

Neighborhood Mitigation Plan: TrailMark

This Neighborhood Mitigation Plan (NMP) is a cooperative effort between the TrailMark at Chatfield Homeowners Association (TMHOA), TrailMark Metro District (TMMD), Star Canyon Condominium Association, Star Canyon Homeowners Association, 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

This neighborhood, which was annexed by the City of Littleton, consists of 721 single-family homes, nine buildings of multi-family housing, one commercial childcare center, and a fire station west of Wadsworth Boulevard on both sides of West TrailMark Parkway. The neighborhood was constructed by Shea Homes in six phases.

- Filing 1: 176 single-family homes
- Filing 2: 179 single-family homes
- Filing 3: 106 single-family homes
- Filing 4: 184 single-family homes
- Filing 5: Eight single-family homes and one child-care business
- Star Canyon: 68 single-family patio homes and nine multi-family (condominium) buildings

Most buildings were constructed over the last twenty years. They have fire-resistant roofing and exterior siding, but not all decking is fire resistant. The homes themselves represent the most significant values at risk. There are no livestock in this suburban neighborhood.

TrailMark Learning Center is located at 9743 S Carr Way in Filing 5. It has wood siding and a fire-resistant roof.

South Metro Fire Rescue Station 19 is located at 8490 West TrailMark Parkway. It has fire-resistant roofing and siding.

Residents are a mix of ages. The TMMD estimated the neighborhood's peak daytime population at 3,015 based on three people per residential structure and one person per 350 square feet of commercial space.

In terms of property governance, residents belong to TMHOA. Residents are constituents of the City of Littleton and the TMMD.

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

- TrailMark's water supply comes from the City of Littleton's entitlement to the Denver Water Board's system.
- Although TMMD is responsible for providing water to the buildings of this neighborhood, it contracts with the Ken-Caryl Ranch Water and Sanitation District for water and sewage services.
- The neighborhood has 79 fire hydrants that meet or exceed minimum flows for fire protection.
- The neighborhood includes three standing bodies of water: Fairview Reservoir 1, Fairview Reservoir 2, and Pond G.
 - Fairview Reservoir 1: This reservoir stores water for downstream users. It is stocked for fishing and supports several populations of resident and migratory riparian birds throughout the year.
 - Fairview Reservoir 2: This pond, also known as the Beaver Pond, is a pond design to hold and slow stormwater runoff.
 - Pond G: This pond is a stormwater detention pond that drains to the Denver Botanic Gardens land to the north. It supports a population of grass carp to control vegetation growth.

Roads

- Although TMMD is responsible for constructing and maintaining roads in the neighborhood, it delegates those services to the City of Littleton.
- Each roadway within the neighborhood is paved.
- Roads within the Star Canyon filing are narrow. Parking along West Freiburg Drive further restricts road width and could interfere with civilian- and emergency-vehicle ingress and egress.
- Roads in Filings 1-5 are wide enough for two directions of traffic where one direction includes large emergency vehicles.
- There is only one egress route from this neighborhood. All evacuating traffic must use West TrailMark Parkway to reach Wadsworth Boulevard. Current and expected wildfire behavior will determine whether turning north or south upon leaving the neighborhood is appropriate.
- TMHOA is responsible for maintaining medians within and many sidewalks along West TrailMark Parkway.

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

Parks

- Although TMMD is responsible for constructing, operating, and maintaining parks in this neighborhood, it contracts with South Suburban Parks and Recreation District for most of those services.
- TMHOA and TMMD share responsibility for two parcels adjacent to Filing 1 called Pond A and Pond B. Neither parcel contains a pond.
- The City of Littleton is responsible for Hogback Hill Park.

Fire Station

- As noted above, South Metro Fire Rescue owns and operates Station 19 at 8490 West TrailMark Parkway.

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 19 (8490 West TrailMark Parkway) and Station 16 (8119 Blakeland Drive, Littleton, 80125). 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 is provided by the City of Littleton and Jefferson County Sheriff's Office (JCSO), which is based in Golden. Emergency management services are provided by JCSO.

Ecological Context

Topography is one of the key factors that influences wildfire behavior, largely because fire typically burns faster uphill than downhill. Topographical differences within TrailMark are minor, but the neighborhood does sit on a plateau that slopes downward to the north. It also is due east of the Hogback, the first ridge of foothills west of Wadsworth Boulevard. The Hogback influences winds, precipitation, and vegetation.

Although topographical differences are minor, homes built above slopes with native vegetation face a higher risk from wildfires than other homes.

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 roads 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 this one 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 was built within a wildfire-prone ecosystem. A small wildfire (less than one tenth of an acre) burned north of the neighborhood along Wadsworth Boulevard in 2020.

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 January 2022 to determine recommendations for the neighborhood collectively as well as for individual property owners. These surveys were done from public roadways and from within tracts of open space. Below are minimum recommendations for property owners based on common hazards.

As recommendations, they will not be enforced by SMFR. 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, property owners and residents will conduct mitigation that allows their homes to withstand low- and moderate-intensity wildfires without firefighter intervention. These recommendations are not considered adequate defense against high- or extreme-intensity wildfires; mitigation is ineffective during those types of incidents.

