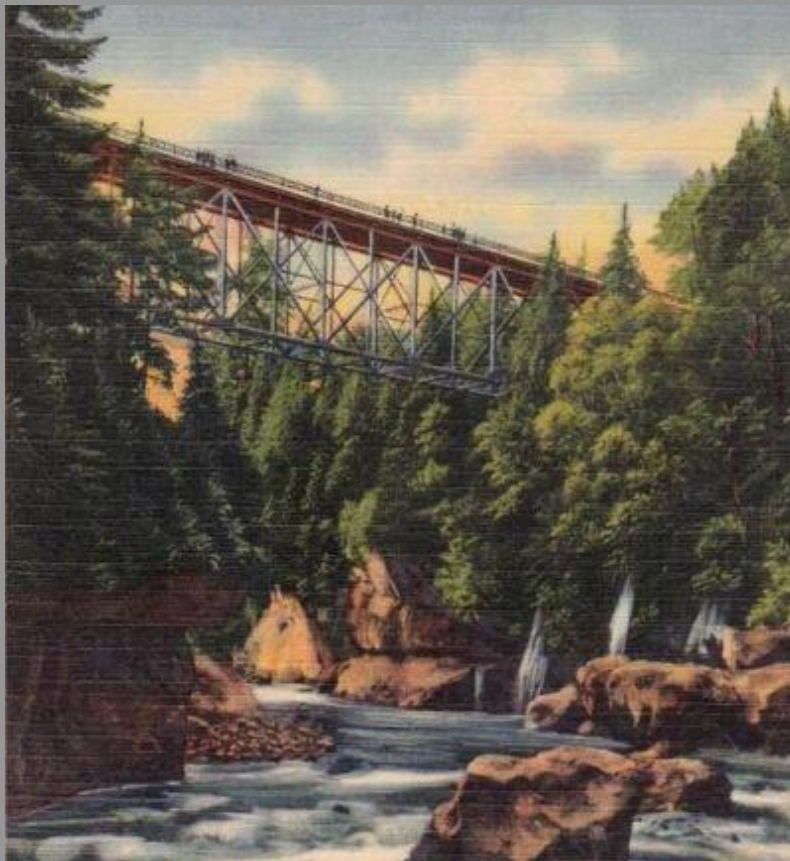


Foothills

(West Green River Gorge)

COMMUNITY WILDFIRE PROTECTION PLAN



Prepared by **Madden & McNamara**

with assistance from:

King County Department of Natural Resources and Parks

Washington State Department of Natural Resources

Mountain View Fire and Rescue (King County Fire District 44)

Acknowledgements and Approvals

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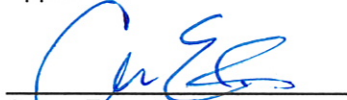
with assistance from:

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-Washington State Department of Natural Resources

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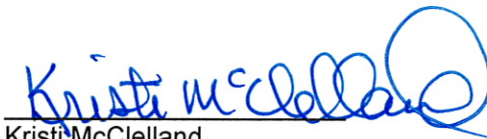


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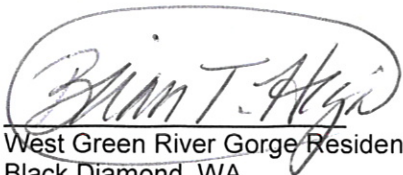


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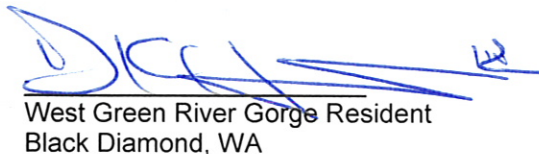
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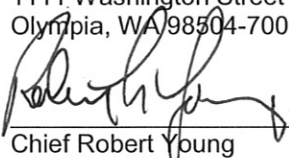
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Chapter 1

Firewise, Dollar and Sense Smart

About Firewise

During the past hundred years, America's population has nearly tripled. Much of this growth has occurred in traditionally natural areas such as forests and grasslands. These areas are all subject to the natural process of wildfire. Wildland fires can be difficult to control. As a result, in places where development has encroached into natural areas (dubbed the *wildland/urban interface or WUI*) property, lives and natural resources are all at risk from wildfire.

Following the catastrophic fire season of 1985, government representatives met to discuss the increasing trend of wind-driven fires in populated areas. They formed the National Wildland/Urban Interface Fire Program. In 1992, the program's advisory group began to use the term *Firewise* to describe being knowledgeable and prepared for wildfire in residential or urban settings.

In 1996 a Firewise Web site (www.firewise.org) was launched. It was followed by national and regional workshops, public education efforts, and a community recognition project. Today the Firewise program is viewed as a successful example of partnering among communities, homeowners, private industry, tribes, and public agencies and officials to develop and implement local solutions for wildfire preparedness – before a fire starts.

Firewise Fundamentals

Wildland fires are a natural part of the environment. Despite the best efforts of government agencies, they will occur. The Firewise vision is that with adequate planning and cooperation among varying interests, wildfires can occur without disastrous loss of life, property, and resources.

The best approach to wildfire preparedness involves utilizing the wide range of Firewise practices. The Firewise program offers a series of practical steps (such as landscaping, home construction and design, and community planning) that individuals and communities can take to reduce their vulnerability to wildfire.

Firewise doesn't mean cutting down all of the surrounding trees and creating a sterile environment to prevent a wildfire from spreading. People want to live close to nature for a reason, and aesthetics is a cornerstone of the Firewise program.

Examples of Firewise techniques for property owners include creating a defensible space around residential structures by thinning trees and brush, choosing fire-resistant plants, selecting ignition-resistant building materials, positioning structures away from slopes, and working with firefighters to develop emergency plans.

It's important to understand that Firewise is a voluntary program. Firewise offers proven, common-sense ways of reducing the risks of wildfire. It is ultimately up to community members whether they want to put these practices in place. It is also important to recognize all of the Firewise practices don't necessarily need to be implemented at once. A single practice reduces fire risk, and other practices can be added over time if desired. Relatively small investments of time and effort can produce great rewards when it comes to wildfire safety.

Community members can participate in Firewise Communities/USA. This program recognizes communities for working together to protect residents and property from fire in the wildland/urban interface. To receive Firewise Communities/USA recognition, communities must create and implement a local plan with cooperative assistance from state forestry agencies and local fire staff. In addition, communities are required to continue regular maintenance and education to retain recognition status. (The steps for gaining recognition are laid out in this plan.)

Benefits

Applying Firewise practices have a number of benefits, including:

- Saving homeowner lives during a wildfire
- Increasing firefighter safety by reducing risks
- Saving homes and possessions from damage or destruction
- Preserving community aesthetics (both before and after a fire)

To Learn More

The Firewise Web site (www.firewise.org) provides homeowners and agency staff with educational information about wildland/urban interface fires. The interactive site details how to mitigate wildfire risks at the homeowner and community levels. You can view streaming videos, download documents, browse an extensive list of helpful links, and access a searchable library of national, state, and local documents on a wide range of wildfire safety issues.

Chapter 2

Wildland Fire Behavior Basics

As a homeowner, if you want to reduce the risks of wildfire, you need to know a little about how fire behaves. This chapter presents the basics and tells you what you need to know about wildland fire behavior.

Understanding the Fire Triangle

To begin with, three components are required for a fire to start and keep burning.

- Heat
- Fuel
- Oxygen

These components form what is called the *fire triangle* (as shown in Figure 2-1).

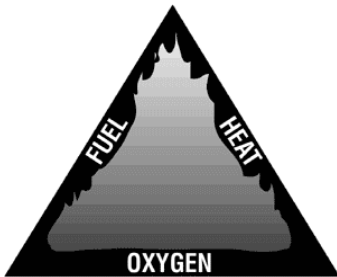


Figure 2-1: The fire triangle consists of heat, fuel and oxygen.

When there's not enough heat generated, when the fuel is exhausted, removed, or isolated, or when the oxygen supply is decreased, then a side of the triangle is broken and the fire goes out. Firefighters try to manage one or more of these three elements to control a fire.

Zeroing In On Heat

The heat part of the fire triangle is very critical. Some form of heat source is required to ignite a fire (lightning, matches, cigarette butt, fireworks, etc.). Heat is also needed to keep the fire going and cause it to spread.

Fire is constantly producing heat and the transfer of heat to the surrounding environment is what makes a fire spread. Heat removes the moisture from surrounding combustible materials (grasses, trees, wood, paper, etc.) making it more prone to burn - the dryer the fuel, the more combustible it becomes.

When it comes to fire, heat can be transferred three ways:

- **Convection** is heat transfer through the air, such as when hot air rises up through a chimney. Convection air currents can preheat leaves and branches carrying a ground fire upwards into a tree or shrub.
- **Radiation** transmits heat by the proximity to flame. Radiation accounts for most of the preheating of fuels surrounding a fire. The temperature of these fuels can sometimes grow so high that the fuels ignite before they even come in contact with the flames, thus spreading the fire.
- **Conduction** is direct transfer of heat from one fuel source to the next; such as when a stove burner heats a pan and its contents. Conduction allows the heat to be transferred inside and throughout the fuel, rather than only heating the surface. Conduction is usually not the primary mechanism of heat transfer in a wildfire since wood is a poor heat conductor.

How and how quickly heat is transferred plays a large role in wildland fire behavior. Each of the three heat transfer methods can cause a fire to behave differently, depending on the fuel, wind speed, and slope of the terrain.

Focusing On Fuel

The fuel side of the fire triangle refers anything that can burn. Fuel types include:

- Living vegetation
- Dead vegetation (duff, twigs, needles, standing dead snags, leaves, and moss)
- Organic subsurface material (peat and coal)
- Combustible human-made materials and structures

Fine fuels (grasses, leaves, pine needles) ignite more easily and spread faster with higher intensities than coarser fuels (tree trunks, branches, logs). Generally, the more fuel there is and the more continuous it is, the faster the fire spreads and the higher the intensities.

Several other factors determine how a fuel will burn, including:

- **Moisture content** Determines how easily a fuel will burn. For example live trees usually contain a great deal of moisture and are more difficult to combust while dead logs burn easier because they contain very little moisture. Before a wet fuel can burn, the moisture must be converted to vapor through the heating process. The greater the moisture content, the higher the heat temperatures required to dry the fuel. The presence of moist fuel can affect the rate and direction that a wildland fire spreads. High moisture content slows the burning process since heat from the fire must first expel moisture.
- **Size and shape** in part determine a fuel's moisture content. Lighter fuels (often called *fine fuels*) such as grasses, leaves, and needles quickly expel moisture, and burn rapidly. Heavier fuels, such as tree branches, logs, and trunks, take longer to heat up and ignite. In areas of light fuel, the temperature required for ignition is lower than in areas of heavier fuel. The oxygen surrounds lighter fuels and allows the fuel to burn with greater intensity, quickly exhausting the fuel supply.

- **Quantity** - How much combustible fuel there is in a given area is known as known as *fuel loading*. Fuels may be arranged in a uniform pattern and distributed continuously across the ground, allowing a wildland fire to travel uninterrupted. Or, the fuel may be distributed unevenly in a patchy network, forcing the fire to find ways around rocks and other barriers. .
- **Vertical arrangement** - Whether fuels are positioned high or low is another important factor in wildfires. For example intense fires known as *crown fires* occur when fire spreads from the ground into the tops of trees - these fires burn independently of surface fires, with flames moving through the treetops. This type of fire is not very common in Western Washington. *Ground fuels* are all of the combustible materials found below the ground surface, and include tree roots, duff, and organic material. *Surface fuels* are found at the ground level, including twigs, grass, needles, wood, and other vegetation. *Aerial fuels* are standing vegetation including tree crowns, branches, leaves, snags, and hanging moss.

