

TRILOGY AT REDMOND RIDGE

COMMUNITY WILDFIRE PROTECTION PLAN

January 2016

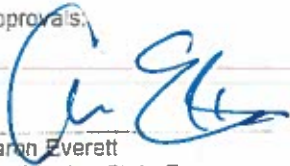


Prepared by King County Department of Natural Resources and Parks
with assistance from Washington State Department of Natural Resources
and the Redmond Fire Department

Acknowledgements and Approvals

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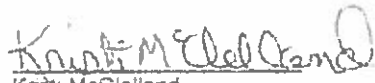
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About The Plan

What This Plan Includes

The Trilogy at Redmond Ridge (TRR) Wildfire Protection Plan is designed to educate community members about the risks of wildland fire and to guide the implementation of actions to mitigate those risks in the Trilogy at Redmond Ridge community located in King County, Washington, northeast of the city of Redmond. The plan includes general information about wildfire, specific wildland fire threats in TRR, how these threats can be mitigated, and how the community can participate in the voluntary Firewise program (including getting recognition as a National Firewise Community/USA). This plan was sponsored by King County's Forestry Program in the Department of Natural Resources and Parks using federal funds allocated under the Secure Rural Schools and Community Self-Determination Act, Title III.

Who This Plan Is For

The plan was developed primarily for Trilogy at Redmond Ridge residents. Elected officials and agency representatives may also find the content useful.

How To Use This Plan

You don't need to read this document from cover-to-cover to get the most out of it. The following roadmap should help you effectively navigate through the plan.

- To learn about the **Firewise** program, read **Chapter 1**.
- To understand **how wildland fire behaves**, and **what you can do to reduce your risks** read **Chapters 2 and 3**.
- To get a **profile of Trilogy at Redmond Ridge** (including fire-related environmental characteristics), read **Chapter 4**.
- To find out about potential **wildland fire threats in TRR**, read **Chapter 5**.
- To read about ways to **mitigate wildland fire threats in TRR**, refer to **Chapter 6**.
- To learn how **Trilogy at Redmond Ridge** can gain **Firewise Communities/USA recognition**, read **Chapter 7**.

A companion resource kit has been provided to the TRR Forest Stewardship Committee. The CD-ROM resource kit contains a number of references, information sources and forms. To learn more about the kit, and what comes with it, refer to the README file on the CD-ROM.

The recommendations made in this plan are based on fire probabilities for the conditions observed at the time of the assessment in 2015. This plan is intended as a guide for reducing the risk of damage to property and infrastructure in the TRR community should a wildfire occur. Wildfire behavior can be unpredictable, and no plan can address all potential fire scenarios. The Trilogy at Redmond Ridge community should continue to work with the Redmond Fire Department/King County Fire District 34 as well as the Woodinville and Duvall Fire Departments as appropriate to adapt this plan to changing conditions and community needs.

Chapter 1

Firewise, Dollar-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 are 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 that 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 have the option of participating 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).

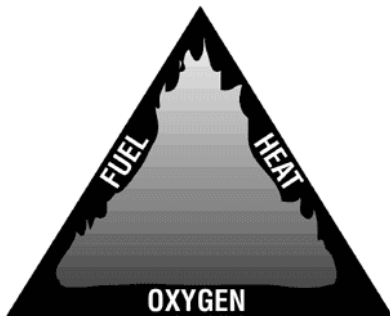


Figure 2-1: The fire triangle consists of heat, fuel and oxygen.

When there's not enough heat generated, when the fuel is exhausted, removed, or isolated, or when the oxygen supply is limited, 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 critical. Some type of a heat source is required to ignite a fire (lightning, matches, cigarette butt, fireworks, etc.) and heat is needed to maintain the fire 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. (Fuels are discussed in the next section.)

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

- **Convection** is heat transfer through the air, such as when hot air rises 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, 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 fast 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 into 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 in which 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**, or how much combustible fuel there is in a given area, is 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 soil and other methods to smother burning fuels. The soil 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. 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. Moisture content in dead fine fuel is highly dependent on the relative humidity and the amount of sun exposure. The lower the relative humidity and the greater the sun exposure, the drier the fuel. 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.

Chapter 3

Getting In The Zone

Two factors generally determine the survivability of a house during a wildfire. The first is the house itself. 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, fasciae, 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 reduce the potential for the fire to grow. One way to do this is by knowing about the *home ignition zone*.

A *home ignition zone* includes the house and everything within 100 to 200 feet of the structure. The extent of the zone depends on topography and vegetation. 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 the radiated heat to low enough levels that the house will not catch on fire. This critical 30-foot zone is often referred to as *defensible space* or *survivable space*. See Figure 3-1 to get a better idea of Firewise zones.



Figure 3-1: Example of Firewise Zones in Trilogy at Redmond Ridge. Neighboring properties can have interconnected zones.

The foundation to 30 feet and 30 to 100 feet areas (based on 2009 King County GIS data) are overlaid on an aerial photo of TRR in Figure 3-1. Many homes are only 10 feet apart due to the 5-foot minimum side lot line setback requirement, which makes neighborhood cooperation extremely important in reducing fire risk.

To understand zones, first visualize your property as a target with your home as the bull’s eye (Figure 3-2), the yard as the first ring (Zone 1), and additional zones with varying levels of fuel management as you move further from the structure.

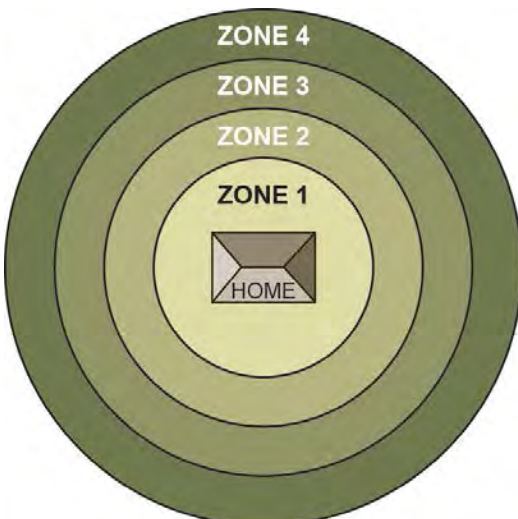


Figure 3-2: Wildfire ignition zones

Zone 1 = 0 to 30 feet away from the home

Goal: Create “survivable space” by reducing fuels and allowing space for firefighting equipment.

Zone 2 = 30 to 50 feet away

Goal: Reduce fire intensity and keep fire from reaching the tree canopy.

Zone 3 = 50 to 100 feet away

Goal: A healthy, diverse, appropriately stocked forest with reduced potential for intense fire.

Zone 4 = 100 feet away on level ground up to 200 feet away on a steep slope.

Goal: This zone is furthest from structures. In forested areas thin selectively to maintain healthy tree growth.



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

If you reduce amount and type of fuels around a house, you decrease the amount of heat that is generated adjacent to the structure during a wildfire. This increases the home's survivability.

- 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.
- 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.
- Remove dead vegetation (leaves and pine needles) from gutters, under decks, and within 10 feet of the house. Mow the lawn regularly.
- Think lean, clean and green: Use a 3 to 5-foot swathe of gravel, crushed rock, or other non-combustible materials around structures.

For more information on the home ignition zone and things you can do to your home and your property, visit these Web sites:
www.firewise.org **and** www.kingcounty.gov/environment/waterandland/forestry/forestfire.aspx.

Chapter 4

Trilogy at Redmond Ridge Profile

This chapter presents a brief profile of the Trilogy at Redmond Ridge (TRR) community (see Figure 4-1). General demographic, economic, public safety and environmental features are discussed. (Note: Chapter 5 addresses specific wildland fire threats and vulnerabilities.)

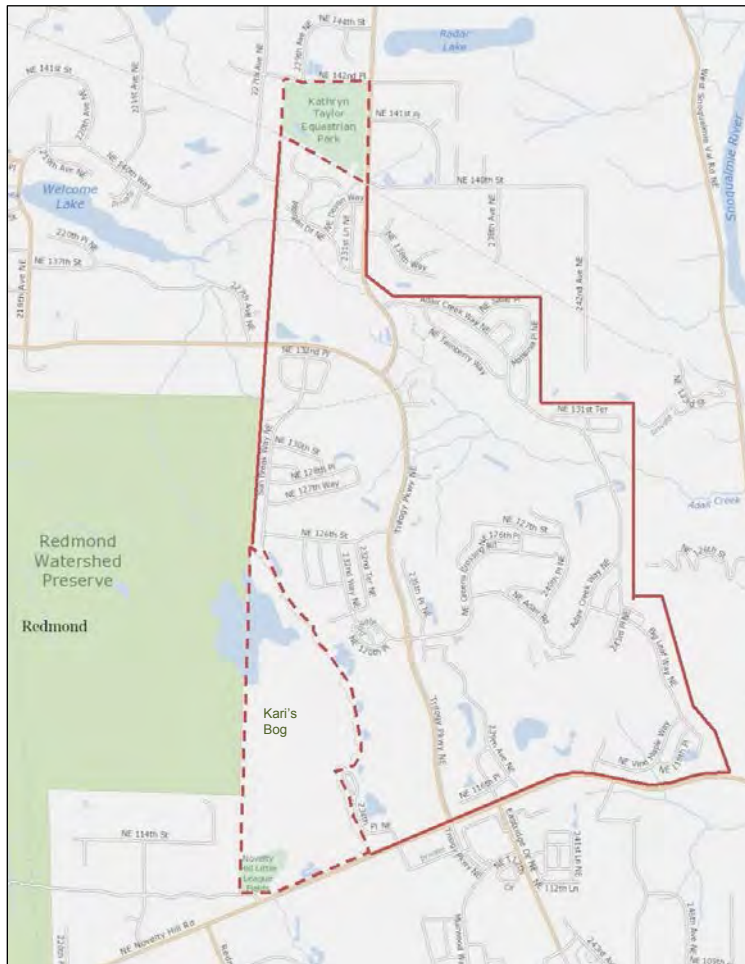


Figure 4-1: The Trilogy at Redmond Ridge community (outlined in red) is east of Redmond and west of the Snoqualmie River Valley. (King County GIS)

Community

Trilogy at Redmond Ridge (TRR) is an age restricted 55+ Urban Planned Development (UPD) within unincorporated King County. The development includes residential (single family to multi-family) and commercial buildings, a golf course, and dedicated greenbelts.

