

Fire Hazards

The Town of Fairfax is at risk from two types of fire: urban fire and wildland fire. ~~Although large urban conflagrations of the past, such as the Chicago Fire of the mid-1800's, caused significant loss of life and property, improvements in architecture, building design, construction materials, and emergency response have helped to reduce the likelihood of reoccurrence. The Downtown area of Fairfax is at risk of a major fire event. Although it would not reach conflagration proportions, a fire could include multiple buildings in a city block. Downtown Fairfax consists of older construction of large buildings with substandard fire separations between buildings and limited onsite fire protection. A major fire in the Downtown would not only have a direct impact on the building owners and occupants, but it could also have a secondary impact on the historical aspects of the old Downtown and the economic viability of the community.~~

~~However, a large fire affecting the Town of Fairfax could still occur due to many causes, such as a spreading wildfire, an earthquake, gas leak, or arson. An emerging cause for concern is fires started by many forms of accidental causes and use of power equipment around very dry vegetation.~~

Given the trend toward infill development on the steep hillsides and canyons of Fairfax, urban fire remains a risk to life and property.

Wildland-urban interface (WUI) fire hazards are especially pronounced in areas of high structure densities adjacent to undeveloped open space areas with dense vegetation. These areas often contain older summer homes that have been converted to permanent residences, infilled with more modern construction, and are often situated on steep terrain with narrow winding roads. Wildland-urban interface fires result in death, injury, economic loss and a large public expenditure in fire fighting activities.

The California Department of Forestry and Fire Protection (CAL FIRE) has developed maps at the County level for both State Responsibility Areas (SRAs) and Local Responsibility Areas (LRAs). The Town of Fairfax, because it is incorporated and maintains its own fire service through the Ross Valley Fire Department is mapped as a LRA. The surrounding unincorporated area is mapped as an SRA.

Cal-Fire and the State Fire Marshal's office have responsibility to publish fire hazard severity zones for State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). The State produced a draft fire hazard severity zone map for the LRA areas of Marin. The map included Very High, High, and Moderate Fire Hazard Severity Zones. These maps are "Hazard Maps" in that they take in to account vegetation, topography, weather, crown fire potential, ember production and movement, and the likelihood of an area burning. These maps do not account for housing density. The final Cal-Fire map for LRA establishes only the Very High Fire Hazard Severity Zones.

In December of 2007 The Town of Fairfax established the Wildland-Urban Interface area within the Town. The Wildland-Urban Interface includes areas with a certain housing

density. These areas were evaluated for specific fuel type, slope and aspect. The development of the maps did not include fire history. Also, our maps are of the WUI areas. The State maps rate the fire danger and are not maps of the WUI.

The CAL FIRE maps indicate that the incorporated area of Fairfax lies in a high fire hazard severity zone, with the exception of a portion of the most northern part of Fairfax, which is undeveloped and classified as a moderate fire hazard severity zone. Most of the unincorporated land adjacent to the Town of Fairfax is mapped as a moderate fire hazard severity zone. A notable exception is the southwestern area in the vicinity of the White's Hill and Cascade Canyon Open Space Preserves.

State and federal fire risk mapping efforts may underestimate the true fire hazard for the Town of Fairfax because they do not take into account the specific vegetation types present in Fairfax and the surrounding area in their fuel model calculations. The models are based on a 50 acre grid which does not allow for the level of detail necessary to assess the local hazard. (See Figure 5.)

The Town of Fairfax Emergency Operations Plan identifies steep hill neighborhoods, such as Cascade Canyon, Forrest/Hillside, Oak Manor, Manor/Scenic Hill, and Willow/Upper Ridgeway at the greatest risk from wildland fire due to the dense vegetation, trees dead/dying of Sudden Oak Death, and the narrow access roads.

The Vegetation/Fuels Management Plan, prepared by the Ross Valley Fire Department in January 2008, includes a hazard assessment matrix to be used when evaluating specific properties. The matrix includes three factors: aspect, slope, and fuel. The fuels are representative of local vegetation, including specimen gardens, grass, brush, conifers, hardwoods, and chaparral.

Fire Services

The Town of Fairfax is served by the Ross Valley Fire Department (RVFD), which is a consolidated fire agency protecting the communities of Fairfax, San Anselmo, and Sleepy Hollow. The RVFD also has a contract with the County of Marin to provide fire protection services to County areas contiguous to the Ross Valley Fire jurisdiction, and is an active participant in the County and Statewide Mutual Aid System.

