TOWN OF FAIRFAX
STAFF REPORT

TO: **Mayor, Members of the Town Council**

FROM: **Michael Rock, Town Manager** MR
Jim Moore, Planning and Building Services Director

DATE: **May 5, 2010**

SUBJECT: **Review and discussion of the Draft Safety Element and report on the status of the Fairfax General Plan**

DISCUSSION

Overall progress to date on each of the remaining six individual elements of Town's General Plan being updated is as follows:

- The Planning Commission has completed reviewing and editing the draft **Safety Element.** This draft element is now being forwarded to the Town Council by Planning Commission via Resolution #10-05. Both the Resolution and draft Safety Element are attached to this report.

- The GPAC completed their review of both the draft **Open Space Element** and **Land Use Element** on March 25th and have forwarded these two draft element on to Planning Commission for consideration at their Workshop on May 6th.

- The new GPAC ad-hoc subcommittee has commenced production of a draft **Conservation Element** and will be meeting at an accelerated pace to complete this draft element. The subcommittee is comprised of members of the Planning Commission, GPAC and Open Space - in order to expedite subsequent review on this important element.

- The prime consultant and staff are nearing completion of updating the draft 2006 **Housing Element.** The affordable housing strategies in this element have been developed in close collaboration with the Affordable Housing Sub-Committee.

- The prime consultant has completed a draft **Noise Element**.

Please note: *after all six remaining elements have been reviewed by the Town Council, all eight drafted elements of the updated General Plan will be "packaged" for Council's final review and adoption pending environmental review.*

AGENDA ITEM # 11

RESOLUTION NO. 10-05

A RESOLUTION OF THE FAIRFAX PLANNING COMMISSION FORWARDING THE DRAFT SAFETY ELEMENT OF THE GENERAL PLAN UPDATE TO THE TOWN COUNCIL FOR REVIEW AND TO MAKE APPROPRIATE AMENDMENTS

WHEREAS, The General Plan Advisory Committee was given the task of creating a Draft Safety Element of the Fairfax General Plan Update; and

WHEREAS, The General Plan Advisory Committee worked diligently with staff and qualified consultants to create the initial version of the Draft Safety Element; and

WHEREAS, The Planning Commission received the Draft Safety Element of the General Plan Update from the General Plan Advisory Committee, conducted public hearings and performed a complete review of the Draft Safety Element with subsequent edits; and

WHEREAS, The Planning Commission has now completed their extensive review and edits of the Draft Safety Element; and

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission hereby forwards the Draft Safety Element of the Fairfax General Plan Update to the Town Council for review and editing.

The foregoing resolution was duly introduced and adopted on the 15th day of April, 2010, by the following vote:

AYES: Goyon, Hamilton, Lacques, LaMotte, Meigs, Ramsay, Chair Ketcham
NOES: none

_____
Brannon Ketcham, Chairperson

ATTEST:

_____
James M. Moore
Director of Planning and Building Services

Town of Fairfax

General Plan
Environmental Safety Element

Planning Commission Review Draft

April 8 2010

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Town of Fairfax
General Plan Environmental Safety Element

Introduction

The Town of Fairfax, like many Northern California Coastal communities is subject to a variety of natural hazards as a result of its physical setting, geologic features, climatic conditions and development patterns. The creeks, steep canyons, woodlands, and relative remoteness from highly urbanized centers are features that make Fairfax a desirable place to live. These same features make the community susceptible to the impacts of floods, fire, landslide and earthquakes.

The purpose of the Environmental Safety Element is to reduce the risk of death, injuries, property damage, and economic and social disruption that can result from natural hazard events by establishing locally appropriate policies, programs, and mechanisms to protect life, the natural environment and property and guide future community growth. The Environmental Safety Element provides the policy framework to support the Town's mitigation, emergency preparedness, disaster response, and future recovery efforts.

Floods, landslides, wildland fire and earthquakes are the primary natural hazards affecting the Town of Fairfax, and therefore are the focus of this Element. Additional environmentally related hazards such as air and water pollution, hazardous materials, and noise are addressed elsewhere in the General Plan, or are not considered a significant risk to the community.

Although the inherent threat posed by natural hazards cannot be eliminated, the level of damage from these hazards can be reduced through individual and community preparedness, and action to reduce or eliminate long-term risks, and sound development practices.