Excluding golf course properties, there are about 500 acres of greenbelt within the TRR community. This acreage abuts residences both within TRR and areas adjacent to TRR (such as the public golf course and other municipal greenbelts). TRR is transected by public rights of way for county roads and other public utility installations.

Originally, the Port Blakely Mill Company acquired this property in the early 1900's as a timber supply for its Bainbridge Island mills. Port Blakely harvested the timber from this land around 1930; there was no planting or seeding done after the harvest. The forest reestablished itself naturally and remained unaltered except for some incidental forest thinning that was performed in the 1960's. It was during the 1960's that Port Blakely determined that this property would likely be converted to development in the future. Port Blakely Mill Company originally began planning for a development on this property in the 1980's. This is when the concept for development became a "55+, age-restricted community." In 1998 Port Blakely Communities sold the property to Quadrant Corporation, who started development shortly thereafter. The first homes were sold in 2002. Development continued for the next 13 years.

The primary access road through the community is Trilogy Parkway NE. This road runs mostly north from NE Novelty Hill Road for about 2 miles before it bends to the west and becomes NE 133rd Street. At the bend, the road intersects with 232nd Ave NE, which flows north almost to Old Woodinville-Duvall Road. There are also additional access roads from the southeast corner of TRR onto NE Novelty Hill Road.

The nearest commercial services are in the Village at Redmond Ridge shopping center adjacent to the south boundary of Trilogy across Novelty Hill Road.

There are 1,522 housing units in Trilogy with an occupancy rate (as of 2015) of nearly 100%. (At any given time, some homes are unoccupied as they are on the resale market.) These homes have a total land and improvements assessed value of \$836 million (as of 2015). The total population, based on an estimated 1.8 occupants per residence, is 2,740.

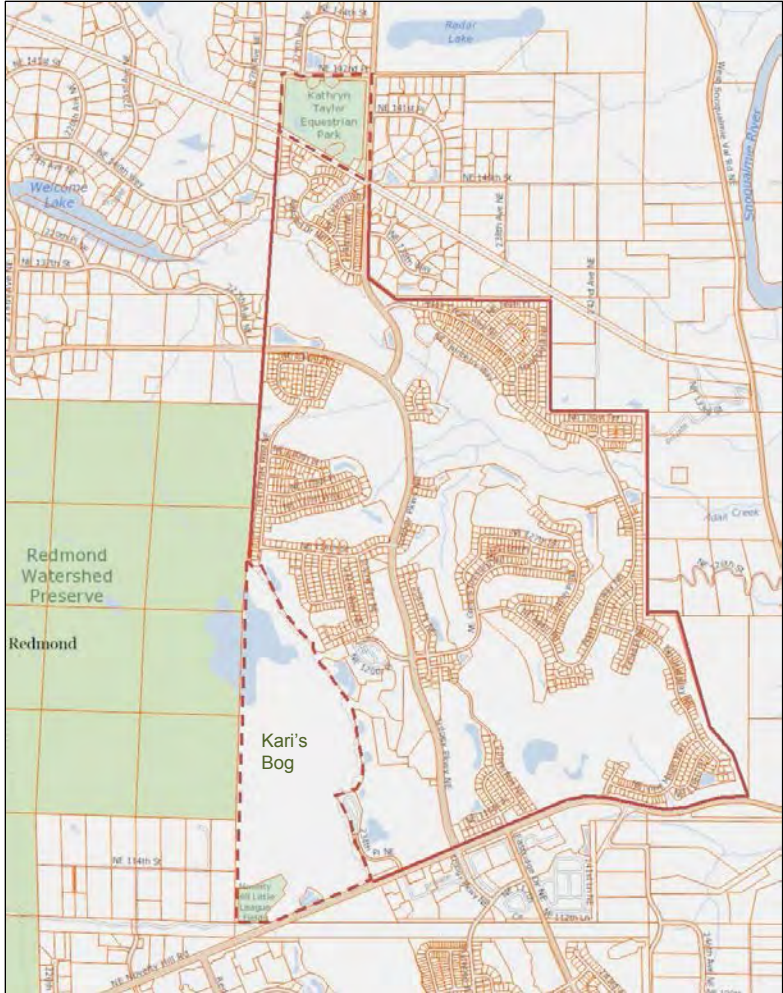


Figure 4-2: Trilogy at Redmond Ridge community parcel map. (King County GIS)

Most of the homes in TRR are served by short driveways and are close to the street. However, there are a number of cul-de-sacs and pipestems that are used to access multiple homes. Streets and cul-de-sacs are generally wide enough to provide adequate access for emergency vehicles. However, there are a few instances in TRR where streets become narrow such as the sharp curve in NE Adair Road where it crosses over the large culvert at the top end of Adair Creek and becomes Adair Creek Way NE. Parking along streets is restricted to one side of the street in newer divisions.

The Trilogy at Redmond Ridge Residential Community Association (TRRRCA) provides typical homeowners association services and governance and maintains designated community areas and facilities through contracted services. Road maintenance within TRR is provided by King County.

Water System

The Redmond Utility District provides water for most of TRR, although the Woodinville Water District provides water for the northern portion. Redmond is a member of the Cascade Water Alliance (CWA – www.cascadewater.org) and buys more than 65% of its supply from the Seattle Public Utilities Tolt Reservoir (www.seattle.gov/util/environmentconservation/ourwatersheds/tolt_river_watershed) through the CWA. The Woodinville Water District purchases its water from the City of Seattle. The rest of the

drinking water supply comes from five wells that serve the areas of Redmond east of the Sammamish River.

There are fire hydrants throughout TRR, all providing a flow capable of fighting fires.

Fire Protection

TRR falls into three districts for fire protection services: Redmond/King County Fire District (KCFD) 34, Woodinville Fire and Rescue, and Duvall-KCFD 45.

The majority of fire protection for TRR is provided by the Redmond Fire Department under an agreement with King County Fire District #34 (Redmond Fire, www.kcfd34.org). Station No.18 is located 2.1 miles from the southern entrance of TRR at 22710 NE Aldercrest Drive, Redmond, WA. This fire district covers approximately 28 square miles and serves around 23,000 residents between the three fire stations.

The northern portion of TRR above the intersection of Adair Creek Way NE and 232nd Ave NE falls into the Woodinville Fire and Rescue District. The cluster of homes along the north end of Adair Creek Way NE and connecting streets that lie north of the intersection of Adair Creek Way NE and NE 134th Place are included in the Woodinville District. This district covers about 30 square miles and serves around 46,000 residents between three stations. Woodinville Station 33 (19401 NE 133rd St, Woodinville, WA) is approximately 2.2 miles from the NE 133rd Street entrance of TRR.

A small part of the eastern portion of TRR along Big Leaf Way NE and NE Vine Maple Way is in Duvall-King County Fire District 45. Station 66 (15600 First Ave NE, Duvall, WA) is approximately 4.4 miles to the 242nd PI NE entrance off NE Novelty Hill Road.

As with all area fire departments, the three fire districts work together during emergencies. Calling 911 will automatically get the fastest response.

Fuels

One of the primary attractions of the TRR community is its natural setting. Most of the greenbelt is relatively pristine, lowland Puget Sound forest that was naturally regenerated with mixed coniferous and hardwood species following harvest in the early 1900's. The post logging environments and the proximity to wetlands influenced the species composition. The oldest trees are generally 70 to 80 years of age. In most cases these forest stands are fully stocked and the wetland soils are capable of satisfying the individual needs of species. Aspect and physical slope characteristics are generally not an influencing factor on the tree species.

The TRRRCA and its Forest Stewardship Committee have a long-range goal of maintaining these areas in a natural state. They plan on converting aging red alder stands to more site-appropriate conifer and shrub stands. Particular attention is being paid to Western Hemlock trees, as a root disease is prevalent throughout TRR.

Coniferous and deciduous trees and native vegetation are apparent throughout the community (see Figure 4-3 for an aerial view) in greenbelts and trail corridors. There are also large tracts of forested land adjacent to the development.

Tree species observed that are dead and dying include Western Hemlock, Red Alder, and Western Red Cedar. Wetlands are abundant within the development. Standing water can rapidly kill Western Hemlock trees. Thick stands of dry salmonberry abut many residential lots.

The greenbelts inside of TRR are managed by the TRRRCA and its management contractor with the cooperation and assistance of the Trilogy Forest Stewardship Committee. The Trilogy Board of Directors reviews and approves proposed actions per the Trilogy Forest Stewardship Management Plan, page 10. The Forest Stewardship Committee manages a robust volunteer program that accomplishes much of the work of maintaining the community wooded areas including removal of accumulated fuels and maintenance of trails. The community's management goals and objectives for the forested areas are detailed in the Forest Stewardship Management Plan, which was approved by King County in 2014.