Taking in Oxygen

The third component of the fire triangle is oxygen. Oxygen is required for combustion, or fire, to occur. Oxygen is in the air you breathe. Anywhere air can reach, oxygen can reach. Firefighters use dirt and other methods to smother burning fuels. The dirt replaces the air so no oxygen is available for the fire.

Densely packed fuels have less air available than loosely packed fuels. Less air means less oxygen and that makes it more difficult for the fire to spread. Loosely packed fuels have more air space, and thus more oxygen, which makes it easier for the fire to spread.

Watching Out for Weather and Terrain

In addition to the components of the fire triangle, how intense a fire burns and how fast it spreads depends on weather and terrain (specific information about Lake 12 is discussed in Chapter 4). Here are some general rules of thumb:

- The combination of current or forecasted high temperatures, low humidity and strong winds can produce potentially dangerous fire conditions.
- Weather affects the moisture content of dead and live vegetation. Dead fine fuel moisture content is highly dependent on the relative humidity and the amount of sun exposure. The lower the relative humidity (RH) and the greater the sun exposure, the lower the fuel moisture content. Relative humidity tends to increase at night. Lower fuel moistures produce faster spread rates and higher fire intensities. This is why wildfires are prevalent in the summer months when rainfall is light and relative humidity is low.
- Fire typically follows wind direction. It's possible for the wind to carry embers (*firebrands*) ahead of the main fire and start new fires (known as *spot fires*).
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity. This is due, in part, to the increased amount of oxygen (more air) and the wind driving heat into adjacent fuels. Strong dry winds originating from the east side of the state carry an even greater threat.
- Thunderstorms produce lightning, which is a source of ignition, and strong and often erratic winds.

- Large fires may generate enough heat to create their own weather. Called *plume dominated fires*, from the giant smoke plume that rises thousands of feet into the air, these fires are dangerous because of their erratic behavior.
- Terrain influences fire behavior by the steepness of the slope. Fires tend to burn uphill. In general, the steeper the slope, the faster a fire will spread and the more intense it will burn.
- The direction a slope faces (*aspect*) contributes to how a fire burns. Fuels on a south facing slope tend to be drier and will burn faster and more intensely than fuels on a shaded north slope.
- Narrow and box canyons can produce a chimney effect that creates strong upslope winds which can rapidly spread a fire.

Terrain and weather considerations for the Foothills community are discussed in Chapter 4.

Chapter 3

Getting In The Zone

Two factors generally determine the survivability of a house during a wildfire; the construction of the house itself and the area surrounding the house.

Depending on the construction, one house may be more likely to survive a wildland fire than another. For example because there is no source of exterior combustible fuel, a concrete structure with a metal roof will fare better than a house with a shake roof and wooden siding.

From a construction standpoint, you can make a house more fire survivable by using:

- Class A, B or C rated, fire-resistant roofing material
- Fire-resistant building materials on exterior walls, overhangs and attachments
- Double-paned or tempered glass in windows, skylights and doors
- Enclosed eaves, fascia, soffits and vents

See www.firewise.org for more tips on making your home safer.

Due to the cost and effort, it might not be practical to make structural modifications to your home. However, you can still greatly reduce the risks of wildfire by focusing on the second factor that determines house fire survivability - the area surrounding the home.

It's important to understand that wildland fires aren't like avalanches or tsunamis. They don't spread by flowing over the landscape, engulfing whatever is in their path. Fires need fuel, heat and oxygen to burn and spread (see Chapter 2 for more details). If you can limit heat and fuel sources, you decrease the potential of the fire growing. If you reduce the amount and type of fuels around a house, you lower heat that's generated adjacent to the structure during a wildfire. This increases the home's survivability.

A *home ignition zone* includes the house and everything within 100 to 200 feet of the structure. While the wooden frame construction of a house is combustible, it takes a significant amount of heat to ignite. A mere 30 feet of distance from a crown fire is all that's required to reduce radiated heat to low enough levels that the house will not catch on fire. See Figure 3-1 to get a better idea of Firewise zones.

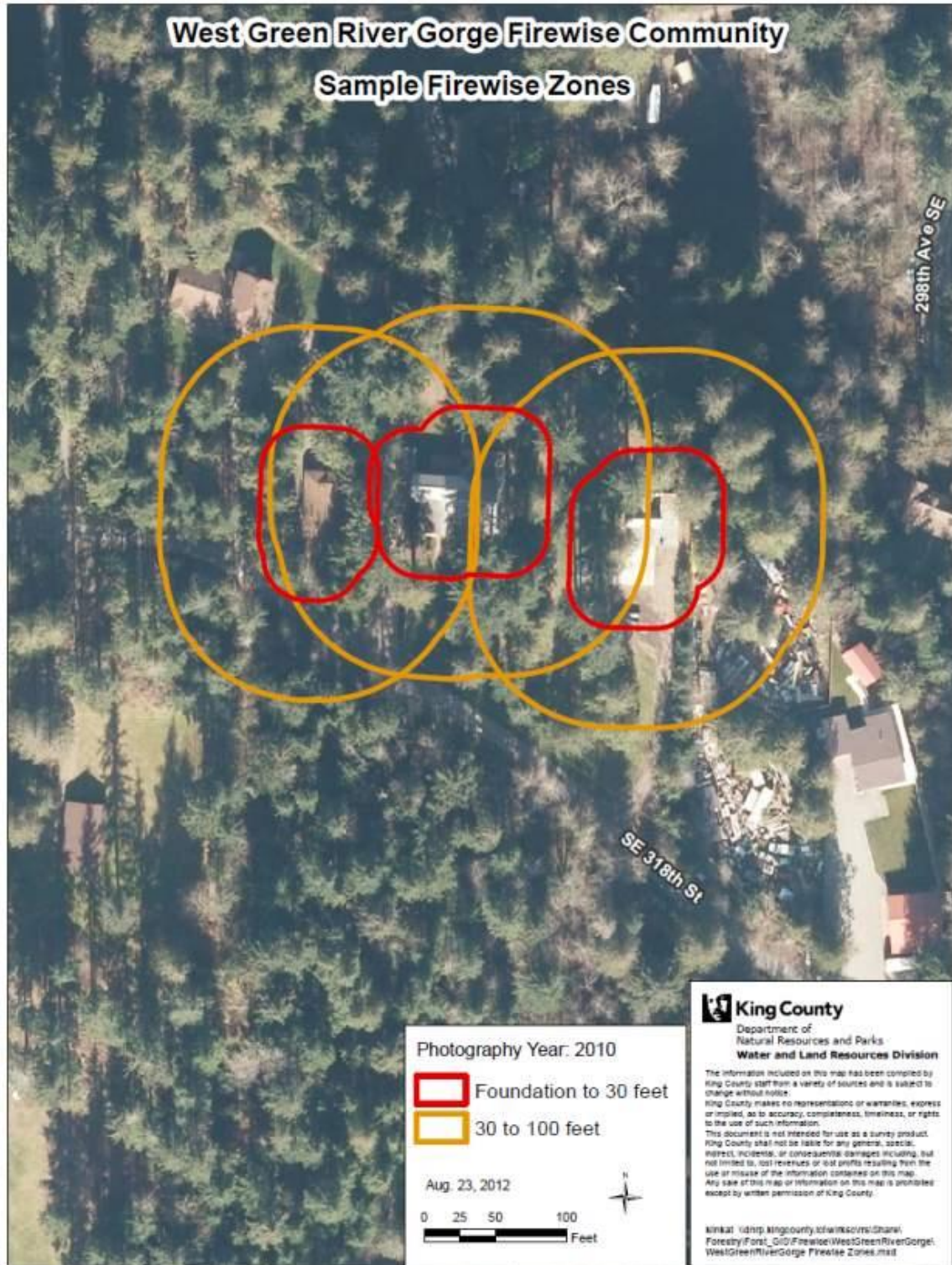


Figure 3-1: Example Firewise Zones. Neighboring properties can have interconnected zones. (King County GIS)

The first zone is 30 feet from the house. Figure 3-2 gives some ideas for managing this zone. In addition:

- Think lean, clean and green: Mow the lawn regularly.
- Plant fire-resistant vegetation (see the list in the Resource Kit) and keep plants, grass and trees regularly watered and healthy; especially during fire season.
- Remove dead vegetation (leaves and pine needles) from gutters, under decks and within 10 feet of the house.
- Prune back shrubs and tree branches – the lowest branches should be at least 6-10 feet from the ground and shouldn't overhang any part of the house.
- Take out *ladder fuels* (material on or near the ground that will carry fire into a tree) and provide fuel breaks (such as gravel walkways) to prevent fire from traveling along the ground to the house.
- Ensure firewood stacks are at least 30 feet from the house

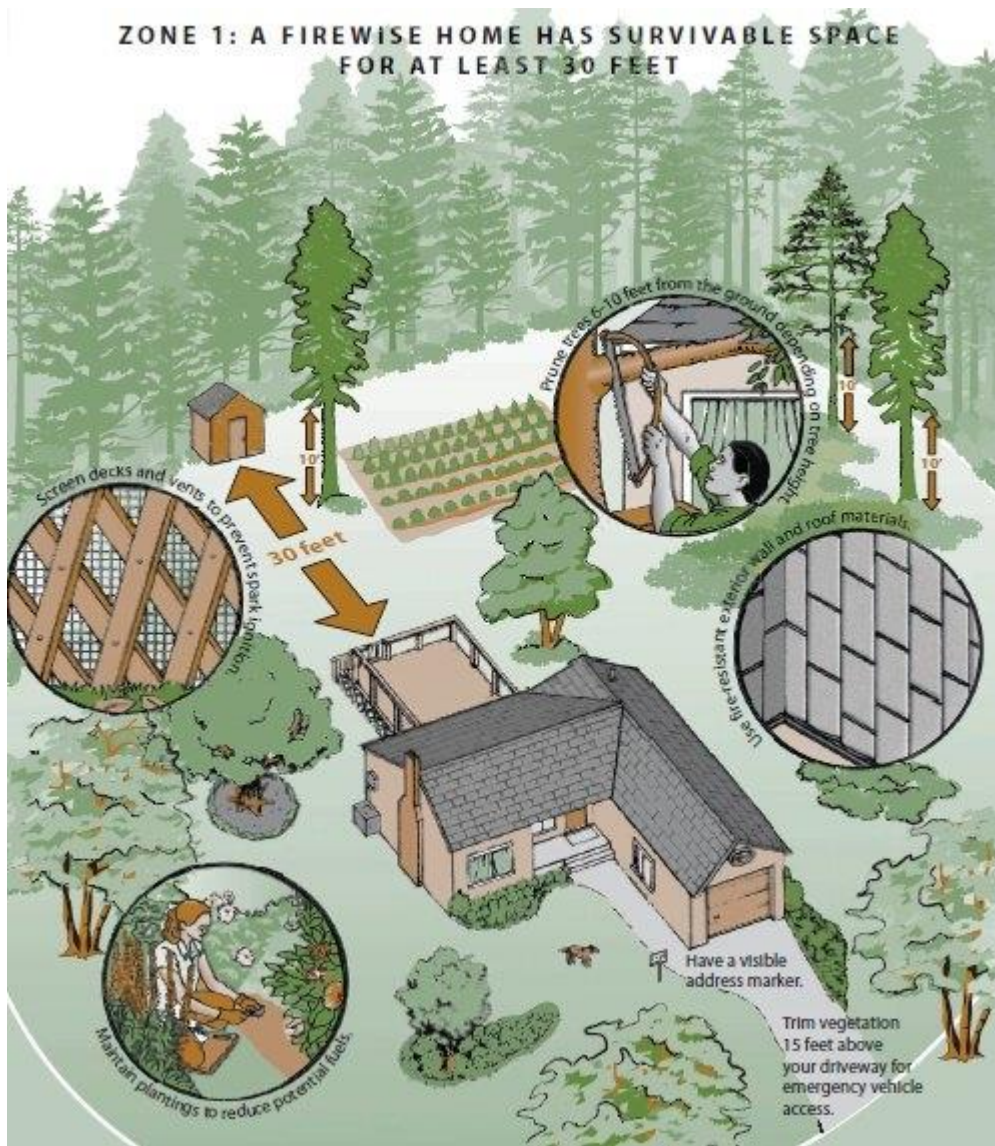


Figure 3-2: Simple steps for turning a house into a Firewise home.

