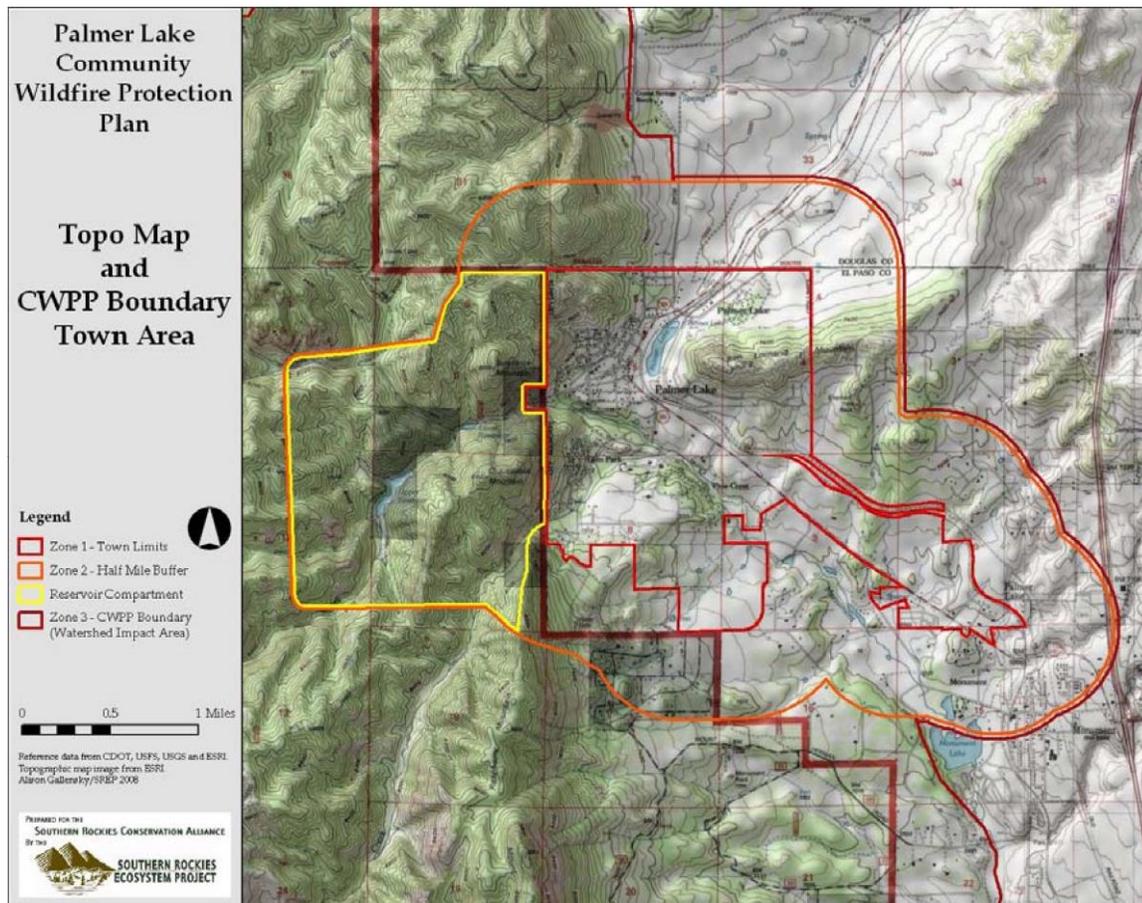
## Vegetation Mapping



Areas shown as dark gray contain the heaviest fuels; primarily conifer forests of Ponderosa Pine and Douglas Fir. North slopes tend to have a higher percentage of Douglas Fir, with south slopes covered by ponderosa pines. Gambel Oak (scrub oak or oak brush) are continuous in some areas of the town. The hillside above town (the Star) is a mix of Gambel Oak, Mountain Mahogany and other shrubs and occasional Rocky Mountain Juniper.