The Kathryn Taylor Equestrian Park and the Kari's Bog wetland, outlined with dotted lines in Figure 4-3, lie within the Trilogy at Redmond Ridge boundaries but are managed separately from the greenbelts discussed in this plan.



Figure 4-3: 2012 aerial photo showing vegetation in Trilogy at Redmond Ridge and immediately surrounding land. (King County GIS)

Most of the land abutting TRR to the north and east is privately owned. The Kathryn Taylor Equestrian Park occupies the north end of TRR between NE 139th Court and NE 142d Place and to the west of 232d Ave NE. The Redmond Watershed Preserve borders TRR to the west and abuts two TRR residential clusters along the central portion of TRR's east boundary. The Redmond Watershed Preserve forested area is contiguous with TRR forested and wetland areas in the Collin Creek Trail and Kari's Bog areas. An Oki Redmond Ridge Golf Course fairway and maintenance areas form a buffer between the Kari's Bog wetland and TRR residential and Cascade Club facilities at the southwest corner of TRR. The TRR recreational vehicle parking lot filled with numerous mobile homes and travel trailers abuts the Kari's Bog wetland in the southwest corner of TRR.

Topography

The topography of Trilogy at Redmond Ridge is generally flat with some rolling hills (see figure 4-4). There are steep ravines crossing the community in several locations. TRR is located adjacent to steep, wooded lands on the east and southeast. These wooded slopes extend into the development via the ravines, primarily along Adair Creek.

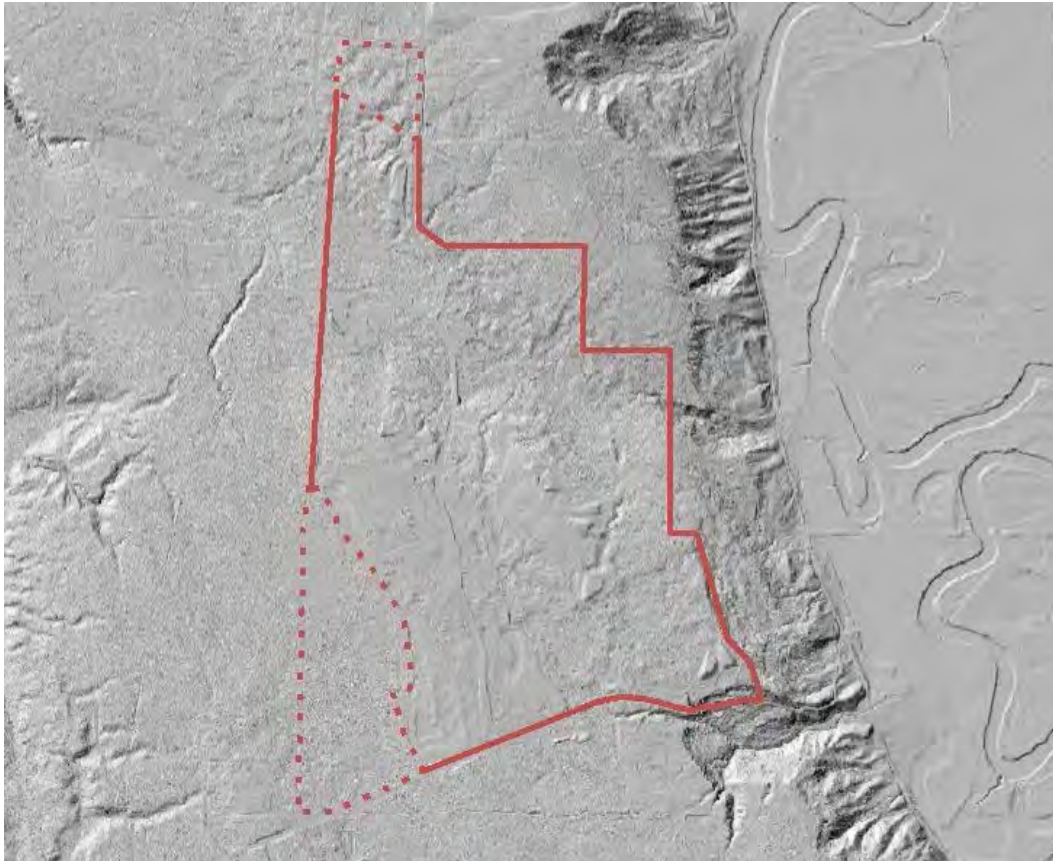


Figure 4-4: *Trilogy area topography (King County GIS)*

The bluff to the east has affected the development of the community. Many lots along the east side of TRR have large concrete block retaining walls at the rear that were constructed to provide level building sites by filling the rear portions of the lots. Some of these walls are quite tall, and the residences overlook heavily wooded areas. Dry salmonberry and other combustible forest debris abut these retaining walls in numerous locations.

Weather

Located between Puget Sound and the west Cascades, the Redmond area typically experiences total rainfall and snow in amounts that are similar to other areas west of the Cascades in Lowland Puget Sound, with the highest levels of precipitation during the winter and spring months. This precipitation pattern tends to delay the start of fire season, with the driest times of the year occurring in July and August. (See Figures 4-5 and 4-6.)

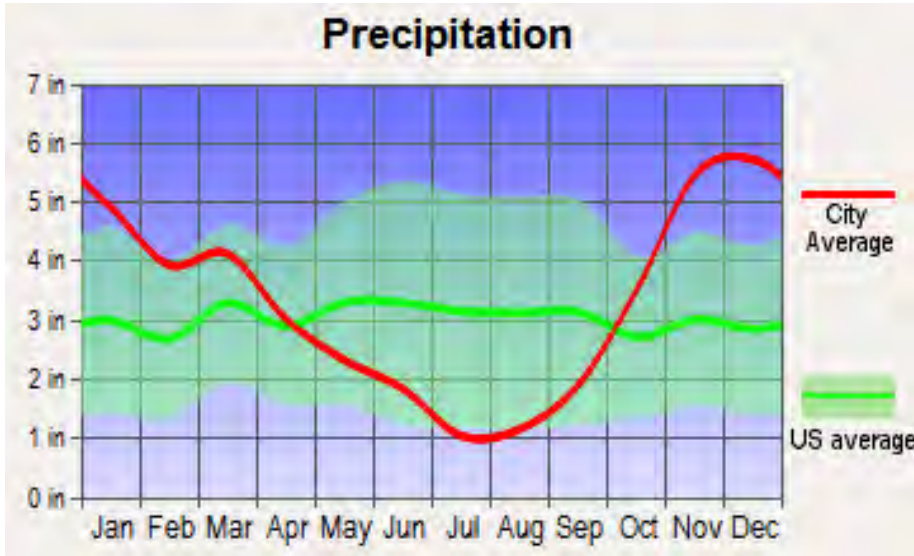


Figure 4-5: Redmond average precipitation.

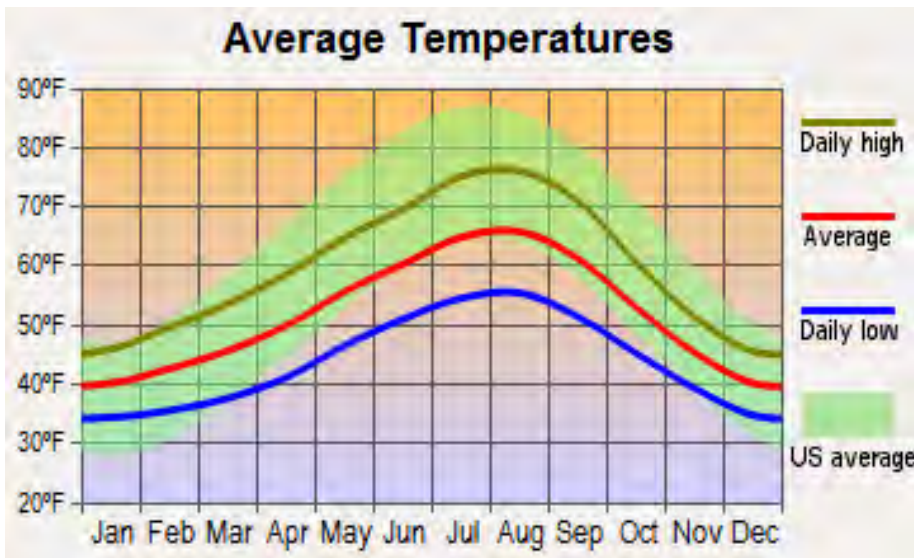


Figure 4-6: Redmond average temperatures.

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

Local wind conditions can have a significant impact on fire behavior. As with many areas located west of the Cascades, Redmond is occasionally subject to east wind events. These occur when high pressure builds east of the Cascades and warm air is forced to the west. These winds can dry fuel, cause trees to fall across power lines, and increase the risk of a fire.

Chapter 5

Trilogy at Redmond Ridge Issues & Threats

To assess fire threats and vulnerabilities, the Trilogy at Redmond Ridge (TRR) development was surveyed in August 2015. Representatives from King County Department of Natural Resources and Parks met with representatives of the TRR Forest Stewardship Committee and drove through TRR and the surrounding area, noting potential threats using a wildfire danger evaluation form currently in use with the Washington State Department of Natural Resources (WA-DNR). The form is based on 2006 International Wildland-Urban Interface Code Appendix C and 2002 NFPA 1144 Annex A. A copy of the completed form is included at the end of this chapter.