The next zone is 30 to 100 (or even 200) feet from the house. In this zone you should consider the type and number of trees. There can be more plantings, but continue to prune the trees and ensure there's separation between the branches of adjacent trees. The idea is to gradually reduce the amount of fuel sources as you get closer to your home.

For more information on the home ignition zone and ways to make your home and property more fire safe, visit these Web sites:

- <http://www.firewise.org>
<http://your.kingcounty.gov/ddes/fire/pdfs/FirewiseBrochure.pdf>

Chapter 4

The Foothills Community Profile

This chapter presents a brief profile of the Foothills Community Firewise planning area on the west edge of the Green River Gorge (see Figure 4-1). General demographic, economic, public safety and environmental features are discussed.



Figure 4-1: The Foothills Community Firewise plan boundaries in blue. (Google Maps)

Community

The Foothills Firewise planning area is located approximately 3.5 miles east of Black Diamond and Highway 169. Located in unincorporated, rural King County, the community includes properties predominantly east of SE Green River Gorge Road/293rd Avenue SE and west of the Green River Gorge, and from SE 318th Street to the north and the Green River Gorge bridge at the south.

Homes are situated on both large and small lots. There are 33 parcels with structures in the area with 34 dwellings (see Figure 4-2). According to 2010 census figures about 83 residents live in the area. Residences are a mix of older homes and larger, newer houses. The total assessed land value in the area is \$9,594,000 with improvements valued at \$4,357,000.

Houses with property adjoining SE Green River Gorge Road are located near the road and have relatively low density. Properties accessed from 318th Street SE have higher density and are further set back from the main SE Green River Gorge Road.

Property directly adjoining the Green River Gorge is state land managed by Washington State Parks and is part of the 14-mile long Green River Gorge Conservation area.

The nearest commercial services are in Black Diamond and the Green River Gorge Resort (an RV park and campground) to the southeast across the Green River Gorge bridge.

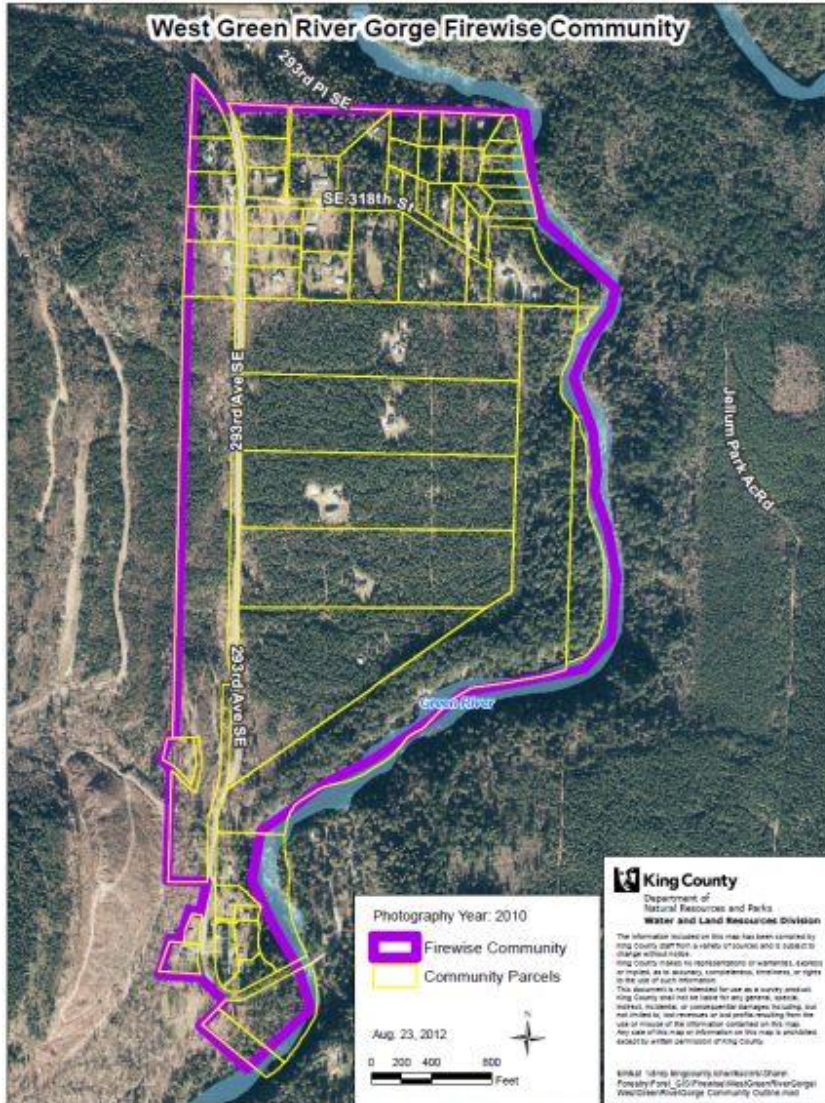


Figure 4-2: The Foothills community Firewise plan boundaries in purple with parcels shown in yellow. (King County GIS)

Fire Protection

Fire protection for the Foothills community is provided by Mountain View Fire and Rescue (King County Fire District 44). Fire station 99 is an unmanned facility located in downtown Black Diamond at 25313 Baker Street and is about 3 miles away. The nearest manned facility is Station 98, located at Lake Sawyer (22015 SE 296th Street), which is approximately 6 miles/15 minutes away from the Foothills community area. This station is staffed by career and volunteer firefighters.

Fire hydrants are not present in the community. Newer homes have internal fire sprinkler systems to comply with King County code. Nearby lakes provide water sources for supplying fire engine tankers and/or fire helicopter bucket work.

Fuels

The Foothills community area is classic wildland urban interface. The vicinity is heavily forested with coniferous and deciduous trees and native vegetation present throughout. Adjacent areas are both private and state owned and contain numerous tracts of forested land (see Figure 4-3 for an aerial view). Large sections of land surrounding the community remain undeveloped.

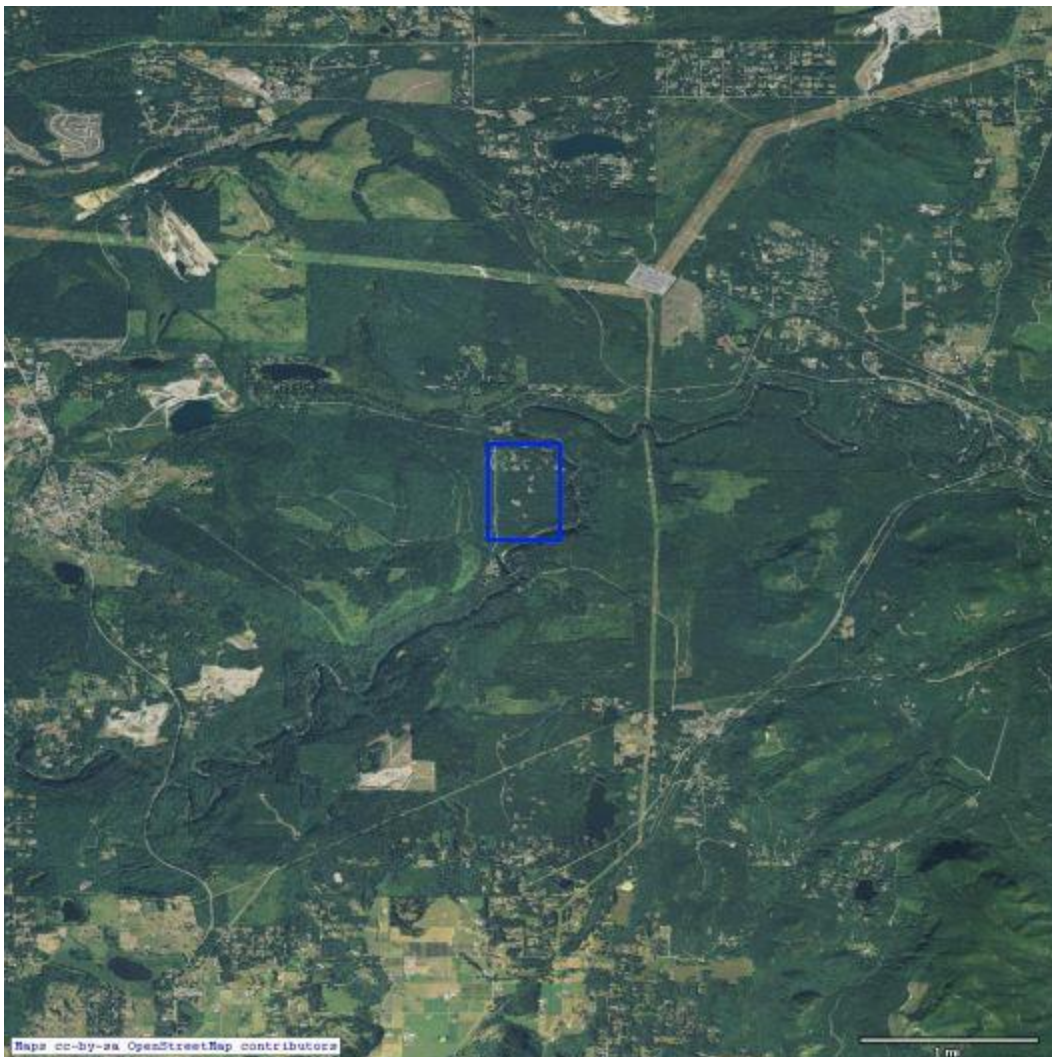


Figure 4-3: Aerial photo showing vegetation surrounding forested land surrounding the Foothills Community, the Green River Gorge, and the surrounding area. (OpenStreetMap)

There are several different fuel types in the Black Diamond area. Forested timber land primarily consists of mature stands of evergreens with minimal ladder fuel concentrations (NFDR model H and NWCG type 8). Brush and small tree stands (NFDR model L and NWCG type 6) are prevalent in open pit mine reclamation areas.

