

## Neighborhood Mitigation Plan: Forest Park

The Forest Park Neighborhood Mitigation Plan (NMP) is a cooperative effort between the Forest Park Homeowners Association (FPHA) and South Metro Fire Rescue (SMFR). It includes homes along Castle Pointe Circle because this neighborhood's primary ingress and egress route in through Forest Park. This NMP assesses the hazards and vulnerabilities of this neighborhood, identifies a path for the neighborhood to adapt to the potential for wildfires, improves safety for residents, reduces home-ignition risks from wildfires, and prioritizes projects to address those risks.

### **Neighborhood Description**

Forest Park is a neighborhood of 235 single-family homes and one commercial building along two loops formed by Forest Park Drive, Forest Ridge Circle, and Forest Trail Drive, as well as homes along Castlepointe Lane. Castle Pointe Circle, a loop of homes, stems from the southern end of Forest Park Drive. Homes were built in the late 1990s and first decade of the 2000s. All homes in the neighborhood have fire-resistant siding and roofing. Decking is a combination of wood and composite materials. The homes themselves represent the most significant values at risk in the neighborhood.

FPHA owns and operates a clubhouse and outdoor swimming pool at 6975 Forest Ridge Circle.

While there are no livestock in the neighborhood, many residents have pets.

In terms of governance, residents of Forest Park belong to the FPHA. This body has a Design Review Committee responsible for approving changes to landscaping within the neighborhood. Residents also are constituents of the City of Castle Pines and the Castle Pines North Metro District.

### **Infrastructure**

Infrastructure consists of the basic systems that support neighborhoods physically, socially, and economically. Infrastructure includes the following systems: water, roads, electricity, natural gas, and parks.

#### Water

- Homes in this neighborhood are connected to a municipal water system operated by the Castle Pines North Metro District (CPNMD). In 2022, Parker Water & Sanitation District will take over operations for water service and ownership of the CPNMD's assets including wells, a water treatment plant, distribution system, hydrants, water rights, and 1,500 acre-feet of storage at Reuter-Hess Reservoir.
- The area served currently by CPNMD and, in the future, by Parker Water & Sanitation District has fire hydrants that meet or exceed minimum flows for fire protection.

## Roads

- Roads in the neighborhood are paved and most are wide enough for fire apparatus. They are maintained by the City of Castle Pines.
- Many shared driveways are too narrow for fire apparatus.
- Each of 15 cul de sacs provides room for apparatus to stage and turn around.
- The neighborhood has a single route of ingress and egress: Forest Park Drive.
- Forest Park Drive provides the only access to the neighborhood from the north. An emergency gate that utilizes a Knox Box key may provide emergency access to Country Club Parkway if responders are able to open it. Both directions of Country Club Parkway lead to exits from The Village of Castle Pines to Happy Canyon Road or Lagae Road.

## Electricity

- Xcel Energy provides electrical service to the neighborhood. Electrical lines are buried.
- Several residents have solar panels on their homes.

## Natural Gas

- Xcel provides natural gas service to the neighborhood

This infrastructure is vulnerable to interruption and damage from wildfires. Mitigation recommendations for individual buildings or sites are available from SMFR. Email [ReducingRisk@southmetro.org](mailto:ReducingRisk@southmetro.org) to set an appointment. General mitigation recommendations are listed later in this plan.

## **Emergency Response**

The first-due firefighting resources respond from SMFR Station 36 (421 E. Castle Pines Parkway) and Station 39 (475 W. Happy Canyon Rd). SMFR has earned an ISO (Insurance Services Office) Public Protection Classification (PPC) rating of 1 for its entire service area. The rating, which is rare in the United States, represents the best fire protection according to insurance industry criteria and may provide a discount on homeowner's insurance policies to district residents.

Law enforcement and emergency management services are provided by the Douglas County Sheriff's Office, which is based in Castle Rock.