The Marin Municipal Water District has adopted minimum fire flow standards of 1,000 gallons per minute to water mains that feed the urban water supply and fire hydrants. There are approximately 400 fire hydrants in Fairfax. Approximately 130 of those fire hydrants deliver less than the recommended 1000 gallons per minute. Of those, approximately 40 fire hydrants deliver less than 500 gallons per minute. There are several areas in Town that have significant firefighting water flow issues. The Fire Department has developed operational preplans to deal with the lack of fire flow in these areas and they are also working on long term solutions.

~~The RVFD has established performance measures for responding to various types of incidents.~~

~~Performance Measures for Response to Structure Fires: To maintain a Code 3 service capability based on Total Reflex Time that will ensure on scene arrival of the first unit within 7 minutes to all areas served with a high potential for life loss, economic value or fire flow and 8 minutes to all areas served with a moderate or low potential for life loss, economic value or fire flow from receipt of a 911 call in 90% of request for service.~~

~~Performance Measures for Control of Structure Fires: To confine 90% of all structure fires within 30 minutes of receipt of a 911 call to area of involvement as reported by first arriving unit, using an effective response force of 14 firefighters with a flow application rate of 1500 GPM.~~

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~~Performance Measures for Response to Wildland Fires: To maintain a Code 3 service capability, based on Total Reflex Time that will ensure on scene initiation of wildland structural fire protection with first arriving unit within 8 minutes, first alarm companies within 12 minutes from receipt of a 911 call in 90% of responses, to all areas served.~~

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~~Performance Measures for Response to Medical Emergencies: To maintain a Code 3 level of emergency medical response of EMT-D based on Total Reflex Time that will ensure the arrival of an Engine Company within 8 minutes of receipt of an EMD processed a 911 call in 90% of request for service, to all areas served. To maintain a Code 3 level of emergency medical response based on Total Reflex Time that will ensure the arrival of a paramedic ambulance within 10 minutes of receipt of a 911 call in 90% of request, to all areas served.~~

Warning and Evacuation

The Town of Fairfax Evacuation Protocol is included as an Appendix to this document.
Are we prepared and do we need to take the Protocol document and create an evacuation document for public consumption?

Planning Considerations

Comment: The existing Planning tools for assessing /affecting fire danger are the Tree Ordinance and the WUI. We need to make sure we are not creating conflicts between the ordinances and the G.Plan.

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Drought years intensify fire risk from dried out grasses and other vegetation. Diseases such as Sudden Oak Death and Pine Pitch Canker contribute to the wildland-urban

interface fire risk. Fire following earthquake is of concern, particularly during the periods of high temperatures, low humidity and high winds.

No large fires have occurred in open space areas adjacent to Fairfax for more than twenty years, thus increasing the fuel load and fire risk. The California Climate Change Center anticipates an 11 to 55% increase in the incidence of large wildland fires in California as a result of climate change and rising temperatures.

Non-native vegetation contributes to fire risk. Invasion of non-native species often occurs at the wildland-urban interface. Some of the species common in Fairfax that may contribute to the spread of fires include Scotch broom, French and Spanish thistle, exotic annual grasses, acacias, and eucalyptus.

There are a large number of parcels within our Wildland Urban-Interface area. As a result of limited staffing and the sheer magnitude of the problem RVFD has concentrated its efforts on the reduction of the lighter fuels.

The most effective mitigation measure is reducing the fuel load and creating defensible space. The Town of Fairfax has no overt responsibility for vegetation management or fuel reduction activities in open space lands adjacent to the Town jurisdictional boundary. Vegetation management programs conducted in partnership with Marin Open Space and Marin Municipal Water District are effective and desirable in reducing the wildland-urban interface risk.

For the past 27 years, Ross Valley Fire has had a formal defensible space inspection program. Each spring the engine companies inspect these areas. The elements of the inspections include: checking for defensible space, 10 feet of roadside clearance, 15 feet of vertical road clearance, removal of debris from roofs and gutters, a chimney spark arrester, and address numbering.

History has proven that we have been successful in the removal of the lighter fuels, such as grass, adjacent to the homes. We have also been successful with the removal of French and Scotch broom near homes.

Many areas of our community have heavy vegetation including brush, trees, and ornamental vegetation. Much of this vegetation is flammable. In order to obtain defensible space compliance in these areas, the homeowners will need to remove the lower branches on large trees, remove small trees, thin or remove brush and ornamentals near their homes, and be diligent with removing debris from roofs and decks.