Weather

Located at the base of the west Cascades, the Black Diamond area typically has higher rainfall amounts than other parts of the Puget Sound Basin. This additional precipitation tends to delay the start of fire season, with the driest and warmest times of the year occurring in July and August. (See Figures 4-4 and 4-5.)

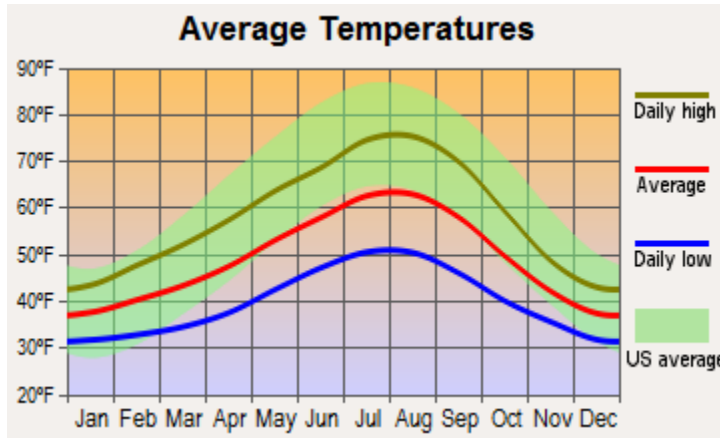


Figure 4-4: Black Diamond average temperatures.

During the summer months temperatures may exceed 80 degrees for several days in a row; accelerating fuel drying.

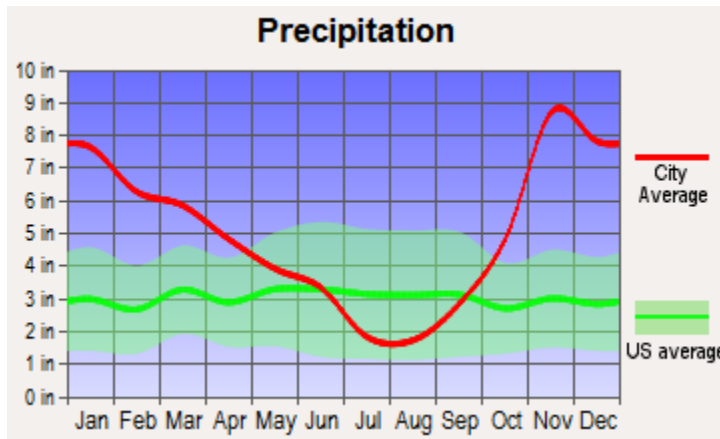


Figure 4-5: Black Diamond average precipitation.

Local wind conditions can have a significant impact on fire behavior. As with many Cascades foothill communities, the Black Diamond area can be subject to strong wind events. Gusty east winds are of particular concern during dry conditions. These events occur when high pressure builds east of the Cascades range and warm, dry air is forced to the west. Because the air is compressed as it is pushed westward, gale force winds can form. The Black Diamond vicinity is not as prone to as many east wind events as areas on the I-90 corridor.

While east winds depend on certain weather conditions, it's normal for afternoon upslope winds to occur in the area. These winds can be strong and cause fires to burn more intensely and rapidly spread uphill.

Topography

The topography of the Black Diamond area is characterized by rolling hills and the steeply cut Green River Gorge. In addition to natural formations, the land has been shaped by coal mining that began in the 1880s. Many of the open-pit coal mines eventually filled with groundwater, forming lakes. Manmade hills also arose from coal mining spoil heaps.

The Foothills community area is on the west side of the Green River Gorge (see Figure 4-6). The Green River is a 65-mile long waterway that originates in the Cascades. Most of the upper stretch of the river, including the Howard A. Hanson Reservoir, is part of the Green River Watershed; which is closed to public. West of the Green River Watershed at Kanaskat, the river passes through the Green River Gorge, a river-cut rock canyon with cliffs rising from 150 to 300 feet above the riverbed.

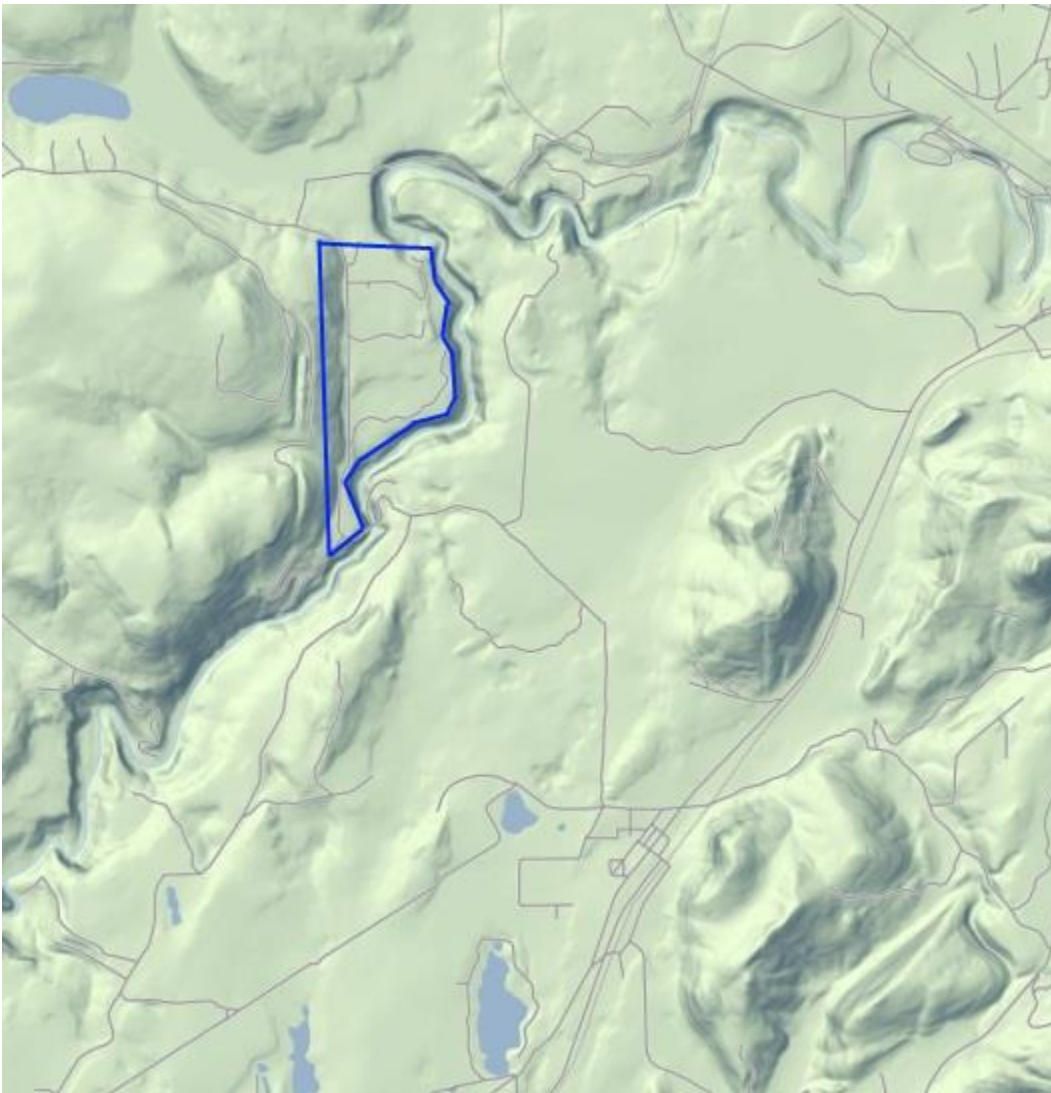


Figure 4-6: Foothills community area topography. (OpenStreetMap)

The Firewise planning area sits mostly on a plateau between the 1,270 foot Black Diamond Hill to the west and the Green River Gorge to the east (see Figure 4-7). The nearby Green River is approximately 500 feet above sea level, with 125 to 150 foot high cliffs. The terrain rapidly slopes up from the gorge cliffs and then flattens out; the elevation of the intersection of SE Green River Gorge Road and SE 318th Street is approximately 740 feet above sea level.

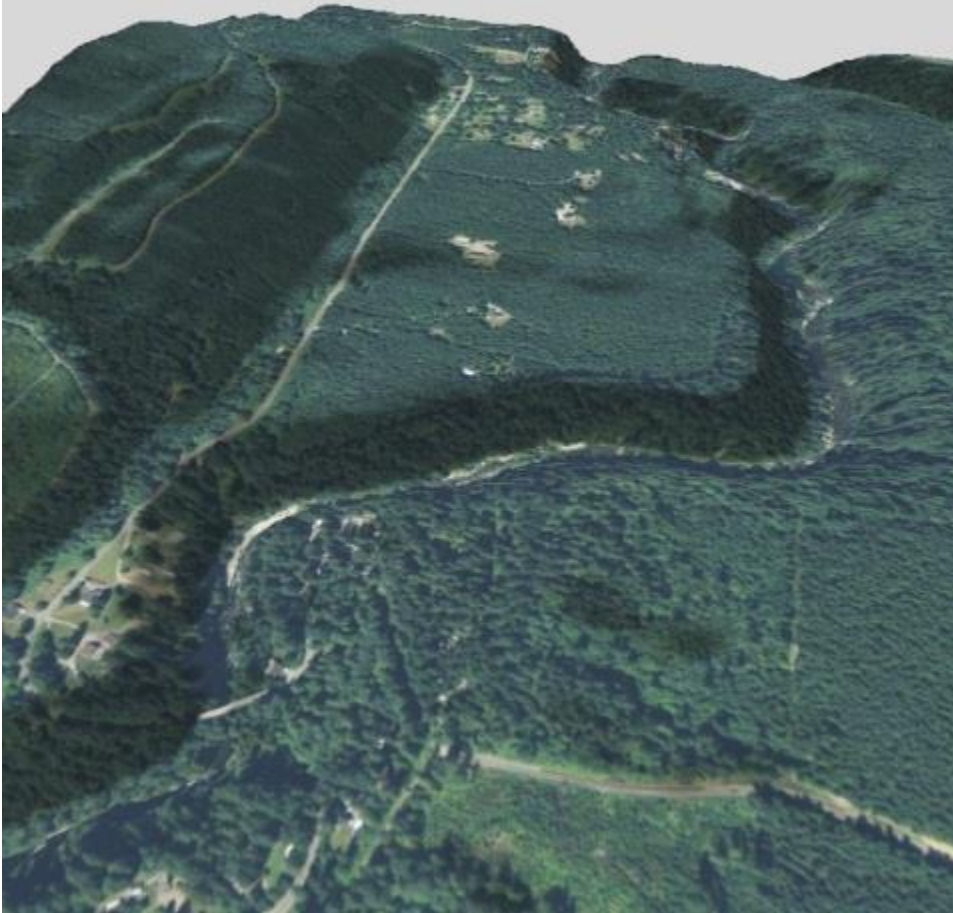


Figure 4-7: Foothills community area terrain. (TopoFusion)

Properties accessed via SE 318th Street are on varied terrain, with steep slopes occurring closer to the gorge.

Chapter 5

Foothills Community Issues & Threats

In evaluating wildland fire threats, it's useful to first look at the fire history of an area. Figure 5-1 shows wildfires reported in the Foothills community and West Green River Gorge vicinity from 1970 to 2009. There were nearly 100 fires recorded during this period; any of which could have possibly spread into homes, depending on the conditions.