## **Ecological Context**

Topography is one of the key factors that influences wildfire behavior, largely because fire burns faster uphill than downhill. Most homes in this neighborhood are on a slope that could influence the behavior of low-, moderate-, and high-intensity wildfires.

The vegetation in this neighborhood is a combination of native and exotic tree, shrub, flower, and ground cover species. Unfortunately, many of the plants chosen for landscaping around homes and along Forest Park Drive can ignite quickly and produce significant radiant and convective heat. For example, junipers are nicknamed "little green gas cans" by firefighters. Each should be replaced with a fire-resistant ground cover or shrub.

Other plant species that are poor choices for wildfire-prone ecosystems such as that of Forest Park are piñon pine, Pfitzer, Mugho pine, Austrian pine, arborvitae, and Scotch pine. None of these species nor junipers should be within 30 feet of a structure.

## **Fire History**

Forest Park was built within a wildfire-prone ecosystem, the neighborhood has not experienced a large wildfire in the last ten years. Smaller wildfires have burned in other parts of the City of Castle Pines and to the south in The Village at Castle Pines.

This neighborhood was threatened by the Cherokee Ranch Fire in October 2003. That wildfire began to the west of the City of Castle Pines when high winds toppled a tree onto utility lines. The 1,000-acre wildfire burned eastward toward the city and stopped when a cold front brought lower temperatures and higher relative humidity to the region after sunset. Those conditions helped firefighters contain and extinguish the blaze.

## **Hazard Identification and Risk Reduction Recommendations**

Community risk reduction takes a village; it requires individual actions and collective action to be effective over a longer term. Wildfire hazard identification is based on the following fire behavior concepts:

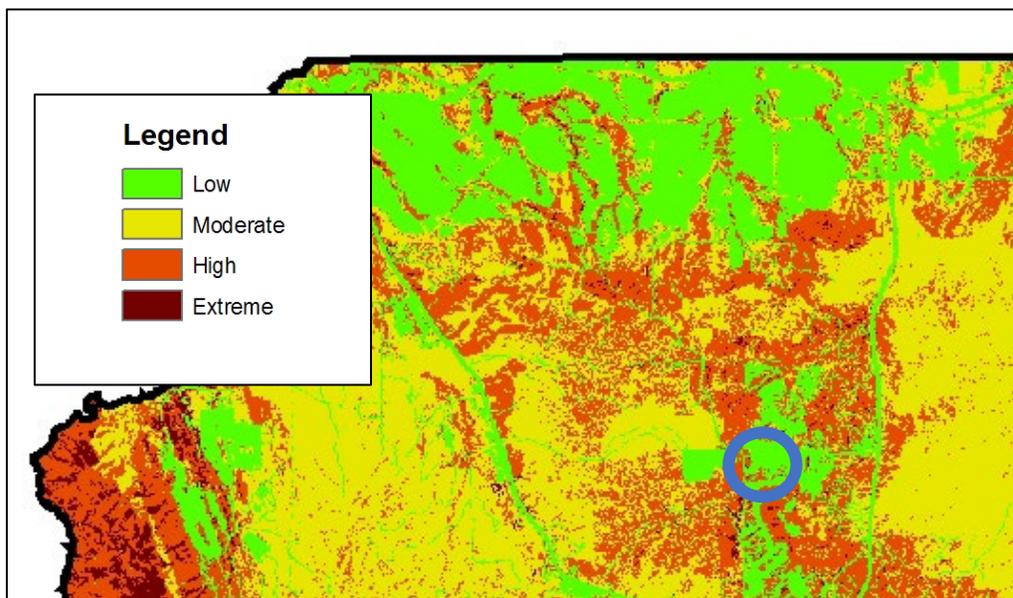
1. A given fuel (structure or vegetation) can produce a flame length 1 ½ times its height. Thus, a bush that is 12 inches tall can produce a flame length 18 inches in length; a tree that stands 12 feet tall can produce a flame 18 feet long. Shorter fuels produce shorter flames and release less heat.
2. Firefighters are unable to engage directly any flame length greater than four feet because of safety concerns. A direct attack places firefighters along the head or front of a wildfire where they create a handline—a path down to mineral soil—in front of the flames to stop its growth. When flames are longer than four feet, firefighters can use indirect attack techniques such as spraying water from further away or building a handline a distance away and burning out unburned fuels between their line and the fire.