The challenge is to improve the safety of the existing built environment through a variety of incremental, systematic, and ongoing, actions. These actions to reduce risk should be based on sound analysis of hazardous conditions and should include economically realistic interventions and incentives.

Authority

The California Government Code, at Section 65300, requires each city and county to adopt a general plan, and establishes seven mandated elements, including land use, circulation, housing, conservation, open space, safety and noise, that must be addressed. The Environmental Safety Element of the Fairfax General Plan is designed to address the specified provisions of the Safety Element.

As stated in the Safety Element Guidelines published by the Governor's Office of Planning and Research (OPR), the safety element must examine issues related to protecting the community from any unreasonable risks associated with:

- seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure.
- slope instability leading to mudslides and landslides.
- subsidence, liquefaction, and other seismic hazards identified on seismic hazard maps
- other known geologic hazards
- flooding
- wildland and urban fires

It must also address the following as they relate to known fire and geologic hazards:

- evacuation routes and signage
- peakload water supply requirements
- minimum road widths and turnouts
- clearances around structures

Additionally, the element must:

- establish policies to minimize the loss of property and life as a result of earthquake
- identify flood hazard areas and establish policies to avoid unreasonable flood risks
- identify urban fringe and rural-residential areas that are prone to wildland fire hazards

Relationship to Other General Plan Elements, Supporting Plans and Related Legislation

The Environmental Safety Element overlaps topics also mandated in the Land Use, Conservation, and Open Space elements. The key concern is to integrate effectively these common issues into the decision-making process. The Environmental Safety Element provides the foundational information and policy direction regarding hazards, vulnerability, and risk upon which proactive mitigation strategies and actions can be based over time. All other general plan elements must be consistent with the Environmental Safety Element, and vice versa. Likewise, all zoning, subdivisions, and capital improvements must be consistent with the Environmental Safety Element.

For example, Land Use Element Objective LU-7, "To ensure that the town minimizes the potential risk of wildfires, and limits to the extent possible threats to the health, safety, and welfare of citizens relative to other natural disasters," includes policies and programs designed to reduce risks to future development through appropriate zoning, site planning,

construction, and public education. Goal C-4 of the Circulation Element addresses the need for emergency vehicle access and alternative evacuation routes. Housing Element Policy H8B requires conformance of second units with floodplain management standards.

To maximize its effectiveness, the Environmental Safety Element is intended to complement and support not only the other General Plan Elements, but also other Town plans and documents, such as the Emergency Operations Plan (EOP), the Local Hazard Mitigation Plan (LHMP), and the Flood Mitigation Plan (FMP). Integrating environmental safety as a consideration into all Town decisions will ensure a safer and more sustainable community.

An incentive for plan integration was established through Assembly Bill 2140, signed into law by the Governor in October 2006. This bill authorizes cities and counties to adopt a Local Hazard Mitigation Plan as part of its mandated general plan safety element Communities that do so are eligible for additional state disaster assistance funding following federally declared disasters.

Assembly Bill 162, signed into law by the Governor in October 2007, requires that after January 1, 2009, cities and counties must amend their safety elements to include information regarding flood hazards and to establish a set of comprehensive goals, policies, and objectives, to protect the community from the unreasonable risks of flooding. The bill also requires corresponding revisions in the land use, housing, and conservation elements. While this statewide legislation is primarily targeted toward reducing future flood risk in the Sacramento and San Joaquin Valleys, it has implications for all California communities with an identified flood risk, such as the Town of Fairfax.

Public Participation

The public participation process for this update of the Environmental Safety Element, originally adopted in 1976, is consistent with the planning process employed for the update of the General Plan. The General Plan Advisory Committee (GPAC) has provided input, review and comment throughout the planning period. The general public has also been provided the opportunity for review and comment at Planning Commission meetings and Public Hearings.

Organization of the Element

Each hazard is addressed separately in the element. For each hazard, a brief description of the hazard condition, potential impacts, and planning considerations is discussed, followed by the goals, objectives, policies and implementation programs. Additional background information for each hazard is incorporated into the element via appendices.

Also considered within each hazard are the potential inter-relationships between hazards. That is, the propensity for an individual hazard event to trigger other related hazard events, thus increasing the cumulative risk.