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Older building materials such as wood shake roofs and siding increase the potential for fire spread and new fire ignitions. Cantilevered houses on hillsides and those constructed with overhangs and decks are at risk.

Steep canyons and narrow roads increase risk and may inhibit response efforts. Narrow roads may cause difficulties for fire apparatus access during resident egress. Residential parking on one lane roads is a serious impediment to fire apparatus access and evacuation egress. Existing rights of way and pedestrian trails mapped by the Fairfax Volunteers could provide valuable informal evacuation routes. We need to reference/formalize the trails map...

Installation of emergency warning sirens is underway. Protocols for response actions at the neighborhood level must be developed and disseminated to maximize the effectiveness of the warning sirens.

Fire prevention is critical and more cost effective than relying solely on response. Increasing public awareness of wildland fire and developing stronger preventive measures is essential to reducing the risk. Fire Safe Councils, such as FIRESafe Marin, are important community planning efforts.

Objectives and Policies - Fire Hazards

Objective ESE-3:

Protect people and property from risks associated with urban and wildland fire.

Policy ESE-3.1 Move to Preparedness section

Development and land use decisions will be made using the best available fire hazard information.

Program ESE-3.1.1

Prepare a fire fuel map for the Town of Fairfax on a five acre grid that can be digitized and incorporated into a fire hazard threat module that more accurately reflects the community risk from wildland fire.

Responsibility: Ross Valley Fire Department
Schedule: 2010

Policy ESE-3.2

Fire risk will be reduced through development and implementation of fuel, vegetation management and defensible space activities. [See Open space Element and Conservation Element.](#)

Program ESE-3.2.1

Identify basic vegetation types common to the Town of Fairfax and write a prescription for each type on how to manage that vegetation.

Responsibility: Ross Valley Fire Department

Schedule: 2010-2011

Program ESE-3.2.2

Continue to standardize and simplify defensible space guidelines and disseminate to public for implementation. (The FIRESafe Marin DVD was distributed by the Town to all residents in 2008/2009. RVFS continues to educate the public on defensible space. Guidelines are standardized and have been simplified.)

Responsibility: Ross Valley Fire Department

Schedule: 2010

Program ESE-3.2.3

Seek geographic and programmatic expansion of fuel management programs in Fairfax through the Marin County Vegetation Management Plan. Activities include, but are not limited to: shaded fuel breaks, roadside collection and chipping of cleared vegetation, mechanical fuel reduction equipment, selected harvesting, use of goats or other organic methods of fuel reduction, and selected use of controlled burning. Target areas include, but are not limited to: western interface with Camp Tamarancho, interface at end of Cascade Canyon, and the ridge from the Meadow Club to Deer Park Villa.

Responsibility: Ross Valley Fire Department

Schedule: 2009

Program ESE-3.2.4

Apply for grants through Fire Safe Marin for model xeriscapes appropriate to the Fairfax community.

Responsibility: Ross Valley Fire Department, Sustainable Fairfax

Schedule: 2010

Program ESE-3.2.5

Establish a Fire Hazard Abatement District (Similar to Flood District. Does one already exist?) to fund fire risk reduction activities for existing development through vegetation management that includes reducing fuel loads, increasing defensible space, constructing and maintaining fuel breaks, and public education.

Responsibility: Town Council, Planning Commission, Planning and Building Services, Ross Valley Fire Department
Schedule: 2012

Program ESE-3.2.6

Take measures to eradicate or limit the spread of vegetation with a high fuel ranking, such as Scotch Broom and Eucalyptus. See Open Space and Conservation Elements.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Program ESE-3.2.7

Support good urban forestry management practices to disrupt the vertical continuity of fuels; crown cleaning to reduce total fuel volume; dead wooding to reduce available fuels and decrease surface to volume ratio; and, opening the fuel structure (limbing-up) to reduce the horizontal continuity of fuels.

Responsibility: Ross Valley Fire Department
Schedule:

Program ESE-3.2.8

Review fire-preventative vegetation management techniques and practices proposed for creeksides and high-slope areas to identify and mitigate potential for erosion or landslide hazards.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

~~Policy ESE-3.3~~

~~Fire-resistant landscape improvements, including softscaping and/or hardscaping, within defensible space zones shall be exempt from increased property tax assessments.~~

Program ESE 3.3.1

~~Adopt and implement an ordinance exempting fire-resistant landscape improvements within defensible space zones from increases in property tax assessments.~~

~~Responsibility: Marin County, Town Council, Planning and Building Services,
Ross Valley Fire Department
Schedule: 2011~~

Policy ESE-3.4 Does this go in preparedness?