The area scored a 30, which is at the low end of Hazard rating. However, there are specific hazards (wooded slopes on the east and southeast, forested ravines/greenbelts interspersed throughout the development) that could cause fire to travel from the slopes and nearby forested areas into the community.

Significant factors that contributed to the score such as vegetation, limited road access, and topography are discussed in this chapter.

Fire History

In evaluating wildland fire threats, it's useful to first start with the fire history of an area. Figure 5-1 shows some of the non-structural fires reported near TRR from 1970 to 2013.

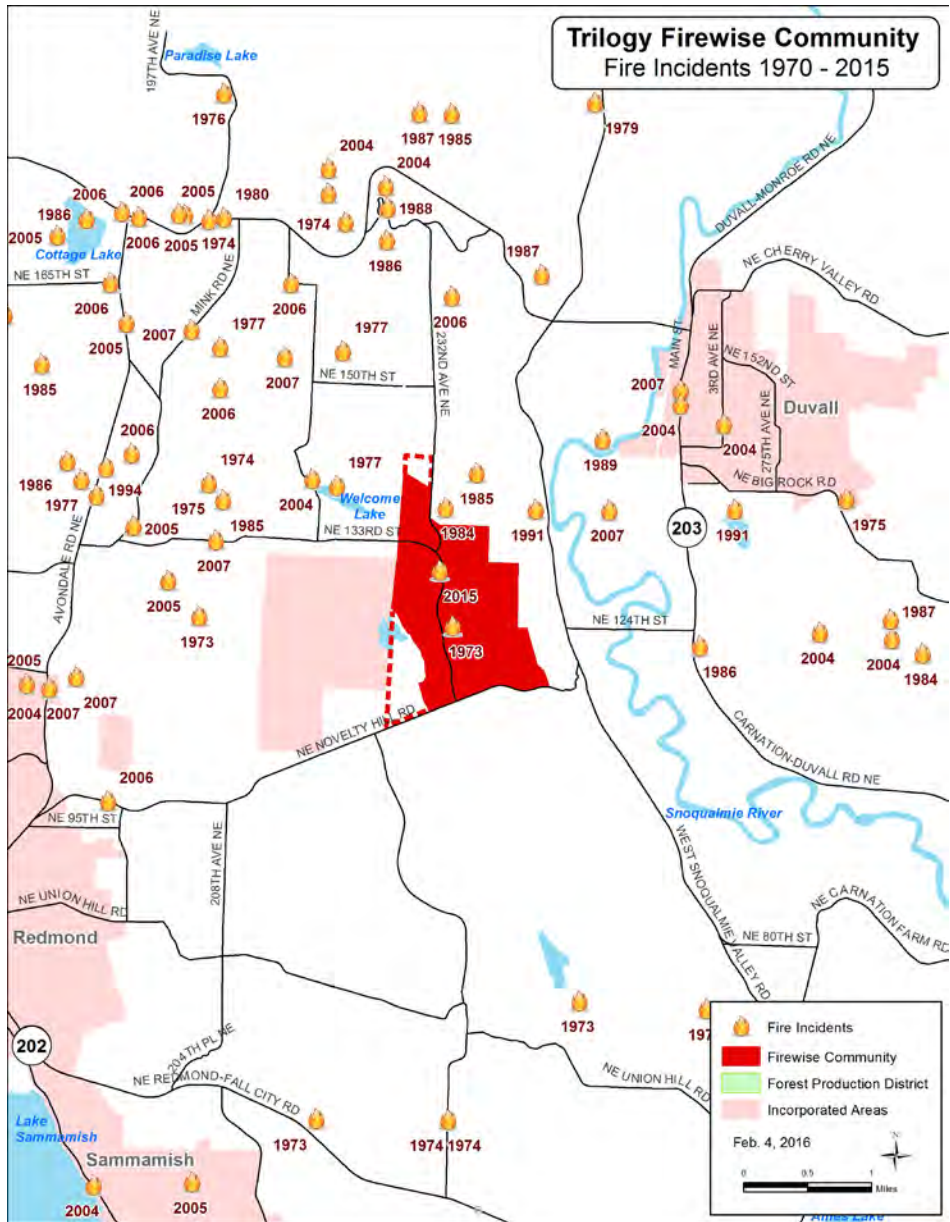


Figure 5-1: Non-structure fires near Trilogy at Redmond Ridge (King County GIS)

Archived data for 2014 and 2015 was not available at the time this plan was developed. However, lightning hit a tree adjacent to Trilogy Parkway NE in mid-August, 2015, immediately setting it on fire. Fortunately, the fire was quickly reported, and fire crews extinguished it before fire could spread into the greenbelt. (Figure 5.2)



Figure 5-2: Fire crew extinguishing tree fire following lightning strike in August, 2015

Wind Driven Embers



Figure 5-3: Wind driven burning embers (firebrands) can quickly spread a fire.

One of the biggest threats TRR faces is a wildland fire on the east slopes accompanied by wind from the east. These steep slopes and ravines within TRR can carry fire and embers into the community. Wind-blown, burning embers (also called firebrands) shown in Figure 5-3, can spread a fire far in advance of the main flame front. During strong winds it's also possible for firebrands from a structure fire to spread flames to other structures or nearby vegetation.

Adjacent Forest Lands

Trilogy at Redmond Ridge has heavily forested lands abutting the development on the east and west sides. Portions of the western side of the development border the Redmond Watershed Preserve and Park. This is a fairly well-used hiking, biking and equestrian park. The trail networks of the Preserve and TRR are connected. There is minimal risk of fire ignition due to human activity, as no fires are allowed in either area. Fairways of the Oki Redmond Ridge Golf Course wind through most of TRR. The golf course is, in general, well maintained, and one fairway and the course maintenance area act as a natural buffer between forested areas of the Preserve and Kari's Bog wetlands and the southwest portion of the TRR development. However, there are portions of unmanaged grass and dry vegetation such as salmonberry that border most fairways, in some cases immediately abutting decks of residences. (See Figure 5-5.)

One of the Tolt Pipelines, the Kathryn Taylor Equestrian Park, and larger lots with private homes in the adjacent Lake of the Woods development (including horse/livestock pastures) make up the northern boundary.

The south side of the development is bordered by NE Novelty Hill Road and The Village at Redmond Ridge shopping center across NE Novelty Hill Road to the south.

Terrain

While most of the developed portion of TRR is relatively flat, the eastern side of the development is located above a steep, forested slope. Many homes along the east boundary are situated above high retaining walls with an abundance of fuel material adjacent to the bottom of the walls. Forests in TRR extend throughout the development via ravines and greenbelts. The steep slopes to the east are also subject to east winds. Along the bottom of this slope (West Snoqualmie Valley Road on the east and NE Novelty Hill Road on the southeast) is a heavily traveled traffic corridor. Sparks from malfunctioning vehicles/equipment, a carelessly discarded cigarette butt, or a lightning bolt could start a fire that would rapidly spread uphill and immediately endanger the homes along the east and southern sides of the development. A fire could also spread through the ravines and greenbelts that are located throughout the development.

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 Trilogy at Redmond Ridge area consists of grasses, understory, and a forest dominated by evergreen trees (Figures 5-4, 5-5 and 5-6).



Figure 5-4: Typical TRR fuels: forest. The fuel loads of wooded areas can increase the risk of fire spreading through the community.



Figure 5-5: Typical TRR fuels: brush and weeds. Unmanaged dry grasses, brush and invasive weeds such as blackberry are present within the development and can be adjacent to homes. In this photo, unmanaged brush along the edge of a golf course fairway abuts the deck of a home.



Figure 5-6: *Typical TRR fuels: grasses. Grasses and herbaceous weeds in private property abutting the north boundary of TRR along NE Salal Place.*

Grasses and brush can become extremely flammable in hot, dry conditions (see Figure 5-6). Due to the fuel load, residences could be affected by a large-scale fire incident in any of the wooded areas surrounding the community. In addition, lots in TRR are small enough that adjacent private properties are almost always within 65 feet of a TRR home, well within the 100-foot home ignition zone (see pp. 7-8).

The average annual rainfall of 35 inches is only slightly below the average for the U.S. (37.5 inches) and typical of annual precipitation in lowland King County. Regardless of rainfall during winter and spring months, prolonged summer drought conditions can dry out fuels, increasing wildfire risk, especially when there are concentrations of downed trees and limbs from storm events and the accumulation of dry brush such as salmonberry.

Subdivision Design

Trilogy at Redmond Ridge is a high density, age 55+, urban planned development of single-family homes. The homes are a mix of attached and unattached houses. Small lots are the most common. Typical setbacks are 5 feet from side lot lines and 15 feet from rear lot lines. However, to offset this density, there are many public greenbelts located throughout the community. These greenbelts include steep ravines and are usually connected to each other and to the forested eastern slopes.

There is a 50-foot undeveloped buffer surrounding the community. (The buffer is indistinguishable where the TRR forested buffer along the west side merges with the Redmond Watershed Preserve forests.) TRR Residential Community Association rules significantly restrict homeowners from performing any maintenance in any areas outside their own home sites.

Due to the small lots and minimal lot line setbacks, many homes do not have 30 feet of space to develop defensible space. In addition, it is common for stands of greenbelt trees to be well within 30 feet of a home. With this proximity, wooded areas within 15 feet of rear lot lines (and 30 feet where decks are built to rear lot lines) should be treated as being within the home's 30 feet of defensible space and the 100-foot home ignition zone. (See pages 7-10.)

