

Neighborhood Mitigation Plan: Castle Pines North II HOA

This Neighborhood Mitigation Plan (NMP) is a cooperative effort between the Castle Pines North II Homeowners Association, its five sub-associations, the City of Castle Pines, and South Metro Fire Rescue (SMFR). 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 and emergency responders, reduces home-ignition risks from wildfires, and prioritizes projects to address those risks.

Neighborhood Description

The Castle Pines North II Homeowners Association (CPN II HOA) differs from many other HOAs because its six sub-associations are located in different parts of the City of Castle Pines.

Bramble Ridge

The 80 single-family homes in this sub-association, which includes the patio homes (although those homes have a separate sub-association), are in a triangular area south of Buffalo Trail and west of Monarch Boulevard. It includes a clubhouse and swimming pool. Homes were built between 2001 and 2003.

Briar Cliff

This sub-association has 89 single-family homes east of Monarch Boulevard, south of Green Briar Boulevard, west of the Xcel Energy easement, and north of Happy Canyon Creek. Homes were constructed in the first decade of the 2000s.

Bristle Cone

This sub-association, which includes the patio homes (although those homes have a separate sub-association), is along the north side of West Castle Pines Parkway west of Timber Trail Elementary School. It has 113 single-family homes built in the 1990s.

Green Briar

This sub-association has 156 single-family homes east of Monarch Boulevard, south of Hiddenpointe Boulevard, west of the Xcel Energy easement, and north of Briar Cliff. Homes were constructed in the first decade of the 2000s.

Stone Croft

This sub-association of 92 single-family homes is west of Monarch Boulevard and east of fairways owned by The Ridge at Castle Pines North golf course.

Winter Berry

This sub-association has 154 single-family homes built in the first decade of the 2000s. It is located north of Buffalo Trail and west of Monarch Boulevard.

Homes have multiple materials for roofing, exterior siding, and decking: some are ignition-resistant, some are not.

In terms of property governance, residents belong to Castle Pines North II HOA as well as their sub-associations and, in the case of the Bristle Cone Patio Homes, a third sub-association. Each association has a design review or architectural review committee responsible for approving changes to landscaping and structures. Residents also are constituents of the City of Castle Pines and the Castle Pines North Metro District.

This NMP includes Timber Trail Elementary School, which is part of Douglas County School District, because of its location, vegetation on its campus, its role in the neighborhood as a hub for social interactions, and for its positive and negative contributions to wildfire hazards.

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 is scheduled to 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 wide enough for fire apparatus. They are maintained by the City of Castle Pines.
- Ingress and egress are limited for each of the sub-associations.

Electricity

- CORE provides electrical service to the neighborhood. Electrical lines are buried in the neighborhood.
- Several residents have solar panels on their homes.
- Xcel Energy maintains transmission lines east of the Briar Cliff sub-association.

Natural Gas

- Xcel Energy provides natural gas service to the neighborhood

Parks

- CPN II HOA operates a clubhouse, swimming pool, and related recreational infrastructure at 880 Brambleridge Lane. The property is 2.26 acres.
- Additional open space in the neighborhood is owned and maintained by the CPNMD.

- Emergency access to the open space east of Briar Cliff is available across from 8303 Briar Ridge Drive.

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 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 typically burns faster uphill than downhill. Castle Pines is on a plateau between Lone Tree and Castle Rock. As a result, its weather can be more extreme than in those adjacent communities. Stronger winds and more frequent lightning strikes add to the intrinsic hazards for this area.

Topography contributes directly to wildfire risk in Winter Berry, Bramble Ridge, and Briar Cliff. Homes built above slopes with native vegetation face higher risk from low-, moderate-, and high-intensity wildfires than other homes.

The vegetation in each of the included neighborhoods is a combination of native and exotic tree, shrub, flower, and ground cover species. Unfortunately, many of the plants chosen for landscaping around homes, along roads, and surrounding other buildings 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 are piñon pine, Pfitzer, cedars, Mugho pine, Austrian pine, arborvitae, and Scotch pine. None of these species nor junipers should be within 30 feet of a structure.

Fire History

The homes of CPN II HOA as well as the entire City of Castle Pines were built within a wildfire-prone ecosystem. Seven wildfires burned a total of nine tenths of an acre within the city boundaries between 2016 and 2020, but none were within this neighborhood.

Additionally, 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.