The current recognition of anticipated climate change due to global warming and resulting changes in environmental conditions cannot be ignored. Although it is unclear at this time whether regional climate change will result in greater periods of heavy rainfall leading to increased flooding, or decreased rainfall leading to extended periods of drought, it is prudent to address these potential impacts in the General Plan.

Overall Goal of the Environmental Safety Element:

> ***A disaster- resilient community that has reduced its vulnerability to natural disasters by mitigating potential risks, and is prepared and capable of responding to and recovering from hazard events***

Geologic Hazards

Geologic hazards, both seismic and non-seismic must be considered when establishing land use policy, making future development decisions, and protecting existing development to ensure long-term community sustainability.

The coastal landscape of Marin County in general and the Town of Fairfax is dominated by ridges and valleys formed over centuries of geomorphologic processes including plate tectonics and erosion. Advances in scientific understanding of geologic processes and their potential impacts on the built environment provide a foundation for reducing community vulnerability from geologic hazards such as earthquakes and landslides Geologic Hazards Background Report is located in Appendix C.

Geology and Soils

The predominant geologic units underlying the Town of Fairfax are bedrock and alluvium. All the bedrock units are considered part of the Franciscan Complex, and comprised of metamorphosed rock, which is considered to have low to moderate slope stability relative to earthquake shaking, particularly on steep slopes. The alluvium is primarily loose and soft sediments and debris deposited along streambeds within the last 10,000 years. These deposits are typically those that are the most susceptible to seismic shaking, liquefaction and differential settlement. (See Figure 1.)

Seismic Conditions

Fairfax lies nearly equidistant from the San Andreas and the Hayward-Rodgers Creek Fault Zones. Either of these fault systems is capable of generating a large earthquake that could cause damage to the Town of Fairfax, and greater damage to extensive portions of the San Francisco Bay Region. State of the art scientific projections indicate there is a 62% probability of at least one magnitude 6.7 or greater earthquake before 2032 within the San Francisco Bay Region.

The greatest risk to life and property in an earthquake is from ground shaking. During an earthquake, the ground can shake for a few seconds or over a minute. The strongest shaking is typically close to the fault where the earthquake occurs (See Figure 2). Weak soils, such as valley alluvium or soils along river and stream beds, also experience strong shaking in earthquakes, even from distant quakes. The Fairfax area is also subject to earthquake induced ground movements including liquefaction and landslides. Post-earthquake fire ignitions from natural gas leaks and hazardous materials must also be considered.

Non-Seismic Conditions

A significant portion of the Town of Fairfax is susceptible to landslide movement due to the steep hillsides and canyons that make up the largest percentage of land mass in the Town. Gravity acting on a very steep slope is the primary reason for a landslide;

however, when slopes are weakened through saturation by heavy rains they are less able to hold the excess weight and slope failure is accelerated. (See Figure 3.)

Potential Impacts

The Town of Fairfax does not contain any active faults as designated by the Alquist - Priolo Earthquake Fault Zoning Act; however it is subject to moderate to high levels of groundshaking which could cause significant damage and disruption to critical Town facilities, residences, businesses and infrastructure. Aging infrastructure, such as bridges and pipelines, may suffer damage and result in local transportation, water and sanitation disruptions.

Creekside and hillside areas, which comprise the majority of the built environment in the Town of Fairfax, are most vulnerable to damage caused by ground failure. Creekside development built on alluvial deposits can experience differential settlement caused by liquefaction. Hillside construction is vulnerable to earthquake-induced landslides. This vulnerability is increased during periods of intense or prolonged rainfall when soils become saturated.

Fairfax will also be impacted by regional damage occurring at a distance. Earthquake scenarios developed for the San Andreas Fault and Hayward Fault systems project significant disruption of the Bay Area transportation, communication, power, water, and sanitation systems. The greatest risk may be from isolation due to transportation disruption which could impact the delivery of essential supplies and disrupt commute patterns for a period of years, causing additional economic hardship for residents and businesses.

In addition to the risks posed by earthquake-induced landslides, the Town of Fairfax is highly susceptible to landslides during periods of extended heavy rainfall during the wet season. Landslides occurring in the Town of Fairfax can cause damage to infrastructure, including power lines and utility pipelines and block access and egress routes. Existing development in steep hill neighborhoods such as the Cascades, Forrest/Hillside, Oak Manor hills, and Willow/Upper Ridgeway are at risk from landslides.