Forest Health

The 500 acres of forested greenbelts and trail corridors throughout Trilogy at Redmond Ridge are generally healthy. These forested areas are diverse and include an extensive network of wetlands. The management of the primary forested area emphasizes forest health, maximizing wetland function, wildlife habitat and aesthetics. And, included in the community's forest management objectives, is the intention to "manage forest residue accumulations consistent with fire prevention protocols."



Figure 5-7: Adair Creek Trail, view #1



Figure 5-8: Adair Creek Trail, view #2

Figures 5-7 and 5-8 above show sections of *the Adair Creek Trail* where mature trees were blown down during the December, 2006 storm. New forest growth where mature trees fell and were subsequently logged is apparent along the left side of the trail in these photos. The young trees should be thinned as they grow larger.

The forested greenbelt on the right side of the trail in Figure 5-8 illustrates the forest stewardship practices underway in TRR. The mature stand on the right has been thinned to remove weak and dead trees and encourage vigorous growth among the healthier trees that remain. Dead limbs and ladder fuels have been removed to reduce wildfire risk.

However, some groups of trees in the greenbelts show signs of stress or disease – yellowing needles and excessive needle drop and/or dead branches (Figure 5-9). Pockets of root rot are known; especially in most Hemlock stands, not an unusual circumstance where wet soils are common. Healthy trees are green and have at least a third of the tree height in leaves or needles.



Figure 5-9: *Yellowing needles and numerous dead branches are indications that trees are not healthy. This photo was taken in the TRR east buffer area at the bottom of the Adair Creek ravine*

When dry, these needles and intact dead branches act as ladder fuels that can allow a ground fire to move quickly into the tree canopy. When these dry, dead materials fall to the ground, they become fuels that can quickly spread fire to adjacent properties.

Greenbelt Conditions

The community greenbelts that wind throughout the development have high concentrations of downed limbs and branches from past windstorms along with the expected accumulation of dead twigs and branches one finds on the forest floor. In addition, dense brush and native shrubbery are commonly found throughout the TRR greenbelts, particularly along trails and edges of forests. These can also act as ladder fuels in allowing a ground fire to move into the tree canopy. (Figure 5-10) Also, thick stands of salmonberry that become excessively dry during drought conditions line many of the trails and greenbelt edges in TRR and often abut rear property lines of residences.



Figure 5-10: Ladder fuels and dry brush along trails. The photo on the left shows tall arborvitae lining the pergola behind a home adjoining a greenbelt. The photo on the right shows a thicket of dry salmonberry along the Adair Creek Trail behind homes built atop a concrete block retaining wall.

Flammable vegetation mixing with tree limbs can provide a path for fire to climb up a tree. The tree and native shrubs shown in the left photo of Figure 5-10 are just a few feet from residential landscaping and well within 30 feet of a home. The risk to the residence from wildfire could be reduced by removing the lower limbs from the tree so that they do not touch the shrubs and small trees in the understory. The use of arborvitae and other highly flammable decorative species close to homes and adjoining structures such as decks and pergolas should be discouraged.



Figure 5-11: Examples of fuel concentrations in the community greenbelt alongside the Adair Creek Trail. The steep ravine lies just beyond the row of trees shown in the left photo.

Due to the density of the homes in TRR, a forested area is almost always within 15 feet of homes adjoining greenbelts, and there are approximately 500 of those. With this proximity, the edge of the greenbelt, currently treated as a sensitive and protected area, should instead be treated as being within the home ignition zone. While preserving native fire-resistant ground cover and low shrubbery, trees should be limbed up and thick dry brush and woody debris removed and chipped, with the chips being blown back into the forest where they will decay quickly. Alternatively, woody debris can be gathered into piles placed well away from trees and structures, where the debris will decay while providing habitat for wildlife.

Flammable Landscaping

While the landscaping in Trilogy at Redmond Ridge is generally well maintained, there are certain landscape plantings that can increase fire risk, regardless of condition. Many residences in the community have vegetation growing in close proximity to structures and directly beneath eaves and soffits (Figure 5-12). Highly flammable plants, such as decorative arborvitae and yews (See Figure 5-13), are not recommended near a residence. Even placed away from homes, resinous plants can increase fire risk since flames can quickly spread from plant to plant and set fences and decks on fire.

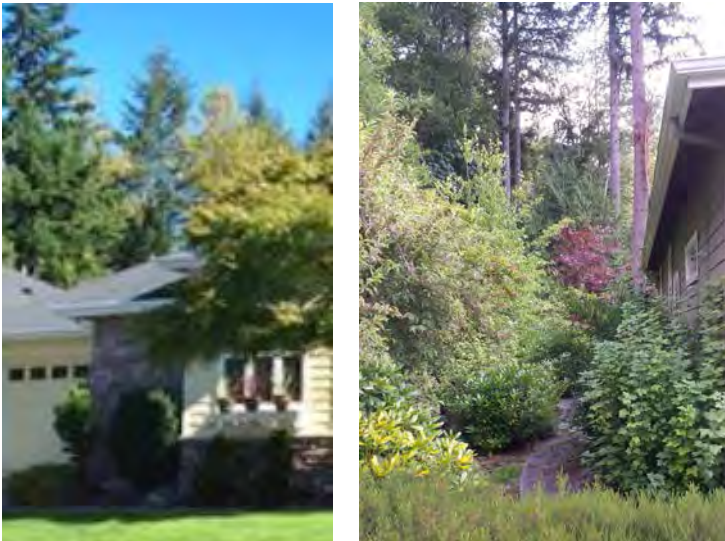


Figure 5-12: Foundation plantings: Shrubs touching the house. (left photo King County Assessor)

As landscaping matures, vegetation can grow too close to structures. Shrubs and trees should not touch structures and should never be placed beneath eaves and soffits which are arguably the most flammable parts of homes in TRR. Shrubs are best kept pruned at least 2 feet away from structures. Tree branches are best kept at least 6 feet away and should not overhang roofs.

Flammable Privacy Plantings

A common landscaping feature in Trilogy at Redmond Ridge is a privacy planting (Figure 5-13) consisting of a row of arborvitae, cedars, junipers or other varieties that are not fire resistant. These resinous species hold onto old, dead needles on the inside and become highly flammable, especially during hot weather. When placed in a row (commonly used to provide privacy) a fire can rapidly follow the entire row of plants, acting like a large fuse. If the plants are near a fence or home, this can lead the fire to the house and start the structure on fire.



Figure 5-13: *Flammable privacy plantings near home and connected to the wooden fence.*

When it comes to landscaping, there are a variety of fire resistant plantings such as broadleaf evergreens that are safer, yet are still aesthetically pleasing, and can provide desired privacy.



Figure 5-14: *Even when located away from a residence, resinous plants can quickly spread flames between plantings, catching other fuels on fire. Note dead plants in the privacy hedge near the house.*

If a row of plants does not create an uninterrupted line of fuels within 10 feet of the house or is outside the 30-foot defensible space of Zone 1) this may not be a threat; although burning plants may still produce embers, which can spread a fire. Another common landscape feature is a specimen planting next to the house (sometimes in a container) which positions the plant underneath the eaves of the house. This is another place for embers to collect. If the plant catches fire, it could lead the flames underneath the eaves, catch the underside of the roof or soffit on fire, and spread into the attic.

Fences and Decks

Anything connected to a house that can burn can be a hazard, especially if there are flammable plants nearby. Embers landing on or against wooden decks and fences (Figures 5-15 and 5-16) can ignite those structures. The fire can then spread to a house or other buildings.



Figures 5-15: *Raised wooden decks can accumulate flammable material underneath.*

Wind-blown dead vegetation such as leaves, pine needles, and small branches can easily gather under wood decks that don't have screening or lattice (as shown in Figure 5-15). Embers can ignite this debris, catching the deck and then the house on fire.



Figure 5-16: *Wooden fences connected to structures can spread fire.*

Another way fire can spread to a house is when a firebrand or embers collect against a wooden fence and start it on fire. If the fence is connected directly to the house (Figure 5-16), fire can spread to the structure. Metal flashing between the fence and the house can reduce the chance that the house will ignite. Fortunately, the Hardiplank concrete fiber siding used on all homes in TRR is resistant to ignition.

Access and Evacuation Routes

Trilogy Parkway NE is the main access road for the community. This large, well-maintained road exits to the south at NE Novelty Hill Road and, at the north end of Trilogy at Redmond Ridge, bends to the west where it becomes NE 133rd Street.

The large population of TRR and the surrounding communities may make a rapid evacuation difficult, but not impossible. Cars parked along the roadside could create choke points along some of the more narrow streets; however the community has parking regulations in newer areas that should help to alleviate any traffic congestion.

Some cul-de-sacs and dead-end roads offer limited turnaround opportunities for fire equipment.

Right of Way Management

Seattle Public Utilities has the Tolt Pipeline 2 easement that runs through the community (see Figure 5-17). From a fire perspective, right of ways can be beneficial or detrimental, depending on the control of brush and other combustible material.



Figure 5-17: *Vegetation along the Seattle Public Utilities Tolt Pipeline 2 easement*

If left unmanaged, a right of way can become overgrown with a variety of flammable vegetation as shown in Figure 5-17. The nature of a right of way allows for unimpeded wind flow. The combination of flammable vegetation and strong winds can rapidly spread a wildfire.

Buffer Access and Maintenance

In addition to the issues described above, there is the issue of ongoing maintenance along the buffer zone between TRR residences and the largely forested private properties on the east side of the Trilogy at Redmond Ridge.