Maximize access for emergency response vehicles and egress for evacuation during fire and other emergency situations.

Program ESE-3.4.1

Require all dead-end segments of public roads in high hazard areas to have at least a “T” intersection turn-around sufficient for Ross Valley Fire Department equipment and mutual aid wildland fire equipment.

Responsibility: Ross Valley Fire Department, Town Council, Public Works,
Marin County
Schedule: 2012

New Program:
Prioritize implementation of Fire Access upgrades as funding becomes available.

Program ESE-3.4.2

Develop and enforce a parking plan for the purpose of emergency vehicle access and egress. Elements of the parking plan could include, but are not limited to: striping parking spaces and restricting parking at driveway entries where there is no T intersection or adequate space for emergency vehicle turnaround.

Responsibility: Ross Valley Fire Department, Public Works, Police
Schedule: 2009

Program ESE-3.4.3

Require that development in high fire hazard areas provide adequate access roads (with width and vertical clearance that meet the minimum standards of the *Fire Code* or

relevant local ordinance), onsite fire protection systems, evacuation signage, and fire breaks.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.4.4

Identify critical fire roads maintained by Marin County or other jurisdictions and ensure access by Ross Valley Fire Department emergency equipment.

Responsibility: Ross Valley Fire Department
Schedule: 2010

Program ESE-3.4.5

Periodically inspect fire roads and/or public right-of-way roads to keep them passable for emergency equipment during high fire season, including access/egress and turnaround.

Responsibility: Ross Valley Fire Department, Police Department
Schedule: On-going

Program ESE 3.4.6

Enforce code requirements for privately maintained roads or driveways accessing more than three properties to ensure emergency access and egress.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-3.4.7

Enforce street signage and street address signage codes to facilitate emergency response.

Responsibility: Planning and Building Services, Public Works
Schedule: August 13, 2009
On-going

Program ESE-3.4.8

Enforce parking restrictions on one-lane roads during the fire season, and particularly on “red flag” days.

Responsibility: Police, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.4.9

Review fire safety, evacuation, and emergency vehicle access when considering proposals to add secondary units or additional residential units in wildland-urban interface fire-threatened neighborhoods or in areas exposed to high-to-extreme fire threat.

Responsibility: Ross Valley Fire Department, Planning and Building Services
Schedule: On-going

Program ESE-3.4.10 Move to Preparedness.

Conduct RVFD fire response drills at various times of day and days of week in mutual threat zones (identified in the Fairfax Evacuation Protocol) to educate residents on realistic fire response times and to identify chronic impediments to fire apparatus access.

Responsibility: Police Department, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.4.11

Continue, as necessary, to acquire fire apparatus of an appropriate size to access box canyons and hillside areas with narrow winding roads.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Policy ESE-3.5 Move to Preparedness.

The Town shall develop and maintain a comprehensive warning and evacuation system to reduce life loss and injury from wildland fires.

Program ESE-3.5.1

Develop a fire evacuation plan for the highest fire hazard areas, including those areas with limited access/egress, dead-end roads, one-lane roads, and steep canyons. Plan should include: potential evacuation routes and signage, including alternate routes on pedestrian walkways, bikeways and trails; design and installation of a warning system, and public education and training.

Responsibility: Police, Ross Valley Fire Department
Schedule: 2010

Program ESE-3.5.2

Assign a liaison from the RVFD to each high risk neighborhood to assist residents to identify alternative evacuation routes and strategies based on the specific characteristics of the neighborhood.

Responsibility: Ross Valley Fire Department
Schedule: 2009

Program ESE-3.5.3

Install and operate warning sirens in locations at highest risk from wildland fires. See Program ESE-2.109.1

Responsibility: Police Department, Public Works
Schedule: 2009

Program ESE-3.5.4

Conduct annual evacuation drills for mutual fire threat zones in accordance with the Fairfax Evacuation Protocol and Plan(s).

Responsibility: Ross Valley Fire Department, Police Department
Schedule: Annual

Policy ESE-3.6

The Town of Fairfax will collaborate with external agencies and the community to provide adequate water supply for reasonable protection of property from wildfire.
[Is this referring to adequate water or adequate plumbing?](#)

Program ESE-3.6.1

Require a reliable source of water for fire suppression as dictated by municipal code for existing and new development through plan review and hydrant fire flow monitoring program.

Responsibility: Ross Valley Fire Department, Planning and Building Services, Marin Municipal Water Department, Public Works

Schedule: On-going

Program ESE-3.6.2

Continue a coordinated approach between the jurisdiction and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard.