Flames between four and eight feet in length can be attacked directly with bulldozers and air resources such as air tankers and helicopters. Flames longer than eight feet can be attacked directly by air resources alone.

3. Before a fuel can burn, it must absorb enough heat to cause the remaining water in it to evaporate. The dry part of the fuel then absorbs more heat that causes the solid fuel to break apart into its gaseous state. It's the gaseous state that actually burns. Thus, denser, wetter fuels typically resist ignition longer than lighter, drier fuels.
4. Most deciduous trees and shrubs resist fire because they are full of water. Gambel oak is an exception. The resin inside oak makes it flammable for most of the year.

5. As noted previously, plants that contain flammable resins, saps and oils are bad choices to have within 30 feet of homes. These “bad” plant species include Gambel oak, juniper, Pfitzer, cedar, arborvitae, Mugho pine, piñon pine, Austrian pine, and bristlecone pine, as well as decorative conifers such as Alberta or Norway spruce. They dry and vaporize quickly, which makes them vulnerable to igniting quickly. They also release significant heat.
6. Ponderosa pines are a fire-resistant tree species because they have thick bark and low sap content. They were prevalent when the area was developed because low-intensity wildfires limited other plants from competing for limited water, soil nutrients, sunlight, and space.
7. Most structures ignite from embers: burning chunks of fuels lofted above a fire by the rising column of heated air (a convective column). When those burning chunks of fuel, which can be pea- to grapefruit-sized, land on other flammable fuels such as dead needles, dead leaves, junipers, or combustible deck furniture, they can ignite spot fires. Embers typically find vulnerabilities in the nooks and crannies of buildings.
8. Structures also can ignite from heat radiating laterally from burning fuels such as junipers and other buildings.
9. Ladder fuels are low-hanging branches of trees. If they ignite, they allow flames to “climb” into tree canopies. By removing these ladder fuels, flames can stay on the ground where they typically are shorter and firefighters have an opportunity to extinguish them directly.

According to a hazard and risk analysis conducted by Douglas County for its 2010 Community Wildfire Protection Plan (CWPP), Forest Park faces a mix of wildfire risk under average conditions ranging from Low to High. Although that analysis occurred more than a decade ago, vegetation and weather patterns influencing wildfire risk have not changed significantly. The greatest difference is that more people live in and surrounding this neighborhood.



These risk ratings vary based on weather conditions: wildfire potential increases with higher temperatures, windy conditions, and lower relative humidity levels.

SMFR personnel conducted surveys of Forest Park in August and September 2021 to determine recommendations for FPHA regarding its open space and for individual property owners.

**Common Area:**

The FPHA is responsible for 23 parcels of open space. They are split into two categories: traditional open space and extended driveways.