SMFR personnel conducted surveys of the neighborhood in November 2021 to determine recommendations for the neighborhood collectively and individual property owners. These surveys were done from public roadways and from within tracts of open space. Below are recommendations for property owners based on common hazards.

As recommendations, they will not be enforced by SMFR, but they will reduce the potential for ignitions and improve safety for both residents and firefighters. During a wildfire incident in which homes or other buildings are threatened, firefighters will prioritize structure protection based on what they deem defensible in light of current and expected fire behavior and weather conditions. Ideally, homeowners will conduct mitigation that allows their homes to withstand low- and moderate-intensity wildfires without firefighter intervention.

Private Property

- Address numerals on several houses are difficult to read from the road. Use numerals that are at least four inches tall and of a color that contrasts with the background. They need to be visible and legible throughout the day and, when a light is shined on them, at night. Having an easy-to-read address helps emergency responders as well as law enforcement, utility workers, and delivery people.
- Prune branches above roofing to create a six-foot tall window of clearance. Removing these branches will reduce the volume of leaves and needles that collect on roofing and in gutters, protect shingles from scraping, and protect the tree from any fire on the roof.
- Trim branches away from eaves and the exterior walls. Trimming these branches will maintain the integrity of those structural components and prevent flames from having a direct route to your home.
- Eliminate fuels under decking.
- 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.

- Add 1/8-inch mesh to vents to prevent embers from entering ductwork, attics, and eaves.
- Minimize vegetation growing along wood fences that connect to homes. Wood fencing can act like a fuse and lead flames to homes.
- Replace junipers and other flammable shrubs and groundcover within 30 feet of buildings with native wildfire-resistant species including the following options:

SOUTH METRO FIRE RESCUE	
Fire-Resistant Groundcover List	
Common Name	Latin Name
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>

Fire-Resistant Large Shrubs and Trees	
Common Name	Latin Name
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>

Residents can request a personalized free home wildfire risk assessment of their properties by emailing ReducingRisk@southmetro.org. These assessments typically last 20-30 minutes.

Open Space/Parks

Properties adjacent to open space face additional risks from the proximity of vegetation managed less often than that on adjacent private property. Reducing risk from these hazards will be easier when adjacent property owners collaborate and share responsibility. The impact of open space mitigation is leveraged with backyard mitigation and vice versa.

According to the Douglas County Assessor's Office, most open space in this neighborhood is owned by the CPNMD. The following recommendations from SMFR apply to these open space areas.

- Mow native grasses along the seven miles of fence lines. A mow strip at least six feet wide (the width of a typical commercial mower deck) will provide a speed bump as wildfires burn from taller grasses into mowed grasses, lowering flame intensity and reducing speed of spread. Mowing is not needed where the property line is marked by stone terracing.
- Cut back Gambel oak along fence lines to create a similar speed bump effect. The space width between remaining oak trees/shrubs and fence lines should be at least 1 ½ times the remaining oaks' height.
- Within the remaining oak groves, thin at least 20% of stems and trunks and remove ladder fuels (low-hanging branches) within six feet of the ground.
- Remove ladder fuels from coniferous trees to protect tree canopies from wildfire. Trim branches within six feet of the ground on mature pines and within three feet of the ground for mature spruces.

SMFR will provide specific prescriptions for each open space tract as requested by the land management entity.

Sub-Association Specific Attributes

Winter Berry:

- This sub-association has two road access points but both (at Monarch and at Buffalo Trail) are at the eastern end of Winter Berry. A wildfire burning from the east will close those evacuation routes and there are no escape routes to the west.
- The oak grove at the west end of Winter Ridge Lane poses a significant risk to homes downwind from embers and flame lengths.

Bramble Ridge:

- Open space at the west end of Bramblewood Drive has tall grasses, but a mow strip is present on the CPN II HOA side.

- Brambleridge Drive is significantly lower than Bramblewood Drive. The hill between homes is terraced and features plenty of fuel including wood fencing and coniferous trees.
- Can the swimming pool at The Village Club be used as a draft or dip site?

Green Briar:

- Mitigate vegetation in the CPNMD open space west and north of this sub-association to standards noted above including utilizing mow strips along fence lines.
- Mow strips along trails and fence lines are inconsistent.