## Topography

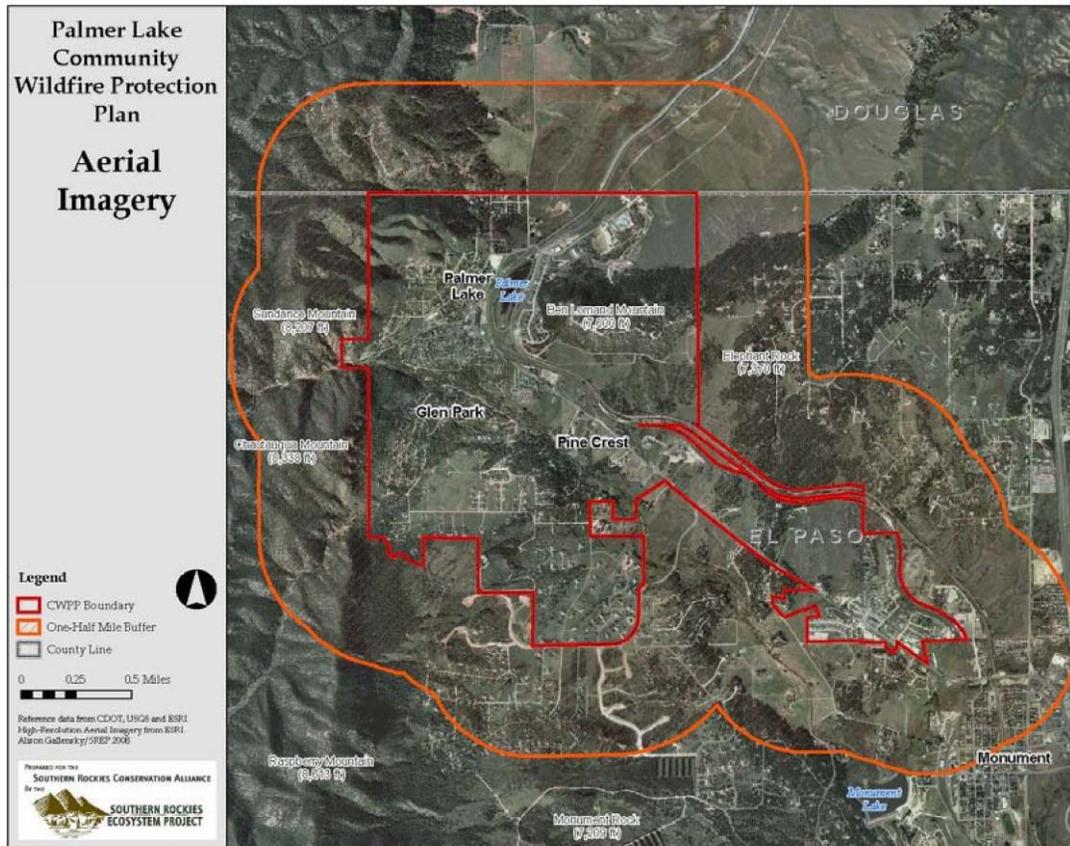
Much of the town is hilly or mountainous terrain. Topography has a major impact on fire behavior since fires tend to burn faster up hill.



**TOPOGRAPHY**

Slope and aspect will also affect fire behavior. Slopes are shown in Figure 12 and aspects in Figure 13. When slope is combined with aspect, fire behavior can be more erratic on warmer, drier southern exposures.

Slope will also have a major impact on treatment potential and costs. More economical mechanical treatments (mastication) are often limited to slopes less than 40 percent. If limited to hand treatments (chainsaw crews, slash dragging and chipping), costs can be two to three times the cost of mechanical treatment.



### Insect and Disease Prevention and Control

The area contains stands of ponderosa pines that will be susceptible to Mountain Pine Beetle (MPB) infestation. MPB is active in the area, although the activity seems to be confined to individual trees or small pockets of trees at this writing. Ben Lomond Mountain is currently experiencing the highest outbreak of MPB. The threat of increased activity is always present. Vigilance will be necessary on the part of town residents to regularly inspect trees on private lots and greenbelt areas for any signs of infestation. Large groups of dead trees can contribute to fuel loading in the community and should be removed in a timely manner to prevent spread. No general, area wide preventive spraying program is recommended currently for prevention of MPB. Should an outbreak occur in the area, homeowners should be advised to preventively spray mature pines. MPB information is available at [www.csfs.colostate.edu](http://www.csfs.colostate.edu).