Planning Considerations

Fairfax has adopted the most current building codes to guide new development and substantial improvements to existing development. Fairfax is also in compliance with state legislation designed to reduce hazards posed by unreinforced masonry buildings. Four unreinforced masonry buildings have been identified and retrofitted for life safety. There are an unknown number of other types of potentially hazardous buildings located in the Town of Fairfax, such as "soft-story" apartment buildings that have been shown to be vulnerable in previous earthquakes in California. Many Fairfax homes were built prior to current codes, and do not have seismic-resistant foundations. Due to their age and location, many of these homes may have wood rot problems that will weaken their

performance in a strong earthquake. Most new development in the Town of Fairfax will take place on steep slopes that are susceptible to landslides.

Risk to new development can be minimized by conducting thorough geotechnical investigations, incorporating findings into the design and construction, and strict compliance with current building codes. Lack of localized geotechnical maps defining areas susceptible to earthquake; induced landslide and liquefaction zones, as well as the location of historic and recent landslides, require geotechnical studies for all new development and substantial improvements.

Local and regional earthquake events resulting in significant damage underscore the need for Fairfax to work closely with external agencies to ensure vital systems and services are available to the community in a post-earthquake environment.

A key element of building community capability is ensuring that Fairfax residents are prepared to be self-sufficient for a minimum of seven days.

Objectives and Policies - Geologic Hazards (Earthquake & Landslide)

Objective ESE-1:

Protect people and property from risks associated with seismic activity and geologic conditions.

Policy ESE-1.1

Development and land use decisions will be made using the best available geotechnical data.

Program ESE-1.1.1

Require geotechnical analyses for all new development/substantial improvement proposals.

Responsibility: Planning and Building Services; Town Engineer
Schedule: On-going

Program ESE-1.1.2

Collect and provide geotechnical data to guide development decisions.

Responsibility: Planning and Building Services
Schedule: On-going

Policy ESE-1.2

Geotechnical data will be easily available to the public and interested parties.

Program ESE-1.2.1

Catalogue and archive geotechnical studies performed for development permits.

Responsibility: Planning and Building Services
Schedule: Initiate by 2010; complete by 2013

Program ESE-1.2.2

Document past and future landslide occurrences, produce maps showing locations and enter the data into Marin Maps Geographic Information System.

Responsibility: Planning and Building Services; Marin Maps
Schedule: Initiate by 2010

Program ESE-1.2.3

Maintain copies of existing and new documents and maps identifying geologic hazards at Planning and Building Services and the Public Library.

Responsibility: Planning and Building Services; Fairfax Library
Schedule: On-going

Policy ESE-1.3:

The Town shall identify, evaluate, and encourage the seismic retrofit of public and private buildings that pose a risk of death or injury in an earthquake.

Program ESE-1.3.1

Evaluate Town- owned critical facilities and infrastructure to identify those elements that are seismically deficient due to being constructed prior to current seismic design codes and standards, or which are weakened due to age or lack of maintenance, and which could result in significant disruption of service in a major earthquake.

Responsibility: Public Works; Planning and Building Services
Schedule: Initiate by 2010

Program ESE-1.3.2

Conduct an inventory of existing or suspected soft-story residential structures that could result in life loss or injury, property damage and a loss of housing in the event of a major earthquake.

Responsibility: Planning and Building Services
Schedule: Initiate by 2010

Program ESE-1.3.3

Evaluate publicly and privately owned buildings that may be used for post-earthquake sheltering or public congregation to identify potential hazards.

Responsibility: Public Works; Planning and Building Services
Schedule: Initiate by 2011

Program ESE-1.3.4

Based on the inventories and evaluations conducted in ESE-1.3.1-1.3.3, design and implement a seismic retrofit program to address the highest priority structures Make information readily available to the public..

Responsibility: Public Works; Planning and Building Services, Town Council
Schedule: 2013

Policy ESE-1.4

The Town shall preserve the Fairfax housing stock by encouraging home owners to seismically retrofit their property,.(e.g.including installation of a seismically resistant foundation, bolting the sill plate to the foundation, installing shear wall strengthening to cripple walls).

Program ESE-1.4.1

Provide seismic retrofit technical guidance to property owners applying for development or substantial improvement permits.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-1.4.2

Develop a list of technical guidance and educational resources for distribution along with permit application forms and procedures.