Responsibility: Ross Valley Fire Department, Marin County Fire District, Marin Municipal Water District, Public Works

Schedule: On-going

Program ESE-3.6.3

Identify nearest source of portable water systems that may be used to supplement existing fire suppression water systems. i.e. mapping swimming pools, ponds, private wells...

Responsibility: Ross Valley Fire Department

Schedule: 2010

~~**Policy ESE-3.7**~~

~~Promote the use of water gardens, catchments, infiltration systems, and bio-retention cells as fire mitigation measures that also support the goal of reducing stormwater runoff. See Program ESE-2.5.1~~

~~**Program ESE-3.7.1**~~

~~Revise the Stormwater Management Plan to include on-site retention of rainwater.~~

~~Responsibility: Public Works~~

~~Schedule: 2011~~

Policy ESE-3.8 **This section directly relates to our discussions at the Fire Forum.**

Town codes and ordinances designed to minimize the risks from urban and wildland fire will be enforced and updated as needed to reflect current scientific data and technical standards.

Program ESE-3.8.1

Enforce provisions of the *California Building and Fire Codes* and municipal housing codes that require the installation of smoke detectors by making installation a condition for the transfer of property, or issuance of an occupancy permit for new construction or substantial remodels.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program 3.8.2

Adopt and/or amend, as needed, updated versions of the *California Building and Fire Codes* so that optimal fire-protection standards are used in construction and renovation projects.

Responsibility: Town Council, Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.8.3

Require that new homes or substantial remodels constructed in high fire hazard areas be constructed of fire-resistant building materials required by code, and incorporate fire resistant design features, such as one-hour fire-stop wall assemblies, and one-hour fire-stop boxed eaves with maximum available ember proof roof venting, to increase structural survivability and reduce ignitability.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.8.4

Require fire sprinklers in all new or substantially remodeled housing, regardless of distance from a fire station.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.8.5

Require sprinklers in all mixed-use developments to protect residential uses from fires started in non-residential areas.

Responsibility: Planning and Building Services, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.8.6

Compile a list of high-occupancy buildings deemed, due to their age or construction materials, to be particularly susceptible to fire hazards, and determine an expeditious

timeline for the fire-safety inspection and installation of fire safety improvements in all such structures.

Responsibility: Ross Valley Fire Department, Planning and Building Services
Schedule: Initiate in 2010

Program ESE-3.8.7

Require the bracing of water heaters and flexible couplings on gas appliances, the bolting of homes to their foundations and strengthening of cripple walls to reduce fire ignitions due to earthquakes for new construction, substantial remodel, and at point of sale. What are our other point of sale requirements? Is it too burdensome?

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-3.8.8

Adopt an ordinance to require automatic gas shut-off valves for multi-unit soft-story structures to reduce the risk of post-earthquake fire ignitions and fire spread.

Responsibility: Town Council, Planning and Building Services, Ross Valley Fire Department
Schedule: 2011

Program ESE-3.8.9

Conduct periodic fire-safety inspections of all commercial and institutional buildings.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Program ESE-3.8.10

Review development proposals to ensure that they incorporate a fire department approved defensible space plan and conduct inspections to ensure it is implemented prior to and maintained throughout construction.

Responsibility: Planning and Building Services
Schedule: On-going

Policy ESE-3.9 Move to Preparedness section.

The Town shall build community capacity to prepare for, respond to and recover from fire events.

Program ESE-3.9.1

Use multiple approaches to community education including, but not limited to: RVFD training programs, mailings to residents and businesses, providing information at community events, Town Hall, targeting school programs that focus on environmental issues, maintaining and enhancing the Fairfax emergency preparedness and RVFD websites, and distributing information packets through real estate offices.

Responsibility: Disaster Council, Ross Valley Fire Department
Schedule: On-going

Program ESE-3.9.2

Conduct an annual Fire Safe Fairfax campaign to include information on high fire hazard areas, warning and evacuation plans, defensible space, and fire prevention measures.

Responsibility: Town Council, Disaster Council, Ross Valley Fire Department
Schedule: Annual

Program ESE-3.9.3

Provide emergency preparedness and fire safety educational materials including information on fire prevention measures such as, roof and gutter cleaning, identifying and removing ember traps, cleaning dryer vents, and planting vegetation that will raise live fuel moisture levels.

Responsibility: Ross Valley Fire Department
Schedule: On-going

[These are the quick first-pass comments and thoughts of the subcommittee. We met on Monday Jan. 18, 2010.](#)