Severe infections of Dwarf Mistletoe (DMT) have been found throughout the community. Mistletoe is a parasitic plant that infects pines, and results in the debilitation and slow death of the trees. Trees infected with the parasite can result in increased fire hazards. There are several strategies to control mistletoe infections, and advice from a professional forester should be sought if a landowner has mistletoe infected trees. DMT information is available at [www.csfs.colostate.edu](http://www.csfs.colostate.edu).

Spruce Budworm and Douglas Fir Tussock moth are now building to damaging levels in the Front Range Foothills. Spruce Budworm damage was noted as heavy in some areas of the district. If not controlled, trees will be weakened and susceptible to attack by Bark Beetles. This will also contribute to fuel loading.

Builders who remove trees for lot clearing and subsequent home construction should remove all lot clearing slash within six weeks of cutting to prevent use of fresh slash by Ips Engraver Beetles (Ips) as brood wood. Ips generally attack trees weakened by lightning strikes, root damage during construction or transplanting. Ips activity is currently heavy in the Palmer Divide area due to dry summer weather. Regular preventive spray applications to high value, stressed trees should be done until the stressing agent is eliminated. The most effective prevention for harmful insects is always a good program of forest management and thinning. Properly thinned trees will be less susceptible to insects, and thinned stands are more likely to survive a wildfire without serious damage.

Gambel Oak is prone to periodic outbreaks of defoliating insects. These outbreaks tend to be cyclical and do not generally cause oak loss. By the time damage is noted, the insects have completed their life cycles and spraying is ineffective.

## **Action Plan**

On the fifth year, at least three months prior to the Public Hearing for the approval of the Town's budget, the fire department will conduct a PLCWPP performance review to include both an overall plan evaluation of the PLCWPP for the past wildfire seasons as well as any proposed changes to the PLCWPP for the following five years. This schedule may be adjusted to allow conformance with the Town's budget cycle. The overall evaluation and recommended changes to the PLCWPP will be presented and addressed prior to the budget adoption meeting. Changes will be formally incorporated into the PLCWPP and furnished to all stakeholders by January of the following year. These changes will also be reflected in the Town's budgets for the following year.

### **Public Education**

The Public Education actions of this PLCWPP are planned to educate these newcomers as well as increase the knowledge of the current residential base in areas of family safety, Firewise strategies and construction and landscaping materials that are more resistant to ignition than wood or other commonly used building and landscaping products.

Topics for public education will vary depending on seasonal or wildfire risk conditions, input or requests from town residents and the availability of qualified instructors or presenters. The public education topical areas include but are not limited to:

- Structural construction materials or design considerations
- Home safety and home fire warning and fire suppression equipment
- Home risk self-assessment and structural wildfire risk reduction
- Residential fuel reduction strategies
- Landscaping for wildfire protection; xeriscaping
- Living adjacent to wildlands
- Home property fuel mitigation strategies and methods

### **Fuel Treatment Priorities**

The following is a list of priorities for fuel treatments within Palmer Lake:

1. Ingress/Egress Routes- Evacuation will be critical. Many roadways were found to be narrow and with significant fuel volumes along their routes.
2. Individual structures- No amount of fuel treatments around residential areas will be effective if homes are not defensible. All residents are responsible for the development of both defensible space and home ignition around their structures.
3. Potential Refuge Zones and Staging Areas- Evacuation may not always be possible. Zones of heavily treated fuels near roadways should be created to allow either residents or fire fighters time to make sound decisions. In some communities, this can be as simple as regular mowing. In others, heavy fuel volumes should be treated along roadways or key intersections. These pre-determined zones may also allow for more orderly evacuation and ingress of firefighting resources. Currently, the only area considered to be a possible refuge zone is Highway 105 right-of-way.
4. Areas with heavy concentrations of homes- Residential areas, subdivisions and enclaves of homes will need to treat areas beyond a normal home ignition zone, especially in areas with heavy fuels. Treatment goal will be to reduce crown fire potential, lower fire intensity such that limited manpower and resources can protect higher numbers of homes. Fire should be considered as a tool for protecting communities.
5. Areas with lower concentrations of homes- each residence will typically have sufficient area to complete both a defensible space and home ignition zone. The goal should be the same as Number 4 above and allow for fire use for protecting structures.
6. Reservoir watersheds- All lands around the two town owned reservoirs are owned by USFS. All areas of the watersheds should be treated to create buffers that will allow fires to burn at lower intensities and reduce potential runoff.
7. Rural areas/ranches- Owners will need to complete defensible space and ignition zones around all structures, including barns and outbuildings. A backup water supply is recommended.