Private Property

- Address numerals are posted inconsistently throughout the neighborhood. They should be made of numerals at least four inches tall and of a color that contrasts

with the background 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 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.
- The risk of a grassfire entering the neighborhood is high. Mow a six-foot wide moat around foundations where grass is adjacent to a home. Maintain similar mow strips along backyard fence lines to create “speed bumps” for low- to moderate-intensity grassfires where the rate of spread and flame lengths can decrease momentarily. Mow strips are not designed to stop wildfires. They are designed to slow wildfire growth.
- 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. Embers may still enter those vents, but they shouldn’t hold enough heat to threaten the home.
- Wood fencing can act like a fuse and lead flames to homes. Minimize vegetation growing along wood fences that connect to buildings. Consider replacing wood posts and slats with composite materials that resist ignition.
- Prune vegetation around utility boxes, pumping infrastructure, and fire hydrants.
- 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 the adjacent property owner collaborates and shares responsibility. The impact of open space mitigation is leveraged with backyard mitigation and vice versa.

Open space in the TrailMark neighborhood, which totals 136.58 acres, is owned by five different entities. The following tables prioritize mitigation projects for each entity.

City of Littleton

Priority	Name (Jeffco Parcel ID Number)	Size in Acres
1	Hogback Hill Park (69-103-01-019)	12.15
2	Pond A (69-104-01-002)	2.71
3	Pond B (69-104-01-020)	1.09
4	East of Station 19 (69-104-07-035)	1.12
	Total Acreage	17.07

Shea Homes Limited Partnership

Priority	Name (Jeffco Parcel ID Number)	Size in Acres
1	No Name (69-104-10-011)	7.68
	Total Acreage	7.68

South Suburban Park & Recreation District

Priority	Name (Jeffco Parcel ID Number)	Size in Acres
1	West of Pond G (69-103-01-018)	35.18
2	No Name (69-103-02-001)	14.12
3	Fairview Reservoir 2 (69-103-03-001)	7.79
4	No Name (69-102-04-017)	4.37
5	No Name (69-103-16-003)	2.54
6	WSW Border (69-103-16-020)	2.61
7	No Name (69-103-16-001)	1.52
8	TrailMark Park (69-104-07-033)	26.39

9	NW Corner of TrailMark Park (69-104-07-003)	0.76
10	No Name (69-103-25-001)	0.79
11	No Name (69-102-01-083)	1.22
12	No Name (69-102-01-029)	0.82
13	East of Pond G (69-103-01-003)	6.53
14	No Name (69-104-10-023)	1.00
	Total Acreage	105.64

Star Canyon Condominium Association

Priority	Name (Jeffco Parcel ID Number)	Size in Acres
1	No Name (69-103-16-151)	2.42
2	No Name (69-103-16-168)	0.90
	Total Acreage	3.32

Star Canyon Homeowners Association

Priority	Name (Jeffco Parcel ID Number)	Size in Acres
1	No Name (69-103-16-087)	2.27
2	No Name (69-103-16-057)	0.60
	Total Acreage	2.87

The following minimum recommendations from SMFR apply to these open space areas.

- Mow native grasses along backyard property lines, neighborhood fencelines, roadways, and trails. A mow strip at least six feet wide (the width of a typical commercial mower deck) will provide a speed bump as low- or moderate-intensity wildfires burn from taller grasses into mowed grasses, lowering flame intensity and reducing speed of spread.
- Remove downed cottonwood branches (those that haven't started decomposing) in riparian areas. Cottonwood resists ignition, but it tends to smolder after igniting.

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.

According to the Jefferson County Assessor’s Office, open space surrounding this neighborhood is managed by two entities: Denver Botanic Gardens operates its Chatfield campus to the northeast of TrailMark and Jefferson County Open Space manages the Hildebrand Ranch Park along each of the other neighborhood boundaries. Mow strips along property boundaries can make a difference against the spread of low- and moderate-intensity wildfires.

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 such as electrical boxes and pump stations should emulate that of residential buildings or fire hydrants.

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.

TrailMark has a single ingress and egress route: West TrailMark Parkway. It is the only route for residents to evacuate from the neighborhood and for emergency vehicles to enter the neighborhood. Therefore, evacuating residents will need to combine kindness with speed to evacuate safely and quickly.

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 risk reduction personnel can provide presentations on evacuation preparedness.

Residents should register for Jefferson 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 <https://public.coderedweb.com/CNE/en-US/655AC5D55998>.

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.

Risk Reduction Priorities

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

Priority	General Project	Timeline	Guidance
1	Conduct mitigation on open space parcels.	2022	See above
2	Conduct mitigation on private property based on recommendations above. Open space mitigation is more effective with private property mitigation	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.
3	Provide multiple educational opportunities for large and small groups of residents.	2022	See below
4	Conduct an evacuation drill	2022	Collaborate with SMFR and JCSO to practice evacuating the neighborhood.

SMFR recommends that TMHOA, TMMD, Star Canyon Condominium Association, and Star Canyon Homeowners Association 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, Jefferson 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 Jefferson Conservation District may have grants or cost-sharing programs for mitigation projects. Check this website for information: <https://www.jeffersoncd.com/>.
- The Colorado State Forest Service may have cost-reimbursement or similar programs to offset part of your expenses for mitigation. The Golden District Office covers TrailMark. Contact its knowledgeable personnel at <https://csfs.colostate.edu/golden/>, CSFS_Golden@mail.colostate.edu, or 303-279-9757.
- The City of Littleton is an essential partner. It has several grant programs that could be used for wildfire mitigation and neighborhood resilience. Visit <https://www.littletongov.org/business-resources/grants-incentives> for information.
- SMFR personnel are available to write letters of support for projects.

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