Figure 5-18: *Blocked access to the buffer zone along the east side of Trilogy at Redmond Ridge.*

Access to major portions of the buffer zone along the rear property lines of homes east of Adair Creek Way NE has been blocked by two fences installed by a private property owner, making maintenance of the buffer zone almost impossible. The fences line portions of the side lot lines of the Seattle Public Utilities lot containing equipment of the Tolt Pipeline 2.

Neighborhood Wildfire Hazard Evaluation Form		
<i>This form is based on 2006 International Wildland-Urban Interface Code Appendix C and 2002 NFPA 1144 Annex A</i>		
Community Name – Trilogy at Redmond Ridge		
Location - King County, Washington, east of the City of Redmond		
Primary Access Road Name – Trilogy Parkway NE		
Evaluation Date - 2015		
Evaluators - Linda Vane, King County Department of Natural Resources and Parks, and Jeff Madden		
A: Neighborhood Design	Score	Rating
Access		
Two or more primary roads	0	0
One road through	3	
One road in and out (entrance & exit are the same)	5	
Gate		
Not gated	0	0
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	1
Less than 20'	3	
Road Grade		
5% or less	1	1
Greater than 5%	3	
Road Type		
All weather, paved	0	0
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	1
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	1
Missing, or present with <4" letters or non-reflective letters	3	
	Sum:	4
Notes:		

Neighborhood Wildfire Hazard Evaluation Form, continued

B: Vegetation / Fuels	Score	Rating
Fuel Type		
Light (e.g., grasses <6", deciduous leaf litter)	1	
Medium (e.g., grasses >6", conifer litter, light brush, small trees)	5	1
Heavy (e.g., dense brush, timber)	10	4
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	2
Most tree branches close to ground or understory fuels	5	
Defensible Space		
70% or more of neighborhood	1	5
30 - 70% of neighborhood	10	
Less than 30% of neighborhood	20	
	Sum:	12
Notes:		
Homes on small lots with narrow setbacks from property lines, not a lot of space between homes. Defensible space involves multiple homes and forested areas.		
Maintained buffer around community (needs work on east side of TRR.)		
Lots of variation in vegetation. Brush and dry grass, adjacent forestland fuel concentrations, brush and tall grass along golf course fairways.		
Flammable landscape plants next to some homes		
C: Topography and Weather		
Weather		
History of high fire occurrence	0 - 5	0
Exposed to unusually severe fire weather and strong, dry winds	0 - 5	1
Local weather conditions and prevailing winds	0 - 5	2
Slope		
8% or less	1	
8 - 19%	4	3
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:	9
Notes:		
Mostly flat with some rolling hills in development		
East side and southeast steep, forested.		
Some ravines with dense vegetation located throughout development.		

Neighborhood Wildfire Hazard Evaluation Form, continued

D: Building and Property Construction	Score	Rating
Roofing		
More than 75% of homes have metal, tile, class A asphalt or fiberglass shingles	0	0
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	0
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	0
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:	0
Notes:		
A few accessory structures have shake roofs; recommend upgrade to Class A roof when replacing roofs.		
E: Fire Protection - Water Source		
Score		
Rating		
500 GPM hydrants spaced within 1,000'	0	0
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	
	Sum:	0
Notes:		
Hydrants present		
Redmond additional water sources for engines, tankers, helicopters.		
F: Utilities		
Score		
Rating		
Electric		
Underground, clearly marked	0	0
Underground, not clearly marked	1	
Overhead, with adequate right of way (>20')	2	
Overhead, with right of way not maintained	5	

Neighborhood Wildfire Hazard Evaluation Form, continued

Gas		
Underground, clearly marked	0	0
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:	0
Notes:		
G: Surrounding Landscape	Score	Rating
Neighborhood is predominately within low fire hazard mapping area	0	
Neighborhood is predominately within moderate fire hazard mapping area	10	5
Neighborhood is predominately within high fire hazard mapping area	15	
Neighborhood is predominately within extreme fire hazard mapping area	20	
	Sum:	5
Notes:		
Neighborhood Hazard Ratings		Sum
A: Neighborhood Design		4
B: Vegetation / Fuels		12
C: Topography and Weather		9
D: Building and Property Construction		0
E: Fire Protection - Water Source		0
F: Utilities		0
G: Surrounding Landscape		5
Total:		30
Neighborhood Hazard from Wildfire Rating Scale		
Low		< 70
Moderate		71-110
High		111-135
Extreme		> 135

Chapter 6

Recommendations

Chapter 5 lists some of the wildfire vulnerabilities and threats present in Trilogy at Redmond Ridge (TRR). Chapter 6 provides recommendations for addressing vulnerabilities and decreasing the risk of loss of life and/or property during a wildfire incident.

The recommendations include:

- Educate property owners about Firewise principles and practices
- Reduce fuel sources
- Work with the Trilogy at Redmond Ridge Residential Community Association (TRRRCA) to start using 'Firewise' plants and update governing documents as appropriate
- Ensure Firewise practices are applied to community common spaces and around homes
- Explore the use of emergency communication systems
- Establish a formal community evacuation plan
- Consider forming a Community Emergency Response Team (CERT) which could include a Firewise Community Committee that would focus on wildfire prevention and Firewise principles and practices

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 community education and small clean-up projects the first year and then move on to more ambitious 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 Public Education and Application

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.

Simple awareness of basic Firewise principles and practices can do much to mitigate wildland fire risk. Updating community rules as appropriate and educating community members about 30-foot defensible space zones and 100-foot home ignition zones should be a priority. Once educated, residents can then begin to deal with some of the vulnerabilities identified in Chapter 5 by applying Firewise practices such as:

- Raking under raised decks to prevent flammable debris from accumulating
- Swapping flammable plants with less flammable ones in landscaping
- Pruning tree and shrub limbs to eliminate ladder fuels, both near homes and in the greenbelt areas within 50 feet of homes (Zones 1 and 2, see Figure 3-2), preventing a ground fire from moving up into the trees (TRRRCA approval required for residents to perform work in common areas.)
- Creating gaps between clumps of trees and shrubs to interrupt any continuous lines of fuel to structures

To inform the greatest possible number of people about Firewise, a variety of methods should be used. These could include presentations by recognized authorities at town hall meetings, written material targeted to property owners, and distributing available Firewise educational material.

Other public outreach ideas to consider are:

Walk-arounds – An effective way to demonstrate Firewise landscaping and defensible space principles is to take a walk around the neighborhood and along trails, pointing out good and not so good examples of Firewise practices. This could include tours of community greenbelts where Forest Stewardship Committee activities have reduced fuel accumulations. An alternative workshop indoors could begin with a short slide presentation on Firewise principles, followed by questions from the attendees about landscaping and construction features.

Garden Club – Train the garden club in Firewise principles. Have the club work with interested property owners to improve their landscaping. This may be especially useful over time as shrubs and trees in home landscapes grow larger and require pruning or replacement.

Work with the TRRRCA - Suggest that, as flammable plants in current landscaping need replacement over time, they be replaced with species that provide the same aesthetic value but are less flammable.

Create demonstration landscape/Firewise homes – Identify homes with good examples of Firewise landscaping (using yard signs or maps). Include examples of privacy hedges that do not use resinous plants. Showcase Firewise alternatives to common issues.

Firewise Literature – King County and Washington State Department of Natural Resources (WA-DNR) both have Firewise brochures and educational materials. Additional materials may be ordered from the www.firewise.org web site. The TRR Cascade Club could keep brochures on hand for seasonal residents or new residents that move into the community. A “Welcome Basket” of informational materials could be sent to new residents.

Spreading the Word – While Firewise practices in TRR will help reduce wildfire risk inside the neighborhood, the entire Redmond Ridge area is at risk due to the large amount of wildland urban interface land. The more property owners that employ Firewise practices, the better. Getting the word out by simple word of mouth or suggesting Firewise presentations in the schools or other forums can help. Beyond that, Firewise communities have used a number of different techniques to inform others about the program, including:

- Articles on homeowners association and community club web sites
- Articles in local newspapers
- "Give-away" items with tips, hints, and other Firewise-related information. Free Firewise literature and promotional items can be ordered from the non-profit National Fire Protection Association at www.nfpa.org/catalog/; select the “Wildfire Safety” category.
- Social networks such as Facebook, Twitter and other media are great ways to both get information out to neighbors (refer to the Resource Kit for more information)

Fuels

The forested land that surrounds Trilogy at Redmond Ridge, coupled with the area's topography, the high volumes of traffic, and easterly winds increase the risk of a wildfire.

Managing vegetation and fuels that increase fire danger can help to mitigate this risk. Once hazardous fuel sources are identified, the community can work to reduce fuel loads, ensure vegetation on road right of ways is managed, and keep the trails and common areas free of dead and dry vegetation. Continuing the practice of organizing community projects, such as reducing fuels from the development's common areas, is recommended.

Chipper Day – One proven Firewise activity is for the community to continue to have wood chipper days. Participating volunteers drag unwanted brush from the greenbelt to a location where a volunteer or professional crew chips and disposes of the brush. The chips may be used on trails, as mulch, or hauled off to an appropriate location.

The most likely source of risk to the community is wind-blown embers. If embers encounter fuels, particularly fine fuels such as mulch or needles in decorative plant containers, spot fires could be ignited throughout the community. If there are continuous lines of fuel from spot fires to structures, the structures could ignite.