<b>Open Space Name</b>	<b>Acres</b>	<b>Recommendation</b>
Tract A (Between Timbercrest Lane and Forest Ridge Circle)	4.700	Mow along fence lines, remove ladder fuels from mature conifers, thin Gambel oak for horizontal and vertical continuity.
Tract C (Adjacent to 7104 Forest Ridge Circle)	.190	Thin Gambel Oak within 30 feet of the adjacent home, remove ladder fuels from conifers.
Tract D (Adjacent to 7290 Forest Ridge Circle)	.134	Thin Gambel Oak within 30 feet of the adjacent home.
Tract D (Adjacent to 892 Parkcliff Lane)	.230	Remove ladder fuels from conifers.
Tract E (Adjacent to 7291 Timbercrest Lane)	.091	Maintain healthy vegetation.
Tract E (Land surrounding Pool and Poolhouse)	1.300	Remove ladder fuels from conifers, trim branches away from roofing and walls of the poolhouse.
Tract F (Between Pinefield Lane and Forest Ridge Circle)	.250	Remove ladder fuels from conifers.
Tract G (Along Forest Park Drive and extending west to Forest Trails Drive)	8.051	Remove ladder fuels from conifers, remove standing dead trees, thin Gambel oak for vertical and horizontal continuity within 30 feet of homes. Be careful to avoid disturbance where soils are fragile and prone to erosion onto Forest Trails Drive.
Tract H (Between Forest Trails Drive and Havenwood Drive)	5.771	Remove ladder fuels from conifers, remove standing dead trees, thin Gambel oak for vertical and horizontal continuity within 30 feet of homes.
Tract H (Adjacent to 1445 Forest Trails Drive)	1.650	Remove ladder fuels from conifers, remove standing dead trees, thin Gambel oak for vertical and

		horizontal continuity within 30 feet of homes.
Tract J (Adjacent to 7101 Parkwood Lane)	.527	Remove ladder fuels from conifers, remove standing dead trees, thin Gambel oak for vertical and horizontal continuity.
Tract K (Along Castlepointe Lane)	.330	Continue current maintenance.
Tract N (Between Forest Park Drive and Woodglen Place)	.265	Remove standing dead trees.
Tract N (Adjacent to 1278 Forest Trails Drive)	.140	Remove dead trees, remove ladder fuels from conifers.
Tract X (North of Castle Pointe Circle)	.430	Remove ladder fuels, maintain vibrant ecosystem.
Tract Y (Southern median along Forest Park Drive)	.076	Remove standing dead trees.
Tract Z (Northern median along Forest Park Drive)	.076	Remove standing dead trees.
<b>Total</b>	<b>24.211</b>	

The open space of Forest Park is an essential component of the neighborhood’s character. Mitigating the open space can be done to maintain the forested ecosystem functionally and aesthetically. One strategy for mitigation is to protect the conifer and Gambel oak canopies by removing ladders fuels—branches within six feet of the surface—and creating a buffer between surface wildfires and those canopy fuels. Treatment options include mechanical, manual, and animal (goat) means.

<b>Extended Driveway Parcels</b>	<b>Acres</b>
Tract AA	.041
Tract I	.067
Tract R	.097
Tract S	.054
Tract V (multiple driveways)	4.190
Tract X	.103
<b>Total</b>	<b>4.552</b>

The recommendation for these driveway parcels is to trim vegetation along the driveways to maintain clearance of 15-foot height and 12-foot width. Those dimensions provide minimum access for SMFR’s emergency apparatus.

**Private Property:**

This 2021 hazard assessment, which was conducted from the roadway, may help residents of Forest Park modify their homes and landscaping. The following section consists of recommendations for wildfire risk reduction. As recommendations, they will not be enforced by SMFR.

General Recommendations for all Residents

- Most ponderosa pines on private property have been limbed appropriately. Expand that attend to low-hanging limbs to other trees and taller shrubs.
- Remove dead pine needles and dead leaves from roofing, gutters, gutter screens, and along the base of walls. These piles of dead vegetation are easy fuel for embers.
- Post address numerals that are at least four inches tall and contrast with the background in all times of day and types of weather. Brass numerals can be difficult to see depending on lighting and backgrounds.
- Prune tree branches away from walls to maintain wall integrity.
- Prune tree branches within six feet above roofing.
- Add 1/8-inch mesh to vents to prevent embers from entering ductwork, attics, and eaves.
- Replace junipers and other flammable shrubs and groundcover with native wildfire-resistant species including the following options from the South Metro Fire Rescue “approved” vegetation list.