Responsibility: Planning and Building Services, Disaster Council

Schedule: Initiate in 2010

Program ESE-1.4.3

Provide financial incentives to residential and commercial property owners to undertake seismic retrofit of wood frame structures, including, but not limited to: revolving low-interest loans, transfer tax rebates, tool lending library.

Responsibility: Town Council; Finance; Planning and Building Services
Schedule: Initiate in 2010

Program ESE-1.4.4

Research, identify and aquire Federal and State funds and/or grants to subsidize seismic retrofits.

Responsibility: Town Council; Finance; Planning and Building Services
Schedule: Ongoing

Policy ESE-1.5

The Town shall collaborate with external agencies to ensure critical infrastructure remains functional following geohazard events, including earthquake and landslide.

Program ESE-1.5.1

Seek funding through Caltrans Local Highway Bridge Program and explore other funding sources to retrofit bridges identified by Caltrans or other technical evaluations as seismically deficient. Determine the seismic stability of Meadow Way, Marin (adjacent to Manor Circle) and Creek Road bridges.
Responsibility: Public Works; Finance
Schedule: 2009

Program ESE-1.5.2

Contact Marin Municipal Water District, Pacific Gas & Electric, and other utility providers that service the Town of Fairfax to determine the potential vulnerability of service delivery systems, and work closely with those external agencies to establish priorities for system improvements prior to an earthquake and re-establishment of services following a damaging earthquake.

Responsibility: Public Works; Disaster Council
Schedule: 2012

Policy ESE-1.6

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

Program ESE-1.6.1

Provide disaster preparedness education materials at multiple locations, including but not limited to: Town Hall, Fairfax Library, Town website, and special mailings, to ensure all residents have access to the most current preparedness information.

Responsibility: Disaster Council, Ross Valley Fire Department, Fairfax Library
Schedule: Initiate in 2009 and continue yearly thereafter

Program ESE-1.6.2

Continue to support and promote post-earthquake self-sufficiency through community trainings like the CERT and Get Ready Programs.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Policy ESE-1.7

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

Program ESE-1.7.1

Require development to avoid or minimize potential hazards from earthquakes and unstable ground through rigorous enforcement of all relevant codes and construction standards.

Responsibility: Planning and Building Services; Town Engineer
Schedule: On-going

Program ESE-1.7.2

Develop and adopt a post-earthquake repair ordinance that specifies to what code and standards repairs must be made at what level of damage. Include special provisions to preserve historic structures.

Responsibility: Planning and Building Services; Town Council
Schedule: 2012

Program ESE-1.7.3

Enforce requirments for storm drainage systems for hillside development or substantial improvements be designed to minimize stormwater runoff and soil erosion that could increase the landslide potential.

Responsibility: Public Works, Town Engineer
Schedule: On-going

Program ESE-1.7.4

Modify site plan design requirements for hillside development or substantial improvements to require calculations based on saturated soils.

Responsibility: Planning and Building Services; Town Engineer
Schedule: 2010-2011

Flood Hazards

The Ross Valley Watershed reaches from the foothills of Mount Tamalpais in the Coast Range to the San Francisco Bay. The watershed drains approximately thirty square miles into nearly as many named creeks. San Anselmo and Fairfax creeks rise along the southern and western ridges and drain steep upland areas onto relatively narrow valley flats. These creeks combine as San Anselmo Creek in the Town of Fairfax.

It is important to note at the outset that Ross Valley is naturally prone to flooding by its location and geologic and fluvial geomorphic setting. Rainfall can be extremely intense, soils are shallow with limited absorbing capacity, slopes are steep, and the stream channels are incised and narrow offering little in-channel storage. Development in the Ross Valley has created expansive impermeable areas while encroaching onto the banks of the channel, supplanting the natural flood-attenuating capacity of the floodplain. The effects of narrow bridge and culvert openings and poorly designed residential streambank stabilization structures have been superimposed on this naturally flood-prone system, exacerbating the flooding problem.

Downtown Fairfax begins to flood when the capacity of the long culvert (i.e. from Town Hall under Bolinas, Sherman, Dominga, and one private residence opening into the San Anselmo Creek) at the downstream end of Fairfax Creek is exceeded or debris blocks its entrance. Water leaving the creek upstream of the culvert runs through downtown Fairfax and returns to the main channel downstream of Pacheco Avenue, where the channel is deeply incised and is able to convey greater flows.