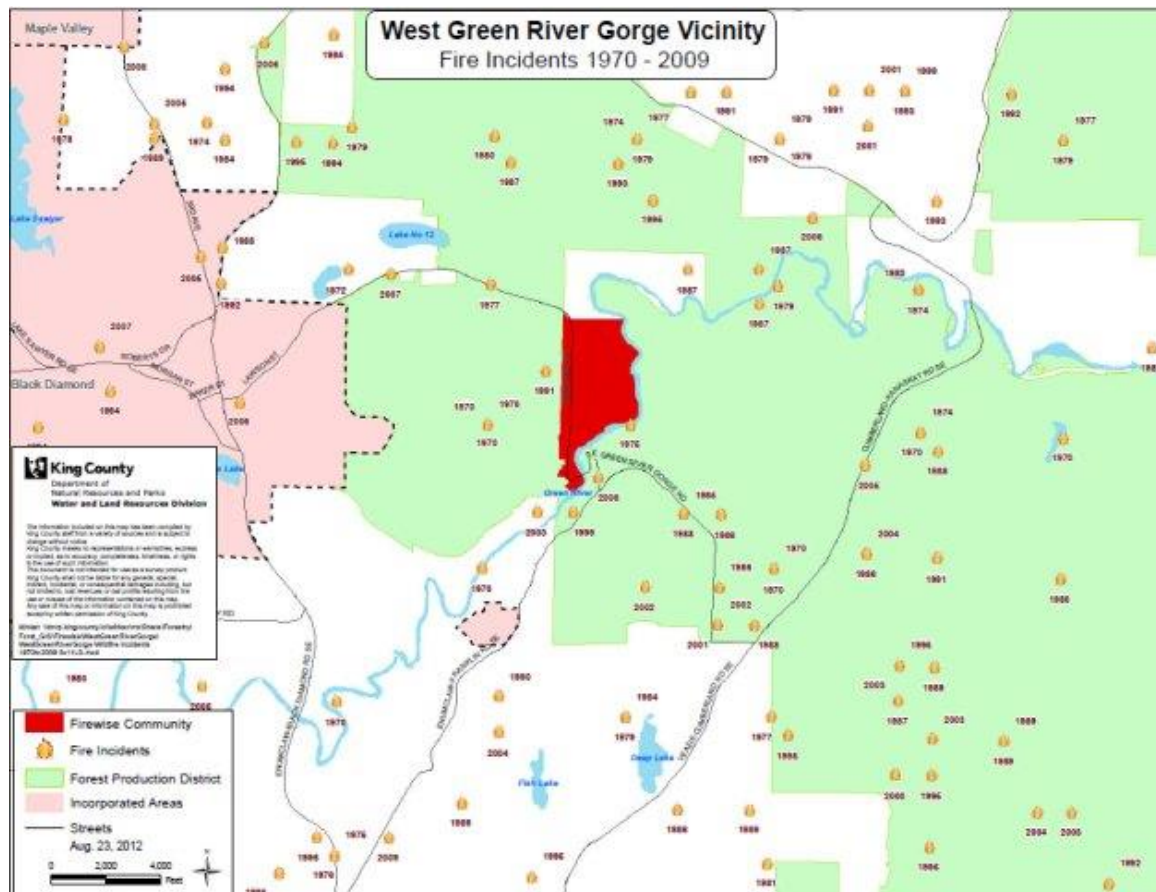


Figure 5-1: Foothills community area fire history, 1970 to 2009. (King County GIS)

In August 2012, the Firewise consulting team evaluated the Foothills community, noting potential wildfire threats and completing a Washington State Department of Natural Resources evaluation form (included at the end of this chapter). The community scored 109, which is at the high end of the Moderate Hazard rating; two points away from High Hazard. Issues that contributed to the score such as vegetation, access, and topography are discussed in this chapter.



Wind Driven Embers

One of the primary threats the Foothills community area faces is a fire in the wooded areas to the east with accompanying easterly winds. Wind blown, burning embers (also called firebrands) shown in Figure 5-2, can spread a fire far in advance of the main flame front. While roads and the Green River may provide a fire break, there is no protection from air borne embers.

Figure 5-2: Wind driven burning embers (firebrands) can quickly spread a fire.

Terrain

As the terrain slopes up from the western rim of the Green River Gorge toward residences, a fire that originates on the east side or the bottom of the gorge could quickly race uphill and threaten homes. Accidental, human-caused fires account for the majority of wildfires in Western Washington and the chances of a fire in the area increases with the presence of Green River Gorge Resort and popular spots for fishing, hiking, and berry picking in the gorge. While the Green River would stop fire from spreading on the ground, wind could easily cause flames or embers to jump over the river, potentially igniting vegetation above the cliff walls. Dry fuels, hot temperatures, low humidity, and easterly winds could increase a fire's severity.



Figure 5-3: Fire moves faster going uphill than downhill, and the sloping terrain to the west of the Green River Gorge could contribute to a rapidly spreading fire.

Natural Fuels

Wildfire fuels are simply anything that may burn. All trees, brush, homes, structures and other flammable items are considered fuel. However, some types of vegetation and structures are more flammable than others.

Natural fuel in the Foothills community area consists of grasses, understory, and a mix of deciduous and evergreen trees (Figure 5-4). The community is surrounded by undeveloped land managed by Washington State Parks, Washington State Department of Natural Resources, and private landholders.



Figure 5-4: Typical Green River Gorge area fuels.

While an average annual rainfall of over 85 inches keeps fuel moisture levels high, prolonged summer drought conditions can dry out fine fuels, increasing wildfire risk; especially when there are concentrations of downed trees and limbs from storm events.

Properties in the area varied, with some cleared to provide good defensible space around houses from ignited natural fuels (Figure 5-5) and others with dwellings located dangerously close to ignition sources.



Figure 5-5: Defensible space means using appropriate vegetation around a home to reduce the chances of ignition. You can still maintain a natural setting while reducing fire risk.



Scotch Broom (Figure 5-6), is a bright yellow flowered invasive plant that blooms in the early summer and thrives in the full sun conditions of most right of ways. It is also highly flammable and spreads very rapidly and is difficult to remove. Small patches of Scotch Broom were observed in the community.

Figure 5-6: Scotch Broom is a flammable, invasive plant.

Flammable Landscaping

Certain landscape plantings can increase fire risk. Some residences in the community had vegetation growing in close proximity to structures (Figure 5-7). Highly flammable plants, such as decorative cedars and yews, should not be used within 30' of a residence. There are a variety of fire resistant plantings that are safer, yet are still good looking and can provide privacy.



Figure 5-7: Certain types of natural or landscaped plants in close proximity to a home can increase fire risk. Fire resistant plant varieties are a safer choice.

Cedar Shake Roofs

Structures with cedar shake roofs (such as the carport shown in Figure 5-8) are at greater risk of being destroyed or damaged by a wildfire. In various studies, buildings with Class A fire resistant material roof such as asphalt or metal are 95% more likely to survive a wildfire compared to structures with wooden roofs.



Wind blown embers can catch and collect on roofs. Because of the flammability of cedar roofs (especially older roofs that were not chemically pressure treated) a home can quickly burn to the ground. If a number of homes are threatened by a wildfire, firefighters with limited resources may elect to protect homes with composite roofs versus those with cedar roofs because of a greater likelihood of saving them. Embers are produced as a cedar roof burns and may spread a fire to other homes.

Figure 5-8: Cedar shake roofs are more flammable than composite roofs.

Fences and Decks

Anything connected to a house that can burn can be a hazard, especially if there are flammable plants nearby (see Figure 5-9).



Embers landing on wooden fences and decks can start those structures on fire. The fire can then spread to a house or other buildings.

Figure 5-9: Fencing and flammable vegetation.



Figures 5-10: *Unscreened, raised wooden decks can accumulate flammable material underneath.*

Wind blown dead vegetation such as leaves, pine needles and small branches can easily gather under raised wooden decks and porches that doesn't have screening or lattice (as shown in Figures 5-10). These accumulations can be ignited by embers, potentially setting the deck on fire.

Firewood

Firewood stacks (such as in Figure 5-11) nearby a residence or adjacent to flammable vegetation can pose a threat to a home or structure in case of ignition.



Figure 5-11: *Firewood stacked next to a house increases fire risk.*

Outbuildings

While most emphasis is placed on protecting residences from wildfire, outbuildings such as detached garages, shops, storage sheds, and barns can be equally if not more vulnerable to fire. In addition to losing a structure, outbuildings can also be a source of embers, further spreading a fire. Unenclosed exterior rafters, stored flammable liquids and other combustible materials, and unsafe electrical wiring increase the chances of an outbuilding and its contents being lost to a fire.

Propane Tanks

Above ground propane tanks were noted in the community (see Figure 5-12). These tanks can be a fire hazard if exposed to extreme heat and should be kept well away from structures and flammable materials.

While it is very rare that these tanks actually explode, they can overheat and vent their gas via their overflow valves. This may result in a jet of flame burning upward until the fuel is exhausted. Vegetation surrounding a tank should be maintained so it doesn't overtop the tank or help spread fire toward a residence.



Figure 5-12: Above ground propane tank with nearby flammable materials.

Outdoor Fire/Barbeque Pits

Several residences were noted that had outdoor fire pits (such as one in Figure 5-13). Residents should be aware that the use of fire/barbeque pits during dry and/or windy conditions can increase the risk of a wildfire.



Figure 5-13: Outdoor fire and barbeque pits are a common cause of wildfires.

Aboveground Utilities

Aboveground telephone and electric utilities are present on Green River Road (shown in Figures 5-14) and SE 318th Street. These utilities can be impacted by wildland fires (poles can burn causing them to fall and lines can also be destroyed by a hot burning fire). With power and communications disrupted, fighting the fire and communicating with residents during an emergency can become difficult. Close-by flammable vegetation increases the risk a pole or line may be damaged or destroyed by fire.



Figure 5-14: Utility lines can be damaged during a wildfire disrupting electricity and telephone communications.

Difficult to See or Not Present Street Address Numbers

Easily seen house address numbers on the street can be important for emergency personnel responding to emergencies; especially during darkness or limited visibility conditions. Many properties had difficult to read address signs at the street (one is shown in Figure 5-15). Some properties appeared not to have address numbers.



Figure 5-15: A difficult to read street address sign could delay emergency responders.

Road Access

The only access to the Foothills community is on the SE Green River Gorge Road. While the paved road is in good condition and can easily accommodate fire equipment, southern access could be impacted by a disabled vehicle on the one-lane Green River Gorge Bridge or by a landslide on the road east of the bridge.

Access to properties varied considerably. Several had wide gravel driveways with good visibility and adequate turnaround room for fire equipment. Other properties, notably some off of SE 318th Street, had narrow roads and driveways, limited visibility, lack of turnarounds, and steep grades (see Figure 5-16). These properties would be most at risk during a wildfire as emergency response personnel would likely be hesitant to access because of potential difficulties getting out.



Figure 5-16: SE 318th Street contains narrow stretches of gravel roads with limited visibility and turnarounds for fire equipment.



Several gated properties were noted (such as the one shown in Figure 5-17). Locked gates can also slow down or prevent emergency responders from accessing a fire.

Figure 5-17: Locked gates can prevent responders from accessing a property during an emergency.

