

Neighborhood Mitigation Plan: Castle Pines North 1 HOA, HOA2, Canterbury Park HOA

This Neighborhood Mitigation Plan (NMP) is a cooperative effort between the Boards of Castle Pines North 1 HOA, HOA 2, Canterbury Park HOA, 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

For the purposes of this plan, these three homeowners' associations are considered a single neighborhood because of their proximity to one another, their shared access and egress routes, and their similar ecosystems. This neighborhood is south of West Castle Pines Parkway, east of the Forest Park neighborhood, west of Mira Vista Lane, and north of the Village at Castle Pines.

Most of Castle Pines North 1 HOA is east and north of Monarch Boulevard, but it includes 76 homes south of Monarch along Ingleton Drive, the eastern end of Shoreham Circle, and Kent Place. Home were built in the 1980s, 1990s, and 2000s. The single-family homes in HOA 2 are west of Monarch Boulevard and south of West Castle Pines Parkway. They were built in the 1980s, 1990s, and 2000s. Residents of Canterbury Park live in attached townhouses along Norfolk Place and Clarendon Loop, also west of Monarch and south of West Castle Pines Parkway. There are 96 homes in 28 buildings all constructed between 1999 and 2002. Homes are the most significant value at risk in the neighborhood.

Because homes were constructed over three decades, they were built to different code standards and have multiple materials for roofing, exterior siding, and decking: some are ignition-resistant, some are not.

In terms of property governance, residents of Castle Pines North 1 HOA, HOA 2, and Canterbury Park HOA belong to their individual associations. They also are represented by the Castle Pines North Master 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 Buffalo Ridge Elementary School, which is part of Douglas County School District, because of its location, 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). On January 3, 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 wide enough for fire apparatus. They are maintained by the City of Castle Pines.

Electricity

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

Natural Gas

- Xcel Energy provides natural gas service to the neighborhood

Parks

- CPN 1 HOA operates a clubhouse, swimming pool, basketball court, and park at 7233 Tenby Way. The land, which measures 4.33 acres, is known legally as Tract B Castle Pines North #4 Common Area.
- Greenland Park, which measures approximately two acres, is managed by CPN 1 HOA. The trails provide good access through this manicured open space.
- Additional open space in the neighborhood is maintained by one of the HOAs, the City of Castle Pines, or the CPNMD.

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. The topography in this neighborhood consists of steep slopes along Monarch Boulevard between West Castle Pines Parkway and Shoreham Drive and gentle slopes within residential areas. Homes built above slopes with native vegetation face a higher risk from low-, moderate-, and high-intensity wildfires than other homes.

Additionally, 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.

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, 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 such as that of Sunshine Acres 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

This neighborhood 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. The largest of those seven wildfires occurred near Elk Ridge Park and the American Academy campus on December 29, 2016. It burned three tenths of an acre.

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, but stopped when a cold front brought lower temperatures and higher relative humidity overnight, which helped firefighters contain 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. 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 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 October 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.
- Replace unrated wood-shake shingles with Class-A Fire-Resistant shingles. The roof is the most vulnerable part of a building in terms of igniting from embers.
- 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.
- 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, open space in this neighborhood is owned by multiple entities. The following recommendations from SMFR apply to these open space areas.

- Mow native grasses along fence lines. A mow strip at least six feet wide (the width of a typical commercial mower) will provide a speed bump as wildfires burn through taller 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 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.
- Thin the oak grove west of Wellington Place into smaller groves. Breaking the horizontal continuity of these oaks will protect each grove from wildfire and diseases.
- Thin oak groves between Mary Court and Kent Place to reduce the potential intensity of a wildfire ascending that slope, especially if pushed by dominant southwesterly winds.
- The oak grove immediately north of Castle Pines North 1 HOA's clubhouse could be used as a demonstration site to illustrate different techniques for mitigating Gambel oak. Its proximity to Buffalo Ridge Elementary School could make it viable as an outdoor laboratory for students.
- Part of Buffalo Ridge Elementary School's 8.42-acre campus also could be useful as an outdoor lab for studying different mitigation and landscaping techniques in grass ecosystems.
- For the 10.57 acres surrounding the buildings in Canterbury Park, mitigation should take the form of replacing highly flammable landscaping with wildfire-resistant vegetation from the lists above.

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

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 to create mutually beneficial solutions to shared challenges.

- North: West Castle Pines Parkway is an adequate fuel break for surface fires to the north, but embers from open space and residential areas to the north should be expected to cross that roadway under windy conditions. In the future, many of those residential areas also may have NMPs.
- East: Elk Ridge Park, a 10.56-acre park owned by the City of Castle Pines, and an unnamed grassy hillside measuring 6.59 acres form the neighborhood’s eastern boundary. The City of Castle Pines maintains a six-foot wide mow strip along the fence line at the recommendation of SMFR.
- South: Homes within the Village at Castle Pines mark the southern zone of influence. Embers from open space and residential areas should be expected under windy conditions. During the October 2021 survey, native grasses were growing unchecked on Village at Castle Pines land while they had been mowed on this neighborhood’s side of the fence.
- West: The land immediately west is part of The Ridge at Castle Pines North Golf Course and the Forest Park neighborhood. Embers from open space and residential areas should be expected to cross the golf course under windy conditions. Forest Park has an NMP.

Infrastructure

- Maintain three feet of clearance around both fire hydrants. Mow grasses during the growing season, trim or remove larger vegetation, and clear snow when necessary.
- Mitigation around water infrastructure should emulate that of residential buildings.
- Mitigate vegetation in parks as noted above.

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 1 HOA, HOA 2, Canterbury Park HOA:

Priority	General Project	Timeline	Guidance
1	Conduct mitigation on private property based on recommendations above.	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.		
3	Conduct mitigation on open space dominated by Gambel oak.		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.

4	Conduct mitigation on open space surrounding homes in Canterbury Park.		
5	Conduct an evacuation drill	2022	Collaborate with SMFR and DCSO to practice evacuating the neighborhood.
6	Partner with Buffalo Ridge Elementary School to create and study mitigation demonstration plots.		
7	Other potential projects requested by HOAs		

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.