The area subject to historic and future flooding lies in the floodplain adjacent to the confluence of Fairfax and San Anselmo creeks. The Federal Emergency Management Agency (FEMA) produces maps of flood prone areas to guide community floodplain management programs.

A map showing the Special Flood Hazard Areas subject to a one percent per annum flood is included as Figure 4. Additional information regarding flood history, hydrologic studies and current floodplain management programs is outlined in the Town of Fairfax Flood Mitigation Plan, which is incorporated as an Appendix to this document.

In addition there is a substantial risk of localized flooding from small, undersized culverts and inadequate storm drain infrastructure as well as limited maintenance of these facilities.

Potential Impacts

The Fairfax Town Hall, Police Station and Fire Station are located directly adjacent to, and or above, Fairfax Creek, and are in the Special Flood Hazard Area (SFHA), as mapped by FEMA. These critical Town facilities have sustained serious damage during past flood events, the most recent occurring on December 31, 2005. A significant portion of the existing commercial district is also located in the SFHA and has experienced prior

damage and economic losses due to flooding. Approximately 500 residential parcels are also located in the mapped SFHA. Modifications to existing structures can be made to reduce potential future damage, including elevating structures, installing flood gates, wet and dry proofing, and erosion control.

Bothin Creek, Deer Park Creek, and Wood Lane Drainage have also been identified as potential sources of flooding.

Planning Considerations

Historic records of flood events and their impacts on the community are not well documented. FEMA maps represent a projected probability of future events based on limited hydrologic studies. However, based on the general accounts of flooding over the past one hundred years, the maps appear to under-represent the severity and extent of potential flooding for the Town of Fairfax. Further hydrologic studies of the complex upstream and downstream effects of development in the Ross Valley Watershed must be conducted to provide base data for land use planning.

There is an opportunity for new development and redevelopment of residential and commercial zoned vacant properties along Fairfax and San Anselmo Creeks. The potential for flooding and the desire to protect the scenic and biologic qualities of the creeks should be of paramount concern in reviewing all development and redevelopment proposals on these parcels.

The primary control for development/redevelopment in properties in the mapped floodplain is the Fairfax Floodplain Management Ordinance; however, multiple regulatory agencies have approval authority for creek related activities.

Following the December 31, 2005 flood, Fairfax rejoined Flood Control District 9. Jointly with the Ross Valley Watershed Program, the Town of Fairfax is coordinating with other communities to identify and resolve long-term flooding issues.

Creek ownership and stewardship requires a public/private approach to risk reduction while ensuring habitat protection.

Objectives and Policies - Flood Hazards

Objective ESE-2:

Protect life and property from risks associated with flooding.

Policy ESE-2.1

Development decisions that impact flood vulnerability, exposure, or risk will be made using adequate and up-to-date flood hazard information.

Program ESE-2.1.1

Review updated Flood Insurance Rate Maps, make map information available to the public online and at Town Hall and ensure the most up-to-date information is used for permit and plan review.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-2.1.2

Complete the hydrologic study of Fairfax Creek as identified by the Ross Valley Watershed Project following the December 31, 2005 floods.

Responsibility: Public Works; Ross Valley Watershed Program,
Schedule: 2009

Program ESE-2.1.3

Document and maintain creek depth monitoring data during significant storm or flood events to contribute to the understanding of the flood hazard.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Program ESE-2.1.4

Document past flood history and damages to quantify flood impacts and support cost/benefit analysis of flood mitigation measures.

Responsibility: Public Works
Schedule: Initiate 2009

Program ESE-2.1.5

Complete identification and mapping of high water marks from the December 31, 2005 flood and enter into Geographic Information System maintained by Marin Maps.

Responsibility: Public Works; Marin Maps
Schedule: 2009

Policy ESE-2.2

Codes, ordinances and local planning efforts governing development in the floodplain (see figure 4) will be enforced and updated as appropriate.

Program ESE-2.2.1

Update and enforce the Flood Ordinance (Town Code 17.068) for all development, redevelopment, or substantial improvement projects in the floodplain through the permit review process.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE 2.2.2

Continue to comply with all requirements of the National Flood Insurance Program.