The existing forest stands are being managed to improve overall forest health. This will also reduce the risk of wildfires spreading through the forest (remember: a healthy forest is a safer forest). The forested greenbelts, which are interspersed throughout Trilogy at Redmond Ridge, could provide wildfire a path to homes in the development. The forest does not have to be removed to increase safety; however, it should be managed with the goal of forest health and safety by applying Firewise principles.

- Where allowed, increase the number of homes and structures where the landscape is managed to create appropriate defensible space. Due to the close proximity of homes, this will require cooperation between neighbors.

One of the best ways to minimize damage to homes is to reduce the fuel around the house to create defensible space within 30 feet of structures (Zone 1), and reduce fuels in the 100 to 200-foot home ignition zone (see Figure 3-2). Refer to the King County Wildfire Safety Best Management Practices or visit www.kingcounty.gov/forestry and select '*Firewise community wildfire safety planning*'.

- Trilogy at Redmond Ridge has taken great steps to maintain the health of their extensive greenbelts. A comprehensive Forest Stewardship Management Plan was created in 2014 and approved by King County that provides great guidance on managing their forest. It is critical to follow the plan and monitor the health of the greenbelt to the sylvan environment while reducing risk from wildfire in the 100 to 200-foot home ignition zone. Spacing between individual tree canopies or clumps of trees is of critical importance. The stewardship plan should be reviewed periodically to ensure that the goals and objectives are being met.

Flammable Landscaping

With the majority of landscaping being managed by the TRRRCA, the Firewise project team should work with the Association to ensure that appropriate species are used throughout the community's landscape. For the most part, the landscaped areas use appropriate broadleaf trees and shrubs, native plants and groundcovers that are considered "fire resistant." In this case fire resistant means that the plants lack the oils and resins that can increase fire intensity. More flammable species (those that are very resinous or collect a lot of dead needles and vegetation) should be replaced when appropriate with less flammable, fire resistant, species.

Where more flammable species are used, the dead needles and vegetation should be removed on a regular basis. Many needles may be removed by a simple shaking of the plant followed by a good raking. Education of residents should place emphasis on this.

The community should consider the placement of plantings in close proximity to eaves of structures. Plants should be placed out from under the eaves. Moving the plants out away from the structure not only reduces the risk of spreading fire, but it allows better access to the structure for maintenance (window cleaning, painting, etc.) and removes possible pathways for insects. Where plants cannot be moved, regular pruning can keep vegetation from touching the house.

Flammable Privacy Plantings

Using plant species other than arborvitae or various decorative cedars and yews can maintain privacy. Laurel, viburnum, rhododendron, azalea, hydrangea and other less flammable species can be used to produce a thick, efficient privacy hedge. Many of these species produce colorful flowers as well.

When appropriate, replace the more flammable species with a shrub of less flammability (see the Firewise plant list for suggestions). If flammable plantings remain, once or twice a year shake the dead needles and litter out of the shrub, rake it up and remove the dead vegetation from the area.

For a list of appropriate Firewise plants, refer to these online publications:

- *King County Firewise Plants for the Puget Sound Basin* - www.your.kingcounty.gov/dnrr/library/water-and-land/forestry/forestfire/FirewisePlantsPugetSoundBasin-2011.pdf
- King County Native Plant Guide (and search for fire resistant plants) - www.green2.kingcounty.gov/gonative/Plant.aspx?Act=search
- Fire-Resistant Plants for Home Landscapes, a Pacific Northwest Extension publication - http://www.firefree.org/images/uploads/FIR_FireResPlants_07.pdf

Fences and Decks

Ideally, decks should be made of inflammable materials, such as Trex or other materials. These manmade materials are more difficult to ignite. To reduce the risk of a deck catching fire, keep it clean of debris, both on top and especially underneath. Many decks are constructed using composite products such as Trex for surface decking and railings, but the framing beneath most decks is often still made of flammable lumber. The area beneath a deck can be screened with 1/8" wire mesh to prevent embers from collecting under the deck. The wire mesh also prevents leaves and litter from building up as well as keeps out unwanted pests. The mesh may be covered with a trellis or other decorative covering. If it is not practical to screen the deck (due to height above the ground), be sure to keep the area well raked and do not store flammable items under the deck.

To prevent a fence from acting like a fuse, use metal flashing (or other non-flammable material) to connect the fence to the house. Another solution is to have a gate next to the house that can be opened (breaking the "fuse") in case of fire.

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 human 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. Although fireworks are banned within TRR, they are frequently set off on holidays in private property areas surrounding Trilogy at Redmond Ridge.

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. 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, the use of alternate routes, and when they can return once the area is safe.

One possible project would be to work with the Redmond Fire Department to conduct a wildfire drill in Trilogy at Redmond Ridge. This could be a simple tabletop exercise where the community tests its communications and evacuation procedures. Such an exercise should also consider what to do if Trilogy Parkway NE or a major through street such as Adair Creek Way NE was blocked due to fire/smoke across the road or a vehicle accident. (See Figure 6-1.)



Figure 6-1: Traffic stopped on Trilogy Parkway NE while fire crew extinguished a tree fire started by lightning in August, 2015.

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. In addition to a phone tree, email addresses should be exchanged as part of an emergency communication plan.

Regional Public Information and Notification (RPIN) - RPIN is a voluntary system that helps inform you about potential hazards and threats that impact your area. The features include voice messages to landlines, added geographical filters for areas of King County, and targeted types of alerts (e.g., safety information and/or emergency notifications). To learn more visit <http://www.kingcounty.gov/safety/prepare/RPIN.aspx>. To sign up, visit <http://rpin.alertsen.se/SignUp/?>.

Smart 911 – This supplemental service allows you to create a safety profile that emergency responders can see when you call 9-1-1. When you register with Smart911, you create a Safety Profile that includes any information about your household that you want ant 9-1-1 to have in the event of an emergency. Information may include address, medical, and security information. Then, when someone dials 9-1-1 from a phone associated with the household Safety Profile, the profile is immediately displayed to the 9-1-1 dispatcher. This additional information helps the dispatcher facilitate the proper response to the proper location. To learn more visit www.kingcounty.gov/safety/E911/Smart911.aspx. To signup, visit www.smart911.com.

Wireless Messaging – You can send a text message from your computer to cell phones if you have the service carrier ID and the cell phone number of the person you want to contact.

Before sending a text message, you will need to know the recipient's wireless service provider and the provider's ID. A partial list is provided below (Figure 6.2).

To send a message, on the email address line enter the service provider ID code followed by the recipient's area code + cell # with no dashes or spaces. areacode+cell#@txt.att.net

For example the AT&T cell phone number (206) 123-4567, would be entered as: 2061234567@txt.att.net.

Figure 6.2: Common carriers and their ID

Service Provider	How to address the message:
AT&T	areacode+cell#@txt.att.net
Cingular	areacode+cell#@cingularme.com
Cricket	areacode+cell#@sms.mycricket.com
MetroPCS	areacode+cell#@mymetropcs.com
Nextel	areacode+cell#@messaging.nextel.com
Sprint	areacode+cell#@messaging.sprintpcs.com
T-Mobile	areacode+cell#@tmomail.net
Tracfone	areacode+cell#@mmst5@tracfone.com
US Cellular	areacode+cell#@email.uscc.net or phonenumber@mms.uscc.net for picture messages
Verizon	areacode+cell#@vtext.com or phonenumber@vzwpx.com for multi-media messages
Virgin Mobile	areacode+cell#@vmobl.com

This means of contacting neighbors has been used by Firewise communities in eastern Washington. The limitation of this method is that not everyone will have text capability, a cell, or phone capability if the power goes out.

Amateur Radio – While the utilities in Trilogy at Redmond Ridge are below ground, above ground utilities that connect to TRR can be disrupted during a wildland fire, causing disruptions in service. 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. Contact the Redmond Amateur Radio Emergency Services (ARES) team or (www.redmond-ares.org) other local ARRL (American Radio Relay League) for more information.

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 affect 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. Trilogy at Redmond Ridge residents interested in CERT training may contact the Redmond Fire Department for details on a CERT class nearby. More information about CERT can be found at www.redmondccc.org or www.citizen Corps.gov/cert/.

A Suggested Plan

Completed in Year one (2015)

- Formed a Firewise Project Team as part of the Forest Stewardship Committee.
- Conducted a Forest Stewardship Town Hall Meeting featuring a Firewise presentation.
- Firewise Committee twice conducted tours of potential wildfire risks with King County Forestry staff in TRR open spaces, trail corridors and residential areas.
- Implemented initial Firewise risk reduction measures in concert with forest stewardship activities such as thinning and removing ladder fuels and woody debris.
- Completed a community wildfire risk assessment and developed a plan that identifies agreed-upon achievable solutions to be implemented by the community.
- Applied for a County Community Involvement Grant to help support Firewise activities.

Year two

- Apply for Firewise Community status with Firewise Communities/USA.
- Work with Seattle Public Utilities to gain access to the buffer zone currently blocked by fences.
- Work with King County foresters to address forest health concerns.
- Conduct community activities such as town hall meetings and resident training sessions.
- Revise community standards and practices to embrace Firewise Community/USA guidelines. Continue resident volunteer work parties to clear greenbelt fuels.
- Work with the TRRRCA to review plants used for landscaping. Where appropriate, suggest fire resistant plants as alternatives to more flammable plants. Create a suggested list of plants for homeowners to consider for their personal gardens.
- Work with Redmond Fire Department to develop a fire evacuation plan and have individual emergency plans in place.
- Develop an alternative communications (FRS or Amateur Radios) plan.
- Conduct an annual Firewise audit to measure progress in fire risk reduction.
- Renew Firewise Community/USA status.