<b>SOUTH METRO FIRE RESCUE</b>	
<b>Fire-Resistant Groundcover List</b>	
<b>Common Name</b>	<b>Latin Name</b>
Creeping grape holly	<i>Mahonia repens</i>
Kinnikinnick	<i>Arctostaphylos uva-ursi</i>
Mat penstemon	<i>Penstemon caespitosus</i>
Mouse ear chickweed	<i>Cerastium strictum</i>
Northern bedstraw	<i>Galium boreale</i>
Pinemat manzanita	<i>Arctostaphylos nevadensis</i>
Rosy pussytoes	<i>Antennaria rosea</i>
Small-leaf pussytoes	<i>Antennaria parvifolia</i>

<b>Fire-Resistant Large Shrubs and Trees</b>	
<b>Common Name</b>	<b>Latin Name</b>
American wild plum	<i>Prunus americana</i>
Aspen	<i>Populus tremuloides</i>
Boulder raspberry, thimbleberry	<i>Rubus deliciosus</i>
Filbert, beaked hazelnut	<i>Corylus cornuta</i>
Hawthorn	<i>Crataegus spp.</i>
Mountain mahogany	<i>Cercocarpus ledifolius</i>
Peachleaf willow	<i>Salix amygdaloides</i>
Pin/fire/wild/red cherry	<i>Prunus pensylvanica</i>
Ponderosa pine	<i>Pinus ponderosa</i>
River birch	<i>Betula fontinalis</i>
Rocky Mountain maple	<i>Acer glabrum</i>
Saskatoon alder-leaf serviceberry	<i>Amelanchier alnifolia</i>
Silver buffaloberry	<i>Shepherdia argentea</i>

Tall ninebark	<i>Physocarpus opulifolius</i>
Thinleaf alder	<i>Alnus tenuifolia</i>
Utah serviceberry	<i>Amelanchier utahensis</i>
Wasatch maple	<i>Acer grandidentatum</i>
Western chokecherry	<i>Prunus virginiana melanocarpa</i>
Western mountain ash	<i>Sorbus scopulina</i>

Remember, if residents want to adjust their landscaping, they must submit a plan to the Design Review Committee as required by local covenants and Colorado Revised Statute 38-33.3-106.5 (1)(e). This state law, which supersedes covenants, allows homeowners to conduct mitigation on private property if modifications to landscaping are submitted to the appropriate committee or board in a written plan created in conjunction with the local fire district (SMFR) or Colorado State Forest Service. Such a review helps maintain the character of the neighborhood.

Additionally, the 2021 survey identified the following characteristics of the neighborhood that could impact emergency response for wildfires and other emergencies.

Castlegrove Place:

- 8 homes
- Clear vegetation from the fire hydrant to maintain a 3-foot radius of access.
- The shared driveway to 1245, 1247, and 1249 Castlegrove Place is narrow and lacks space for fire apparatus to turn around.

Castle Pointe Circle:

- 42 homes
- The shared driveway to 1281, 1285, and 1289 Castle Pointe Circle is narrow and lacks space for fire apparatus to turn around.
- The shared driveway to 1359, 1361, and 1363 Castle Pointe Circle is narrow and lacks space for fire apparatus to turn around.

Castlepointe Lane:

- 10 homes
- Collaborate with the golf course or FPHA to mitigate fuels in the open space to the west.
- Castlepointe Lane is a dead-end street at the bottom of a neighborhood with a singular access road. Evacuate early to avoid traffic congestion during an emergency.

Forest Ridge Circle:

- 44 homes
- The shared driveway to 7092 and 7094 is narrow and lacks space for fire apparatus to turn around.

Forest Trails Drive:

- 40 homes

- The southwestern section of this road is steep to match the topography. Wildfires burn faster as they ascend steeper slopes because they dry and heat fuels above the flame front. While homeowners can't change the topography, they can be more aware of its impact on fire behavior.
- The shared driveway to 1105, 1115, and 1119 Forest Trails Drive is narrow and lacks space for fire apparatus to turn around.

Glen Hunt Lane:

- 6 homes
- Clear vegetation from the fire hydrant to maintain a 3-foot radius of access.