Neighborhood Wildfire Hazard Evaluation Form

This form is based on 2006 International Wildland-Urban Interface Code Appendix C and 2002 NFPA 1144 Annex A

Community Name – Foothills
Location - Black Diamond, WA
Primary Access Road Name - SE Green River Gorge Road
Evaluation Date - 8/15/2012
Evaluators - Jeff Madden, Joel McNamara, Linda Vane

A: Neighborhood Design	Score	Rating
Access		
Two or more primary roads	0	4
One road through	3	
One road in and out (entrance & exit are the same)	5	
Gate		
Not gated	0	3
Locked gate	5	
Bridges		
No bridges or bridges with no weight and width restrictions	0	0
Low weight or narrow bridge restricting emergency vehicle access	5	
Road Width		
20' or more	1	2
Less than 20'	3	
Road Grade		
5% or less	1	2
Greater than 5%	3	
Road Type		
All weather, paved	0	3
All weather, gravel	3	
Limited access or unmaintained	5	
Secondary Road Terminus		
Loop roads or cul-de-sacs, outside turning radius of 45' or more	1	5
Cul-de-sac, outside turning radius of less than 45'	2	
Dead-end road, less than 200' long	3	
Dead-end road, more than 200' long	5	
Street Signs		
Present, with ≥4" reflective letters	1	3
Missing, or present with <4" letters or non-reflective letters	3	
		Sum: 22

Notes:

one way/narrow bridge to the south
 narrow, gravel road at 318th Street - moderate condition
 some locked gates present - no Knox Boxes observed
 poor/limited fire apparatus turnarounds/access on 318th
 private gravel driveways off Green River Gorge Road provide good fire apparatus access
 lack of good, visible address signs throughout the area

B: Vegetation / Fuels	Score	Rating
Fuel Type		
Light (e.g., grasses <6", deciduous leaf litter)	1	8
Medium (e.g., grasses >6", conifer litter, light brush, small trees)	5	
Heavy (e.g., dense brush, timber)	10	
Very heavy (e.g., logging slash, high volume of dead and down)	15	
Ladder Fuels		
Most tree branches pruned up >6' above ground or understory fuels	0	4
Most tree branches close to ground or understory fuels	5	
Defensible Space		
70% or more of neighborhood	1	10
30 - 70% of neighborhood	10	
Less than 30% of neighborhood	20	
	Sum:	22

Notes:

mixed conifer/deciduous fuel types (previously logged 25+ years ago)
 dead and downed trees between properties and gorge
 some Scotch Broom present
 flammable vegetation next to some homes
 excellent defensible space on many residences outside the 318th area
 some thinning occurring but not active forest management

C: Topography and Weather	Score	Rating
Weather		
History of high fire occurrence	0 - 5	3
Exposed to unusually severe fire weather and strong, dry winds	0 - 5	
Local weather conditions and prevailing winds	0 - 5	
Slope		
8% or less	1	7
8 - 19%	4	
20 - 29%	7	
More than 30%	10	
Topographic features*		
Topography that adversely affects fire behavior	0 - 5	3
<i>* Consider attributes like ridges, saddles, steep slopes, steep narrow draws, small canyons, etc.</i>		Sum: 17

Notes:

~50 fires in Black Diamond area since 1970 (one in the gorge within the past several years)
 nearby recreation spots/trailer park increase threat of human-caused fires
 large elevation change over short distance - base to top of gorge

D: Building and Property Construction

	Score	Rating
Roofing		
More than 75% of homes have metal, tile, class A asphalt or fiberglass shingles	0	5
50 - 70% of homes have metal, tile, class A asphalt or fiberglass shingles	10	
Less than 50% of homes have metal, tile, class A asphalt or fiberglass shingles	15	
More than 50% of homes have wood roofs	20	
Siding and Decks		
More than 75% of homes have noncombustible siding/deck	0	10
50 - 70% of homes have noncombustible siding/deck	5	
50 - 70% of homes have noncombustible siding and combustible deck	10	
Less than 50% of homes have noncombustible siding and combustible deck	15	
More than 50% of homes have combustible siding/deck	20	
Foundations / Crawlspace		
More than 75% of homes have enclosed foundations with vents covered by $\leq 1/4$ " metal mesh	0	5
50 - 70% of homes have enclosed foundations with vents covered by $\leq 1/4$ " metal mesh	5	
Less than 50% of homes have enclosed foundations with vents covered by $\leq 1/4$ " metal mesh	15	
More than 50% of homes have open foundations	20	
	Sum:	20

Notes:

mostly composite roofs, but a few cedar shake roofs present
 318th area mix of older and newer homes
 many outbuildings and decks present

E: Fire Protection - Water Source	Score	Rating
500 GPM hydrants spaced within 1,000'	0	8
Hydrants spaced >1,000' apart or < 500 GPM hydrants	2	
Other water source available within community (tanks, pools, lakes, etc.)	5	
Water source located within 20 minute or less round trip	7	
Water source located farther than 20 minute but less than 45 minute round trip	10	
Water source farther than 45 minute round trip	15	
Notes:	Sum:	8

no fire hydrants present
 nearby water sources (lakes)
 nearby unmanned fire station (Black Diamond)
 newer homes have sprinkler systems to meet King County code

F: Utilities	Score	Rating
Electric		
Underground, clearly marked	0	2
Underground, not clearly marked	1	
Overhead, with adequate right of way (>20')	2	
Overhead, with right of way not maintained	5	
Gas		
Underground, clearly marked	0	3
Underground, not clearly marked	1	
Aboveground, with 15' of brush clearance and >30' from structures	2	
Aboveground, with no brush clearance or <30' from structures	5	
	Sum:	5

Notes:

overhead power at Green River Gorge Road and down 318th
LPG tanks near residences

G: Surrounding Landscape	Score	Rating
Neighborhood is predominately within low fire hazard mapping area	0	15
Neighborhood is predominately within moderate fire hazard mapping area	10	
Neighborhood is predominately within high fire hazard mapping area	15	
Neighborhood is predominately within extreme fire hazard mapping area	20	
	Sum:	15

Notes:

fire in surrounding area presents risk to the community

Neighborhood Hazard Ratings	Sum
A: Neighborhood Design	22
B: Vegetation / Fuels	22
C: Topography and Weather	17
D: Building and Property Construction	20
E: Fire Protection - Water Source	8
F: Utilities	5
G: Surrounding Landscape	15
Total:	109

Neighborhood Hazard from Wildfire Rating Scale
Low – 70 or less
Moderate – 71 to 110
High – 111 to 135
Extreme – 135 or more

Chapter 6

Recommendations

Chapter 5 discusses some wildfire vulnerabilities and threats to the Foothills area. This chapter provides recommendations for decreasing the risk of loss of life and property during a large fire incident.

The recommendations include:

- Educate property owners about Firewise principles
- Reduce natural fuel sources
- Review landscaping choices
- Evaluate roofing and other home construction
- Mitigate firewood, fire pit, and propane tank risks
- Emphasize the dangers of fireworks
- Improve house/address numbers
- Keep utility poles and lines clear of fuel sources
- Explore the use of emergency communication systems
- Establish a formal community evacuation plan
- Work with Mountain View Fire and Rescue and other agencies to determine “safe zones” and other alternatives if evacuation is not possible
- Consider forming a Community Emergency Response Team (CERT)

It's important to note that these recommendations can be phased in over time (a suggested plan is included at the end of this chapter). For example, some communities focus on public education the first year and then move on to projects the second year. Much depends on the community and level of involvement. The key is to make forward progress on reducing fire risk, no matter how gradual that progress is.

Firewise Landscaping and Public Education

Education is one of the strongest tools for reducing the risk of harm or loss from wildfire. The Firewise program is primarily educational, and seeks to create a sustainable balance that allows communities to live safely in natural settings.

Educating community members about 30' defensible space zones, fire-resistant plants for landscaping (and where to locate them, such as interspersed in a row of flammable shrubs), the dangers of legal and illegal fireworks, and other Firewise principles should be a priority.

To reach the greatest possible number of people, a variety of methods should be used such as presentations by recognized authorities, written material targeted to property owners, and distributing readily available Firewise educational material.

Other public outreach ideas include:

Walk-arounds – An effective way to demonstrate Firewise landscaping and defensible space principles is to take a walk around neighborhood residences, pointing out good and not so good examples of Firewise practices. A walk could begin at a home with a short presentation on Firewise principles by county or state representatives. After a discussion, the attendees would visit selected properties and ask questions about landscaping and construction features.

Firewise Literature - Most homeowners should have already received King County's Firewise brochure. Additional brochures should be kept on hand for new residents that move into the community.

Spread the Word, Not the Fire – While Firewise practices in Foothills area will help reduce wild fire risk inside the community, the Black Diamond area as a whole is at risk due to the large amount of urban interface land. The more property owners that employ Firewise practices the better. For example the spread of a fire might be stopped at a Firewise neighborhood down the road before it had a chance to move toward houses in the Foothills area. Getting the word out by simple word of mouth or suggesting Firewise presentations in public and/or home schools can help. Beyond that, Firewise communities have used a number of different techniques to get the message out about the program, including:

- Articles in local newspapers
- Information booths at local events
- "Give-away" items with tips, hints and other Firewise-related information.
- Plantings of fire resistant plants at local fire stations

Wind Driven Embers

Wind-driven embers can start fires up over a mile away from the main fire. If an ember lands in an appropriate fuel, it can start a fire in a matter of seconds.

The best protection from wind borne embers and firebrands is to make sure there is no fuel to catch fire. This can mean:

- Cleaning out gutters
- Using gravel, compost and other non-flammable materials for mulch in planting beds (and avoiding the use of decorative bark)
- Enclosing the bottoms of decks and porches with 1/8 inch metal screening
- Making sure attic and crawlspace vents are covered with 1/8 inch metal screening

Terrain

Altering terrain to reduce fire risk is typically not an option for most homeowners. However, fuels which are present adjacent to or on sloping terrain can be managed to slow or stop a wildfire from spreading. Residents should be aware of the impact terrain has on fire behavior. For example if a home is close to sloping terrain, it may be prudent to extend Zone One defensible space from the foundation to greater than 30 feet to diminish the risk from a hot fire moving quickly uphill.

Natural Fuels

Identifying land that contains vegetation and fuels that increase fire danger can help to mitigate wildfire risk. A healthy forest is a safe forest, and the more property owners that manage their undeveloped forest land in a wise and thoughtful way, the more fire risk is reduced for the entire community. For adjoining properties, once hazardous fuel sources are identified, residents can work with the landowners and the county to reduce fuel loads, keep roads day-lighted from overhanging tree branches, and establish natural firebreaks.

Here are some additional recommendations for mitigating risks associated with natural fuels:

Strategic Planning – As a significant amount of land in the Foothills community is held by family members, it may be easier to take a strategic approach to Firewise planning for these properties. This would involve applying forest management practices and Firewise zones in a strategic manner that benefits all landowners, no matter where the property boundaries may occur.

Chipper Day – One helpful Firewise activity is to have the neighborhood work together and get a wood chipper for a day. This would allow neighbors to work on cleaning out the unwanted brush and downfall on their properties and having it disposed on site. Participating property owners would simply drag the unwanted brush to the roadside where a volunteer or professional crew could easily chip and dispose of the brush. The community could share the costs of a renting an appropriate sized chipper or work with the county (and the King Conservation District) to get the use of a chipper. The chips may be hauled off to an appropriate site or offered to farms in the area as livestock bedding.