Briar Cliff:

- Topography is a significant risk in this sub-association.
- The open space on the hill south of Briar Cliff Drive and Oak Briar Way has robust grasses, Gambel oak, and coniferous trees. Given its position adjacent to and below the neighborhood, mitigating this open space should be a priority.
- Other tracts of open space also need mitigation.
- Mow strips along trails and fence lines are inconsistent.

Stone Croft:

- Fairways to the west will provide a decent barrier against surface fires, but not against embers.
- Open space west and north of Stonedale Drive needs mitigation for its grass and Gambel oak populations.

Bristle Cone:

- Open space between Deer Clover Circle and West Castle Pines Parkway looks great. Low-hanging limbs have been removed from trees. Remove dead trees as needed.
- Open space at the east end of Deer Clover Way, however, needs treatment among its Gambel oak groves. Add a mow line along the Bristle Cone fence and the school district property fence.

Douglas County School District:

- Part of Timber Trail Elementary School's campus could be useful as an outdoor lab for studying different mitigation and landscaping techniques in grass and Gambel oak ecosystems.

Castle Pines North Metro District:

- As noted above, open space owned and maintained by CPNMD should be mitigated, prioritizing tracts below homes and along potential evacuation routes.

There are several options for treating Gambel oak including outright removal, top-kill with mastication and follow-up mowing/trimming new growth, removing ladder fuels, thinning a percentage of stems from groves, restricting the height of oak, and clumping oak into groves. This work can be performed mechanically, chemically, manually, or with goats.

Zone of Influence

The area surrounding this neighborhood also contributes to its wildfire risk. Mitigation within this “zone of influence” relies on partnerships and collaboration with other stakeholders such as the CPNMD and The Ridge at Castle Pines North Golf Course to create mutually beneficial solutions to shared challenges.

Infrastructure

- Maintain three feet of clearance around fire hydrants. Mow grasses during the growing season, trim or remove larger vegetation, and clear snow when necessary.
- Mitigation around utility infrastructure should emulate that of residential buildings or fire hydrants.
- Mitigate vegetation in open space and parks as noted above.
- Firefighting will be limited below electrical lines because smoke plumes can conduct electricity from the lines to firefighters and apparatus on the ground. Xcel recently removed much of the Gambel oak under its transmission lines, but grasses and some shrubs are growing in the right-of-way.

Evacuations

It’s essential that residents of this neighborhood 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 and www.wildlandfirersg.org. SMFR also can provide presentations on evacuation preparedness.

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.

One way to prepare for an evacuation is to practice. Families should give themselves 30 minutes to assemble a go-kit and load their vehicle(s). They also should practice driving to their designated family meeting place, preferably in a different zip code. 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 receive inquiries from other family members.

Risk Reduction Priorities

Based on this analysis, SMFR offers the following recommendations for Castle Pines North II HOA:

Priority	General Project	Timeline	Guidance
1	Conduct mitigation on private property based on recommendations above. Open space mitigation is more effective with private property mitigation	2021-2022	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 Einar.Jensen@southmetro.org to schedule an assessment.
2	Collaborate with the Castle Pines North Metro District to conduct mitigation on its property.		<ul style="list-style-type: none"> • Prioritized Tracts: <ol style="list-style-type: none"> 1. Tract A Castle Pines North #17a (Briar Cliff) 2. Tract B Castle Pines North #17a (Briar Cliff) 3. Tract L Castle Pines North #27 (Winter Berry) 4. Tr in SW ¼ NW ¼ 4-7-67 (Bristle Cone) • The City of Castle Pines is developing a contract for using goats to treat Gambel oak in 2022.
3	Conduct mitigation on CPN II open space.		The City of Castle Pines is developing a contract for using goats to treat Gambel oak in 2022.
4	Conduct an evacuation drill	2022	Collaborate with SMFR and DCSO to practice evacuating the neighborhood.
5	Partner with Timber Trail Elementary School to create and study mitigation demonstration plots.		
6	Provide multiple educational opportunities for large and small groups of residents.		See below

Additionally, SMFR recommends that these HOAs host 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.

Risk Reduction Resources

SMFR recognizes that wildfire mitigation can be expensive. The following programs may assist homeowners or the HOAs 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, 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 or 303-660-9625.
- The City of Castle Pines is an essential partner. In the future, it may have funding to assist with grant matching, resources for cost-sharing, and personnel who can write letters of support for projects.
- SMFR personnel are available to write letters of support for projects and provide prescriptions for open space mitigation.

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