Greenridge Lane:

- 23 homes
- Create a mow strip along fences but not along rock walls.
- Clear vegetation from the fire hydrant at 892 Greenridge Lane to maintain a 3-foot radius of access. The hydrant is not visible from the east.
- The road's steepness reveals steep topography. Wildfires burn faster as they ascend steeper slopes because they dry and heat fuels above the flame front. While homeowners can't change the topography, they can be more aware of its impact on fire behavior.
- The shared driveway to 906, 908, and 910 is narrow and lacks space for fire apparatus to turn around.

Greenway Lane:

- 7 homes
- The shared driveway to 949, 951, and 953 Greenway Lane is narrow and lacks space for fire apparatus to turn around.

Havenwood Drive:

- 14 homes
- The shared driveway to 7132 and 7117 Havenwood Drive is narrow and lacks space for fire apparatus to turn around.
- Most of these homes are on a slope above open space. Mitigate open space at least 100 feet below homes to protect forest canopy and prevent home ignitions in low- to moderate-intensity wildfires.

Havenwood Way:

- 8 homes
- The shared driveway to 1221, 1227, 1245, and 1253 is narrow and lacks space for fire apparatus to turn around.

Parkcliff Lane:

- 8 homes
- The shared driveway to 892 and 894 Parkcliff Lane is narrow and lacks space for fire apparatus to turn around.
- Maintain 15-foot tall and 12-foot wide clearance for driveways so that emergency apparatus can approach homes more safely.

Parkwood Lane:

- 8 homes
- The shared driveway to 7101 and 7107 Parkwood Lane is narrow and lacks space for fire apparatus to turn around.
- These homes are on a slope above open space. Mitigate open space at least 100 feet below homes to protect forest canopy and prevent home ignitions in low- to moderate-intensity wildfires.

Pinefield Lane:

- 7 homes
- The shared driveway to 987, 989, and 991 Pinefield Lane is narrow and lacks space for fire apparatus to turn around.

Timbercrest Drive:

- 12 homes
- Clear vegetation from the fire hydrant at 1082 Timbercrest Drive to maintain a 3-foot radius of access.
- The shared driveway to 1077, 1091, and 1098 Timbercrest Drive is narrow and lacks space for fire apparatus to turn around.

Timbercrest Lane:

- 16 homes
- The shared driveway to 7144 and 7156 Timbercrest Lane is narrow and lacks space for fire apparatus to turn around.
- Clear vegetation from the fire hydrant at 7285 Timbercrest Lane to maintain a 3-foot radius of access.

Timbercrest Way:

- 12 homes
- Clear vegetation from the fire hydrant at 7054 Timbercrest Way to maintain a 3-foot radius of access.

Woodglen Place:

- 7 homes
- The shared driveway to 7328 and 7332 Woodglen Place is narrow and lacks space for fire apparatus to turn around.

Woodgrove Court:

- 6 homes
- The shared driveway to 7334, 7337, and 7344 Woodgrove Court is narrow and lacks space for fire apparatus to turn around.
- The grove of Gambel oak along this cul de sac has been mitigated appropriately, thinning trunks and removing ladder fuels. Continue this work.

Woodmont Way:

- 9 homes

- The shared driveway to 1340, 1356, 1357, and 1377 Woodmont Way is narrow and lacks space for fire apparatus to turn around.

### **Zone of Influence:**

The area surrounding Forest Park also contributes to the neighborhood's wildfire risk. Mitigation within this "zone of influence" relies on partnerships and collaboration with other stakeholders to create mutually beneficial solutions to shared challenges.

- Northwest: The PineRidge neighborhood conducts mitigation in its open space as part of SMFR's Ready, Set, Go program.
- Forest Park is surrounded by fairways and other land managed by golf courses. The wildfire potential of manicured fairways is low, but surface and canopy fuels growing around the fairways have higher potential for igniting and spreading fire.