Shaded Fuel Breaks - Improving forest health through fuels reduction with thinned buffers (see Figure 6-1) should be considered. These buffers could either be located on Green River Gorge Conservation Area land or on individual properties. The fuel breaks would be strategically sited to help slow the path of a fire that is burning upslope from the gorge.



Figure 6-1: A shaded fuel break can slow or stop the spread of a fire.

For example, such a buffer could be created to the following specifications:

1. Dead and down material up to 6 inches in diameter to be chipped and the chips scattered over the work site.
2. The limbs of dead and down trees greater than 6 inches in diameter to be removed and chipped and the remaining trunk to be left in place unless several trees have created a piled concentration. In this case, the remaining tree trunks will be separated by at least 10 feet from any other logs and left on site.
3. Standing dead trees with red needles still attached to be felled and treated using the dead and down prescription described in item 1 and 2 above.
4. Snags that pose a hazard to crews working in the area to be felled.

5. Trees 6 inches and greater in diameter (DBH) to be pruned (live and dead limbs) up to a height of 15 feet. No pruning will be done to a height greater than 50% of total tree height. The cut limbs will be chipped on site.
6. Trees less than 6 inches DBH to be spaced leaving 10 feet between crowns. Live and dead limbs will be pruned up to a height of 15 feet. No pruning will be done to a height greater than 50% of total tree height. The cut limbs and stems will be chipped on site. Trees less than 3 feet high do not require pruning.
7. Non-coniferous brush to be cut and chipped on site unless islands are pre-designated.

A properly designed and implemented thinned buffer could make for a healthier forest and a safer neighborhood. Appropriate forest management practices and details on buffers should be worked out with foresters and county and state agencies.

Scotch Broom – Patches of Scotch Broom should be removed before the invasive plant has a chance to take hold and proliferate.

Flammable Landscaping

Residents should be aware of the fire risks of some types of landscape plantings. Flammable plants (usually fairly resinous varieties such as cedars, yews, and junipers) should only be used 30' or more away from the house. The Resource Kit CD-ROM includes a list of plants that are less flammable and safer to use closer to structures.

The King County Web site also has a great online native plant tool for landscape planning. Check it out at: <http://green.kingcounty.gov/gonative/Help.aspx>

Roofing and Other Home Construction

Cedar shake roofs increase the risk of fire damage or loss to a house and surrounding residences. Residents should be educated about the threat and encouraged to replace roofing with Class A fire resistant material when they have an opportunity.

As an interim measure to replacing a roof, homeowners should know about other structural improvements that are less costly yet can still help reduce fire risk. Simple measures such as enclosing the bottom of wooden decks with screens as mentioned below can make a difference in protecting a home.

The national Firewise program has many additional suggestions for home construction on their web site: <http://firewise.org/information/who-is-this-for/homeowners.aspx>

Fences and Decks

Wooden fences and decks should not be connected directly to a residence. If an ember should land against a fence and start it on fire, the fire can easily spread to the house. There are a couple of easy fixes for this situation. A simple gate at the connection point allows the homeowner to open the gate and interrupt the path of the fire. A metal gate would not even have to be opened. The fence could be terminated with a stone or metal post next to the house. If the fence must be connected to the house, use metal connectors and avoid direct wood-to-wood contact.

Decks should be built with fire resistant materials if possible. Another readily solved issue with decks (and porches) is preventing the buildup of dead vegetation underneath. Dry vegetation can be extremely flammable and if an ember should reach it, the fuel could easily ignite the deck or

porch and spread the fire to the house. An easy way to reduce this risk is to screen in the undersides of decks/porches with 1/8-inch metal mesh. This type of screening reduces the amount of flammable material that builds up under these structures and prevents embers from reaching any vegetation that may be present. A wooden lattice or other structure may be added for aesthetic purposes if desired.

In addition to screening underneath decks and porches, any crawl space or attic vents should also be screened for the same reason. Houses tend to “breathe” throughout the day as they heat up and cool down. Air is drawn through attic and crawlspace vents. This same airflow can draw embers into the house and start insulation or other materials on fire. Screens prevent embers from entering the house and have the added benefit of keeping out rodents and other unwanted wildlife.

Firewood

Dry firewood can quickly spread a wildfire. A wind-blown ember can start smaller pieces and kindling on fire and soon an entire stack of wood becomes an unwanted and potentially dangerous bonfire. Firewood should never be kept next to the house. Ideally, firewood would be kept in a covered structure at least 30 feet from the main residence.

Outbuildings

Detached garages, shops, storage sheds, barns, and other outbuildings should be assessed for fire vulnerabilities. Most Firewise practices that apply to residences can also be used with outbuildings. In addition, any flammable and combustible liquids and materials should be stored so they are not readily exposed to embers or flames.

Propane Tanks

Propane tanks (large and small) should be sited away from a residence or structure in case of fire. Even small barbecue tanks should be kept away from buildings to reduce the chance of fire spreading in the event of combustion. Propane tanks typically won't explode under high heat, but will bleed off gas, which may ignite. Because of this, fire resistant plantings should be used around aboveground propane tanks.

Fire Pits/Outdoor Burning

If a property owner uses an outdoor fire or barbecue pit, it should be built according to Washington State Department of Natural Resources specifications.

- Located at least 25 feet away from any structure,
- Dug deep enough to reach mineral soil (no leaf litter or other organic material),
- Backfilled with at least four inches of cement,
- Lined with a metal or other non-combustible ring no more than three feet in diameter, and
- Surrounded by rocks at least 1.5 feet around the ring.

See the Campfire Brochure file included on the Firewise Resource Kit CD-ROM for more details on safe outdoor fires.

Fireworks

In 2009, fireworks and explosives started 790 fires and caused over \$5.4 million in loss statewide. 85% of all wildfires are caused by man-made activities. The use of fireworks is a major contributor of fire starts. Educating residents and others about the dangers of using fireworks in heavily forested areas and the surrounding lands should be an ongoing effort.

Difficult to See Street Address Numbers

If there is an urgent situation, fire and emergency personnel need to be able to easily find individual homes in the community. While address numbers may be present on homes, emergency personnel must slow down and examine each home for to determine the address. Address numbers should be clear and easily read at a distance, in both directions, in the darkness or under low visibility conditions.

Placing clear, easy to see, non-combustible markers on the street in front of each home makes it much easier for responding personnel to locate a specific house. These numbers could be located at the driveway entrance for all homes. If desired, the community may be able to work with the Mountain View Fire and Rescue to come up with a uniform address marker for everyone to use.

Utility Poles and Lines

Concentrations of flammable material should be kept clear of utility poles and lines to reduce the chances of ignition.

Narrow Drives

While a winding, narrow drive may have a nice, rural appearance, it can prevent or create problems for emergency vehicles from accessing a property. Even if your car or truck can easily fit down the drive, a much larger vehicle such as a fire truck may have to push through brush and limbs. If the drive is long and narrow, firefighters unfamiliar with the area may not know if they can turn around at the end.

Brush and limbs should be pruned to a minimum width of 12-feet and up to a minimum height of around 15-feet to ensure most fire fighting equipment can access the drive without damaging equipment. Narrow roads with low hanging limbs may prevent the fire fighters from driving down the lane.

In addition, there should be adequate space for a large vehicle to turn around at the end of the drive (40 - 80 feet is recommended depending on the type of turnaround). If the drive is very long, consider putting in pull-outs so two vehicles can pass each other without forcing one vehicle to back out the full length of the drive.

Gated Properties

While a locked gate provides security for a property, it can also delay or prevent fire personnel from responding to an emergency. Residents with gated property should consider installing a Knox Box; a secure key box that allows fire personnel to quickly gain access to a locked gate without damaging it. Refer to the Resource Kit for more information on Knox Boxes.

Emergency Communications

In the event that landline or cell phone service is available during an emergency, consider establishing a phone tree system for contacting residents. This is a fast and efficient way of providing the latest information about a wildfire or other emergency. A phone tree could be easily expanded outside of the area by adding contacts for other neighborhoods. In addition to a phone tree, email addresses should be exchanged as part of an emergency communication plan. (A free Yahoo! account and group has been set up for Foothills Community Firewise use. Information is included in the CD-ROM Resource Kit.)

Reverse 911: Mountain View Fire & Rescue uses the Reverse 911 service to notify residents of emergencies. During certain emergencies, an automated phone call is placed to residents in the affected area with information about the emergency. However, only landlines are automatically registered with this service. If you wish to receive Reverse 911 on your cell phone or Voice Over Internet Protocol (VOIP) phone, you need to register your phone number with the emergency 911 dispatch center. More information on registering your phone can be found at <http://www.norcom.org/reverse911.cfm>.

Amateur Radio: Above ground utilities can be disrupted during a wildland fire. Cell phone service can also be interrupted during an emergency when circuits are overloaded or transmission facilities are damaged. Because of this, the community should examine alternative emergency communication methods in case phone service is not available. This could consist of handheld FRS (Family Radio Service) radios, which are relatively inexpensive, don't require a license and work over distances of around a mile. Amateur (HAM) radio is another option, although radios are more expensive and require training and a license to operate. The local ARRL (American Radio Relay League) group should be contacted for more information.

Evacuation Plan

Fire can be an unpredictable and powerful force. Despite the best efforts of federal, state and local fire agencies, a fire may burn out of control and threaten residents and homes in an area. As a contingency Mountain View Fire and Rescue should have an evacuation plan in place for the Foothills Community area. Residents should educate themselves on how to prepare for an evacuation, when to evacuate, how to leave their homes in a fast and efficient way, and when they can return once the area is safe. Pets and livestock should be included in considerations. Refer to the Resource Kit CD-ROM for more information on evacuation plans.

Because of the single road access to the Foothills Community area and the surrounding fuel loads, a quick moving fire could prevent residents from evacuating. Establishing a "safety zone" (a large, cleared area) where residents could gather and safely wait out a fire if a road is blocked should be part of the evacuation plan.

One possible project could be to work with the Mountain View Fire and Rescue and the Washington State Department of Natural Resources to conduct a wildfire drill in the Foothills Community area. This could be a simple tabletop exercise where the community tests its communications and evacuation procedures.

CERT

Another all-hazards way to reduce risk from fires and natural and human-caused disasters is to consider starting or joining an existing Community Emergency Response Team (CERT). CERT is a U.S. government sponsored program that educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT members can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members also support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

CERT training is usually coordinated by the local fire department. Foothills Community residents interested in CERT training should contact Mountain View Fire and Rescue for details on the CERT class. More information about CERT can be found at: <https://www.citizencorps.gov/cert/>

A Suggested Plan

First six months

- Distribute Firewise literature to neighborhood residents
- Conduct a Firewise neighborhood tour
- Implement simple Firewise risk reduction measures (cleaning gutters, trimming shrubs, relocating wood piles, etc.) on individual properties
- Develop a forest management plan including exploring the requirements and suitable locations for shaded fuel breaks with county and state agencies; begin work on creating breaks (if appropriate)
- Create emergency contact phone tree
- Apply for Firewise Community status

Year one

- Hold a neighborhood cleanup event, work with county to have a “Chipper Day”
- Participate in a fire evacuation drill and have individual and/or neighborhood emergency plans in place
- Develop an alternative communications (FRS or Amateur Radios) plan
- Review forest management plan to ensure healthy forests and implement any needed thinning or other forest practices
- Conduct an annual Firewise audit to measure fire risk reduction and identify areas of improvement
- Renew Firewise Community status

Year two

- Implement more labor intensive Firewise risk reduction measures
- Work with surrounding neighborhoods to implement Firewise practices, work with the county to expand “Chipper Day” participation
- Complete shaded fuel breaks (if planned)
- Conduct the annual Firewise audit and renew Firewise Community Status

Year three

- Continue working with state and/or county on a large Firewise project
- Implement more costly Firewise risk reduction measures
- Conduct the annual Firewise audit and renew Firewise status

Chapter 7

Getting Firewise Communities/USA Recognition

While any homeowner can implement Firewise practices it's important to note that fire doesn't recognize property boundaries. By working together, a community can increase the safety for all homes in an area. The Firewise Communities/USA program grants special recognition to communities that come together to create a more fire-safe place to live.