Year three

- Continue to implement Firewise risk reduction measures.
- Consider identifying good examples of Firewise landscaping in the community. Point out examples with yard signs or in the community newsletter. Make this an annual event (May is National Wildfire Awareness Month).
- Encourage residents to participate in CERT training and consider forming a TRR CERT.
- Work with Forest Stewardship Committee to do an annual review of greenbelt condition.
- Conduct the annual community cleanup and renew Firewise Community/USA status.

Year four

- Continue to implement Firewise risk reduction measures.
- Continue with education process, make Firewise awareness an annual tradition.
- Conduct the annual Firewise audit and community cleanup, and renew Firewise Community/USA Status

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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 of all the homes in the area. This is especially important when the homes are as close together as they are in Trilogy at Redmond Ridge. 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 optional but achievable goal that demonstrates a community's commitment to reducing the risks of wildfire. This chapter outlines the requirements and what Trilogy 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.
- Can help when applying for grants and other programs.

What's Involved?

Following are the steps involved in getting Firewise Communities/USA recognition. Some of these were already been accomplished in 2015:

1. Establish a TRR Firewise Project team. This consists of community members who are interested in helping TRR become more fire-safe. (completed)
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 fulfill both of these requirements and have 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, educational events, or any community project designed to reduce the risks of wildfire.

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.

It's up to the TRRRCA Board of Directors, in cooperation with the Redmond Fire Department, to decide whether to pursue Firewise Communities/USA status. The majority of community residents should support the effort.

If the committee decides to move forward, a Firewise Communities/USA application is submitted to the county's Firewise representative, who will forward the application to the Washington State Department of Natural Resources.

When approved, Trilogy at Redmond Ridge will achieve recognition and will be included among a select group of neighborhoods in the United States; at present only eight communities in King County have received this distinction. (See: <http://www.firewise.org/usa-recognition-program/firewise-communities-list.aspx> for a nationwide list of communities.)

Each year the TRR Forest Stewardship Committee may submit 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 or the equivalent 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. However, this does not mean that a cash outlay is required. The value of volunteer time and donated labor and supplies count toward the \$2 minimum as well as money spent by individuals maintaining their property for wildfire safety.

For example, Trilogy at Redmond Ridge comprises 1,522 homes with an estimated occupancy of 1.8 persons per home. So the Trilogy community of approximately 2,740 residents would need to invest at least \$5,480 in various Firewise projects to meet this requirement. Again, 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 \$27 an hour (\$27.54 as of 2014, see www.independentsector.org/volunteer_time for more information on how this is determined). At this rate, the investment of 199 man hours of volunteer work in performing Firewise activities would meet the requirement.

With a total of 1,522 housing units, that's only about \$3.60 per house which is less than 8 minutes per house per year. Obviously not everyone will participate, but it does not take a lot of people to easily exceed the annual investment. It doesn't matter how many people are logging the hours (although the more the better), just that they are recorded. (Volunteer forms are included in the Resource Kit included with this report.)

Second, individual efforts count toward the community contribution. 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 annual Firewise investment. Even annual maintenance items like cleaning gutters (or paying someone to clean your gutters) can be used to meet the investment requirements.

As you can see, it's easy to meet this requirement. Examples of Firewise projects include:

- Educating the community (presentations, workshops, or information booths on Firewise concepts)
- Cleaning dead needles and twigs from your roof and gutters
- Creating defensible space around your house and along common areas
- Attending Firewise meetings (local committee meetings or national conferences)
- Participating in community projects (such as cleaning up greenbelts and common areas, removing dangerous plants and fuels)

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

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 Trilogy at Redmond Ridge, the process has been accelerated, since the assessment and plan have been completed and the cost of 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 TRR Forest Stewardship Committee may identify large-scale projects such as fuels reduction or thinning of densely forested areas on steep slopes or in buffer areas that could significantly reduce wildfire risk. These projects may be too costly for the community to undertake and/or too extensive for volunteers to accomplish. However, it is possible there may 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:

www.firewise.org

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

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Appendix A

Firewise Contacts

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

Redmond Fire Department
Provisional Captain Mark Freymuth
Station 18
22710 NE Alder Crest Drive
Redmond, WA 98053
425-556-2218
mfreyemuth@redmond.gov

Washington State Department of Natural Resources
Art Tasker, Region Manager
South Puget Sound District
950 Farman Ave. N.
Enumclaw WA 98022
art.tasker@dnr.wa.gov
360-802-7038
www.dnr.wa.gov

Washington State Department of Natural Resources
Megan Fitzgerald-McGowan, Washington State Firewise Coordinator
1111 Washington St SE
MS47037
Olympia, WA 98504
megan.fitzgerald-mcgowan@dnr.wa.gov
www.dnr.wa.gov

National Firewise Communities
www.Firewise.org

Information for 98053 zip code - (Redmond and unincorporated King County)

9-1-1 is for emergencies only: Call 9-1-1 only if you need an immediate response from police, fire or medics.

For non-emergencies, here is some contact information that may be useful:

Utility Companies

Puget Sound Energy (24 hr):

1-888-225-5773

www.pse.com

Seattle City Light:

206-684-7400 (24 hr Outage Hotline) or 206-684-3000

www.seattle.gov/light/talk

Police

King County (24 hr):

206-296-3311

www.kingcounty.gov/safety/sheriff.aspx

Online Reporting

www.kingcounty.gov/safety/sheriff/ReportToSheriff.aspx

Redmond:

425-556-2500

www.redmond.gov/cms

Fire and EMS

Redmond (also serves KCFD 34):

425-556-2200

<http://www.redmond.gov/cms/One.aspx?portalId=169&pageId=3028>

Woodinville Fire District:

425-483-2131

<http://wf-r.org/>

Duvall Fire:

425-788-1625

www.duvallfire45.com/

Roads, Transportation and Traffic

Travel Information:

511

www.wsdot.wa.gov/traffic/511

Redmond Public Works:

425-556-2701

www.redmond.gov/cms/One.aspx?portalId=169&pageId=2040

King County Roads (unincorporated areas):

1-800-527-6237

www.kingcounty.gov/transportation/kcdot/Roads/RoadsMaintenance.aspx

Washington State Patrol:

425-401-7788

www.wsp.wa.gov

Vehicle Collision Report: www.wsp.wa.gov/publications/collision.htm

Health and Human Services

Public Health:

1-800-325-6165

www.kingcounty.gov/healthservices/health.aspx

Washington Poison Center (24 hr):

1-800-222-1222

www.wapc.org

Crisis Clinic:

1-866-427-4747

<http://crisisclinic.org/>

Washington Information Network:

211

www.resourcehouse.info/Win211/

Other Services

King County Flood Warning Information Line (recorded flood phase information):

1-800-945-9263

www.kingcounty.gov/environment/waterandland/flooding/warning-system/phones.aspx

King County Flood Warning Center (staffed only during a flood event):

1-800-768-7932

www.kingcounty.gov/environment/waterandland/flooding/warning-system.aspx

American Red Cross serving King County:

206-323-2345 or 360-377-3761

www.seattlredcross.org/show.aspx?mi=4030

Regional Animal Services:

206-296-7387

<http://www.kingcounty.gov/safety/AnimalServices/animalcontrol.aspx>

Illegal Dumping:

1-866-431-7483

<http://your.kingcounty.gov/solidwaste/index.asp>

www.your.kingcounty.gov/solidwaste/cleanup/report-dumping.asp

King County Abandoned Vehicle Reporting (vehicle on the side of the road):

206-296-8100

www.kingcounty.gov/depts/transportation/roads/road-maintenance.aspx

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Appendix B
Trilogy at Redmond Ridge
Map of Potential Wildfire Risk Reduction Projects

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TRILOGY AT REDMOND RIDGE TRAIL MAP

TRAIL DATA:	LENGTH (MI):	SURFACE MAT'L:
▪ REDMOND RIDGE (KC REGIONAL)	1.72	PAVEMENT
▪ ADAIR CREEK	1.32	CHIPS/GRAVEL
▪ KARI'S BOG (KC REGIONAL)	1.30	GRAVEL
▪ COLLIN CREEK (KC REGIONAL)	1.07	GRAVEL
▪ SUNRISE LOOP	0.94	CHIPS
▪ ENCLAVES	0.42	CHIPS/GRAVEL
▪ DUCK/DIVIDE LAKE NATURE LOOP	0.28	NATURAL SOIL
▪ TENNIS COURT	0.21	CHIPS
▪ PALISADES	0.18	GRAVEL/CHIPS
▪ CEDAR HEIGHTS	0.16	GRAVEL/CHIPS
▪ VINE MAPLE	0.15	CHIPS
▪ THE FAIRWAYS	0.14	CHIPS
▪ CASCADE CLUB	0.09	GRAVEL
▪ KARI'S BOG OVERLOOK	0.04	CHIPS/GRAVEL

MAP LEGEND:	
	GREENSPACE - FOREST/WETLAND/BUFFER
	GOLF COURSE PROPERTY
	RECREATIONAL AREAS
	KING COUNTY REGIONAL TRAILS
	TRILOGY COMMUNITY TRAILS
	H-7 EMERGENCY GRID LOCATORS
	TRAIL BENCH LOCATIONS
	DOGGIE WASTE STATION LOCATIONS



Figure B-1: Map of potential wildfire risk reduction projects. The TRR Firewise Team identified the highest priority green belt and trail areas for the purposes of wildfire risk reduction planning. (TRRC 2015)