### **Evacuations**

It's essential that residents of Forest Park prepare for evacuations generated by wildfires or other emergencies. The goal of an evacuation is to move civilians safely and quickly out of the way of impending hazards, but poor preparation can result in confusion, injuries, and deaths.

SMFR utilizes messaging and materials from the national Ready, Set, Go campaign to empower residents of its fire district to evacuate safely. The complete guide is available at no cost at [www.southmetro.org](http://www.southmetro.org) and [www.wildlandfirersg.org](http://www.wildlandfirersg.org).

Residents should register for Douglas County's reverse emergency notification system called Code Red to receive emergency information such as pre-evacuation and evacuation notices. Register land lines and cell phones by following the links to the system at [dcsheriff.net](http://dcsheriff.net).

One way to prepare for an evacuation is to practice. Families should give themselves 30 minutes to assemble a go-kit, load their vehicle(s), and drive to their designated family meeting place. Families also can use that evacuation drill to practice their communications plan of notifying a family member or friend in a different zip code or region of their status and asking that person to contact other family members re receive inquiries from other family members.

## Risk Reduction Priorities

Based on this analysis, SMFR offers the following recommendations for Forest Park:

Priority	General Project	Timeline	Guidance
1	Replace flammable plants with wildfire-resistant species on private property.		Residents are encouraged to contact SMFR for a free, in-person home wildfire risk assessment to create a written plan as required by local and state regulations. Email <a href="mailto:Einar.Jensen@southmetro.org">Einar.Jensen@southmetro.org</a> to schedule an assessment.
2	Conduct mitigation in Open Space Tracts A, G, and both Hs.		See recommendation above.
3	Clear vegetation from around fire hydrants		Maintain a minimum 3-foot radius around hydrants clear of vegetation and other obstructions.
4	Prune branches along walls, gutters, and roofing of homes and the poolhouse.		Residents are encouraged to contact SMFR for a free, in-person home wildfire risk assessment to create a written plan as required by local and state regulations. Email <a href="mailto:Einar.Jensen@southmetro.org">Einar.Jensen@southmetro.org</a> to schedule an assessment.
5	Update how addresses are posted		Collaborate with SMFR to address this project. Numerals should contrast with backgrounds so that they can be read 24/7 regardless of weather.
6	Conduct an evacuation drill		Collaborate with SMFR and DCSO to practice evacuating the neighborhood.
7	Trim vegetation along extended, narrow driveways		15 feet tall, 12 feet wide

Additionally, SMFR recommends that FPHA hosts opportunities (in-person and/or virtual) to educate residents about wildfire risk and preparedness utilizing resources such as those from the Ready, Set, Go project and personnel from SMFR, Colorado State Forest Service, Douglas County, and/or other entities. These subject matter experts can

attend meetings and community events, contribute to newsletters and websites, and conduct property risk assessments when requested by residents.

SMFR recognizes that wildfire mitigation can be expensive. The following programs may assist homeowners or the FPHA with some of those costs:

- As individuals conduct wildfire mitigation on personal property, a percentage of expenses may be subtracted from state taxable income. The details are outlined in §39-22-104(4)(n), Colorado Revised Statutes and [www.taxcolorado.com](http://www.taxcolorado.com), but the quick version is that the mitigation applies to vegetation rather than structural changes. The total amount of the subtraction may not exceed \$2,500.
- The Douglas County Soil Conservation District may have grants or cost-sharing programs for mitigation projects. Check this website for information: <https://douglasconserves.org/grants/>
- The Colorado State Forest Service may have cost-reimbursement or similar programs to offset part of your expenses for mitigation. The Franktown District Office covers our area. Contact its knowledgeable personnel at [CSFS\\_Franktown@mail.colostate.edu](mailto:CSFS_Franktown@mail.colostate.edu) or 303-660-9625.
- The City of Castle Pines also is an essential partner. It may have funding to assist with grant matching, resources for cost-sharing, and personnel who can write letters of support for projects.

SMFR recommends that this neighborhood mitigation plan be updated regularly to track achievements and adjust priorities.