Negotiations will be undertaken with private landowners adjacent to road rights of way areas as well as private lands in general to build fuel breaks with widths as specified by the Colorado State Forest in its [new fuelbreak pub.indd \(colostate.edu\)](#)

“Connections” that utilize natural areas with light or no fuel content (e.g., rock ridges, riparian, etc.) will be exploited wherever possible. These may also be fuel treatments that “connect” to more widespread thinned areas that have already had potential wildfire fuels mitigated. This type of fuel treatment is recommended in areas of heavy home development/structures to assist in home defense without destroying the environmental esthetics of the area.

Formal PLCWPP evaluation will be done in conjunction with PLFD personnel consisting of the following:

- 1) *Implementation*: Will track the PLCWPP project(s) as laid-out for the year and assess the success level of execution.
- 2) *Execution of project*: What issues occurred that either aided or impeded the project?

- 3) *Maintenance Needs Monitoring*: Evaluates, determines, and prioritizes areas that have been treated in the past, but need maintenance treatments to maintain effectiveness as originally intended.

### **Three Mitigation Strategies**

The PLCWPP discusses three strategies for effecting fuel mitigation for proposed projects. The application of a specific strategy will have to be based upon the ownership and developed or undeveloped aspects of the property proposed for mitigation. The basis of any strategies will be two-pronged: cost and legal.

#### Road Rights of Way

For properties on which Palmer Lake possesses rights of way, open spaces or on properties directly owned by an HOA, mitigation work may be funded by the town and/or the HOA. This funding will either come from direct funding or through State or Federal grant monies applied for and received by the town or others.

#### Private Homeowner and Landowner Properties

The town neither has auspices nor declaration of use of private properties within its boundaries. Therefore, fuel mitigation on private properties, although highly encouraged by the PLFD, is the responsibility of the property owner. However, the town can provide information and services to assist property owners in their mitigation efforts. This information and services will consist of references, Firewise planning details and planning. Occasional Firewise training classes. In private lands adjacent to a road right of way that has had fuel mitigation performed to form a fuel treatment, owners are encouraged to work with the town in “*feathering*” the mitigated fuel treatment into their private property to attain a wider fuel treatment as recommended by Colorado State Forest Service.

#### Undeveloped Publicly Owned Properties

The Town will work with NGOs, State and Federal agencies to treat lands adjacent to private land that pose a threat to structures and public safety. The Town may adopt ordinances to require property owners and land developers to *mitigate* fuels on high-risk wildfire properties to be developed. This *mitigation* is envisioned prior to allowing the building of structures to proceed. The town will assess potential in-fill areas that may be planned in these currently undeveloped but prime real estate areas.

### **Type of Mitigation Used for Projects**

The type of mitigation or method of fuel mitigation deemed appropriate for a specific area will be chosen when the area is assessed and base-lined prior to mitigation being performed, care will be closely given to assure environmental aesthetics of the immediate and surrounding area of mitigation projects.

### **Scheduling**

The scheduling for specific mitigation projects will be based on four factors and periodically reviewed by stakeholder agencies party to this Community Wildfire Protection Plan:

1. Hazard risk priority for the mitigation project.
2. Cost of the project and manner of funding to be used.

3. Environmental conditions required for mitigation, e.g., moisture levels, air quality management, endangered species, etc.
4. Timing of “*tie-in*” projects impacting terrain identified for fuel reduction, e.g., development activity, and USFS or adjacent private property projects.

ZoneHaven

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Glant Havenar  
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