Getting Firewise Communities/USA recognition is an achievable goal that demonstrates a community's commitment to reducing the risks of wildfire. This chapter outlines the requirements and what the Foothills community needs to do to be awarded this distinction.

Why Become Recognized?

Why should a community apply for national Firewise recognition? Here are some good reasons:

- Helps create a sense of community, of belonging. People who work together for a common goal tend to build stronger neighborhoods. The program opens up communications between neighbors.
- Engages more neighbors in preparing for wildfire safety. The more Firewise homes, the less chance that a home may catch fire and spread to other homes in the neighborhood.
- Encourages attractive and welcoming landscapes. Firewise landscaping is aesthetically pleasing.
- Increases possible grant sources for common projects.
- Provides access to national Firewise organizations resources including:
 - Quarterly publications
 - Online Learning Center
 - National biannual Convention
- Establishes relationships with local fire agencies.

What's Involved?

The Foothills community as a whole may apply for Firewise Communities/USA or a subset of adjoining properties can apply. Here are the steps involved in getting Firewise Communities/USA recognition:

1. Establish a Firewise Board. The board consists of community members who are interested in helping the Foothills area become more fire-safe.
2. Complete a community assessment and create a plan that identifies agreed-upon achievable solutions to be implemented by the community. State, county and local agency representatives must approve the assessment and plan. (The plan and assessment in this document fulfills both of these requirements and has been approved.)
3. Observe a Firewise Communities/USA Day each year that is dedicated to a local Firewise project. Projects can include yard debris cleanup days, public education events, or any community project designed to reduce the risks of wildfire. Your first Firewise Day may be getting together to complete the forms to receive Firewise recognition.

4. Invest a minimum of \$2 per capita annually in local Firewise projects. Most communities meet this requirement through volunteer time. See the "How Much Does It Cost?" section below for details.
5. Complete and submit a Firewise Communities/USA application form. A copy of the form (Firewise Community Application.doc) is included with the CD-ROM Resource Kit that comes with this plan. The form should be submitted to the WA-DNR contact listed in Appendix A of this document.

It's up to the Firewise Board, in cooperation with Mountain View Fire & Rescue, to pursue Firewise Communities/USA status. When approved, the Foothills community (or a subsection) achieves recognition and is included among a select group of neighborhoods in the United States; at present only a handful of communities in King County have received this distinction. (See: http://submissions.nfpa.org/firewise/fw_communities_list.php for a nationwide list of communities.)

Each year the Firewise Board submits an application and documentation to renew Firewise Communities/USA recognition. The annual requirements include holding a Firewise day event and investing a minimum of \$2 (usually as "in-kind dollars", see below) per community member in Firewise activities.

How Much Does It Cost?

It doesn't cost anything to apply for Firewise Communities/USA status (or renew annually, once your community is recognized).

The program does stipulate that the community must invest a minimum of \$2.00 per capita annually in local Firewise projects if they want to maintain their recognition status.

With approximately 83 people in the community, that means each year \$166 needs to be invested in Firewise projects. Keep in mind that doesn't mean the community needs to raise that much money or spend out-of-pocket dollars each year. First, volunteer time counts. The current rate for volunteer compensation is a bit over \$20 an hour (\$21.01 in 2010 according to http://www.independentsector.org/volunteer_time?s=value%20). So if a single person volunteers an hour of time on a Firewise project, he or she has met the annual \$2.00 per capita requirement for 10 people.

Based on a population of 83, a total of only 8 volunteer hours for the entire community needs to be logged each year on Firewise projects. It doesn't matter how many people are logging the hours (although the more the better), just that the hours are recorded. (Volunteer forms are included in the Resource Kit CD-ROM included with this report.)

Second, individual efforts count toward the community. Let's say you landscaped your yard and used fire tolerant plantings. The total cost of your landscaping could be applied to the community's \$166 annual Firewise investment.

As you can see, it's easy to meet this monetary requirement.

Here are some examples of Firewise projects that would count toward yearly:

- Providing public education (presentations or information booths on Firewise concepts)
- Cleaning your gutters
- Creating defensible space around your house
- Attending Firewise meetings (local board meetings or national conferences)
- Participating in community projects (such as removing overhanging limbs from streets, creating fuel breaks, or improving emergency road access)

Note: The time and fees involved in preparing this report can be applied to the \$2 per capita annual investment and fulfills the first year's requirement.

How Long Does The Process Take?

On a national level, most communities take 12 to 24 months to complete all of the Firewise Communities/USA requirements. However, in the case of Foothills community the process will be accelerated since the assessment and plan have been completed and the fees involved in creating this report can be applied to the annual \$2 per capita investment. The primary requirements are holding a Firewise Day event and submitting an application. Once these tasks are completed, the approval process should take 6 to 8 weeks.

Is There Grant Money Available for Projects?

The Foothills Community Firewise Board may identify large-scale projects such as fuels reduction or road improvements that could significantly reduce wildfire risk. These projects may be too costly for the community to undertake. However, it is possible there will be funding available for certain projects through federal, state, and county grants. The Resource Kit contains information on potential funding sources.

For More Information

Check out the official Firewise Communities/USA Web site at:

<http://www.firewise.org>

You'll find stories and photos from a number of communities that have received the distinction.

Appendix A

Contacts

Firewise

King County Department of Natural Resources and Parks
Linda Vane, Forestry Program
201 S Jackson St, Suite 600
Seattle WA 98104-3855
linda.vane@kingcounty.gov
206-477-4842

Mountain View Fire and Rescue
Tim Perciful, Public Information Officer
32316 - 148th Ave SE
Auburn, WA 98092
Phone 253-735-0284
Fax 253-735-0287

Washington State Department of Natural Resources
Jane Potter, Wildlands Fuel Specialist
950 Farman Ave N
Enumclaw WA 98022
jane.potter@dnr.wa.gov
360-802-7030

Sarah Foster, State Firewise Coordinator
Olympia, WA
sarah.foster@dnr.wa.gov
360-902-1704

National Firewise Communities
www.firewise.org

Emergency

Valley (Fire) Communications 253.372.1300
27519 108th Ave. SE
Kent, WA 98030

U.S. Forest Service 360-825-6585
Enumclaw Office
450 Roosevelt Ave.
Enumclaw, WA 98022

Law Enforcement

Black Diamond Police 253-631-1012
P.O. Box 309
25510 Lawson St.
Black Diamond, WA 98010

King County Police 206-296-3883
Precinct 3
22300 SE 231st
Maple Valley, 98038

King County Office of Emergency Mgmt. 206-296-3830
Washington State Patrol 425-649-4370
2803 156th Ave SE
Bellevue, WA 98007

Utilities

King County Department of Transportation 206-296-6590
Road Services Division 1-800-527-6237
201 S Jackson St
Seattle, WA 98104

Black Diamond Public Works 360-886-2560
P.O. Box 599
24301 Roberts Drive
Black Diamond, WA 98010

Washington State Department of Transportation 206-440-4000
NW Region Office
15700 Dayton Ave
Shoreline, WA
P.O. Box 330310 Seattle, WA 98133

Puget Sound Energy 888-225-5773
P.O. Box 97034
Bellevue, WA 98009

Other

Red Cross (King County Chapter) 206-323-2345
1900 25th Ave. South
P.O. Box 3097
Seattle, WA 98114

Metro Transit 206-684-1162
201 S Jackson St
Seattle, WA 98104

Enumclaw School District 360-702-7100
2929 McDougall Ave
Enumclaw, WA 98022

Black Diamond Community Center 360-886-1011
31605 3rd Ave
Black Diamond, WA 98010

Appendix B

Contents of the Foothills Community Firewise Resource Kit

The Foothills Community Firewise Resource Kit is a CD-ROM that contains a number of different information sources designed to help you create and maintain a Firewise Community. This document lists the contents of the CD-ROM and describes each file on it.

Most of the files are in Adobe Acrobat (PDF) format and can be viewed and printed with Adobe Reader. (If you don't have a copy of the program you can download it from www.adobe.com.) Firewise Community application forms are in Microsoft Word (.DOC) format and can be opened by many different word processors. Click on a link to open a document.

What's On The CD-ROM

2009 Fire in Washington.pdf - The Washington State Fire Marshall's annual report of emergency responses in the state. Full of data on fires, their causes and costs.

2010 Fire in Washington.pdf - The latest Washington State Fire Marshall's report.

Black Diamond CWPP Assessment.pdf - A fire assessment of the Black Diamond area conducted for the DNR by a consultant in 2008.

Campfires.pdf - DNR information about campfire and fire pit safety.

CERT FAQ.pdf - Frequently asked questions about the U.S. government's Citizen Emergency Response Team program.

Citizens Corps Volunteer Liability Guide.pdf - An overview of legal issues and approaches to address liability for volunteers.

DNR Fireworks Safety.pdf - A Firewise Safety poster produced by the Washington State Department of Natural Resources. It may be freely copied and distributed.

Firewise Community Application.doc - A Microsoft Word document that contains the application for becoming a Firewise Community.

Firewise Community Renewal.doc - An application for annually renewing your Firewise Community status once you have achieved the distinction.

Firewise Contacts.doc - A list of state and county Firewise contacts.

Firewise Funding Sources.pdf - Information about funding sources for Firewise projects and how to apply for grants.

Firewise Matching Funds for Homeowners.pdf - A form for recording Firewise activities for matching fund grants.

Firewise Plant List 2009.pdf - A list of fire resistant landscape plants for the Puget Sound Basin.

Firewise Volunteer In-Kind Tracking.pdf - A form for tracking in-kind volunteer Firewise hours.

Firewise Volunteer Signup Sheet.pdf - A volunteer signup form for Firewise projects.

Firewise Volunteer Time Sheet.pdf - A form for tracking hours spent volunteering on Firewise activities.

Internet Communication Resources.pdf - Information about using the Internet for Firewise communications including Yahoo! accounts that have been created for your community.

Knox Box Information.pdf - Information about lock boxes used to provide emergency fire department access to locked gates.

Foothills Community Firewise Assessment.pdf - Assessment form completed by Madden & McNamara during an August 2012 fire assessment of the Foothills area.

Foothills Community Wildfire Protection Plan.pdf - An electronic version of the September 2012 Foothills Community Firewise plan. (Microsoft Word format documents of the plan chapters are also included.)

Wildfire Evacuation Process.pdf - Information about community fire evacuations.