Responsibility: Planning and Building Services
Schedule: On-going

Policy ESE-2.3

Ensure that storm drainage systems are adequate to accommodate new development and substantial improvements are designed and constructed to reduce off-site flow, through the use of techniques such as permeable paving and on-site stormwater retention.

Program ESE-2.3.1

Require property owners or developers to pay the cost of any on-siteimprovements to the existing drainage system necessitated by the proposed development to meet state storm water laws.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-2.3.2

Require new developments and substantial remodels to incorporate Low Impact Design and Best Management Practices to mitigate stormwater runoff.

Responsibility: Planning and Building Services
Schedule: On-going

Policy ESE-2.4

Ensure that new developments or substantial improvements are designed to reduce or eliminate future flood damage.

Program ESE-2.4.1

Require that lots and rights-of-way are laid out for the provision of approved sewer and drainage facilities, providing on-site detention facilities whenever practicable. Design criteria for hillside development should be calculated based on saturated soils.

Responsibility: Planning and Building Services, Sanitary District
Schedule: On-going

Policy ESE-2.5

The Town of Fairfax will reduce community risk and vulnerability to flooding by maintaining and improving creek and hillside drainage systems.

Program ESE-2.5.1

Repair damaged culverts, drains, and bridges to withstand future flooding and incorporate streambank erosion and fish passage solutions.

Responsibility: Public Works
Schedule: 2009-2010

Program ESE-2.5.2

Locate and mark all storm drains/culverts and identify the area and parcelsdraining into each.

Responsibility: Public Works
Schedule: 2010

Program ESE-2.5.3

Conduct an inventory and analysis of town maintained storm drains and culverts, including location, age, size, materials, and where storm drainage is routed across private property.

Responsibility: Public Works
Schedule: 2010

Program ESE-2.5.4

Determine any inadequacies in the carying capacity of town maintained storm drains and culverts to meet current capacity needs, and to prioritize necessary improvements.

Responsibility: Public Works
Schedule: 2011

Program ESE-2.5.5

Prepare a Storm Drain Master Plan based on information gathered in Programs ESE-2.5.1 through ESE-2.5.4.

Responsibility: Public Works
Schedule: 2012

Program ESE-2.5.6

Keep storm drains and creeks free of obstructions, while retaining vegetation in the channel (as appropriate for habitat preservation in compliance with State and Federal requirements), to allow for free flow of water.

Responsibility: Public Works
Schedule: On-going

Policy ESE-2.6

Support community volunteer efforts prior to and during the rainy season to monitor creeks and drainage culverts and remove visible obstructions.

Program ESE-2.6.1

Continue the annual volunteer Creek Clean-up Program as an effective method to reduce localized flooding.

Responsibility: Town Council, Public Works, Fairfax Volunteers
Schedule: Annual

Policy ESE-2.7

The Town of Fairfax will increase the mitigation capability of residents, business owners, and others who could be affected by floods.

Program ESE-2.7.1

Provide property owners with educational materials that describe the upstream/downstream impacts, drainage systems, on-site retention systems, and stormwater runoff implications of individual actions on watersheds and creeks.

Responsibility: Disaster Council; Public Works
Schedule: On-going

Program ESE-2.7.2

Provide property owners with educational materials that describe locally appropriate techniques for bank stabilization and erosion control that can reduce flooding and promote healthy creeks.

Responsibility: Public Works
Schedule: On-going

Program ESE-2.7.3

Partner with Sustainable Fairfax, the Ross Valley Mitigation League, the Friends of Corte Madera Creek Watershed and similar groups to develop and distribute educational materials and provide training to the community on ways to reduce the impacts of flooding on their property, their neighbor's properties and the community as a whole.

Responsibility: Public Works
Schedule: On-going

Policy ESE-2.8

The Town of Fairfax will encourage and provide incentives to home and apartment owners and commercial business owners to participate in structural elevation programs that will protect property.

Program ESE-2.8.1

Identify and aggressively seek available grant funds to support residential and commercial elevation projects and projects that decrease runoff and increase stormwater detention.

Responsibility: Town Council, Disaster Council, Public Works
Schedule: 2010

Program ESE-2.8.2

Provide financial incentives, technical guidance and a public outreach campaign for commercial business owners to install flood gates at the entrance to their property.

Responsibility: Town Council, Chamber of Commerce
Schedule: 2010

Policy ESE-2.9

The Town will increase community capacity to respond to and recover from emergencies and disasters caused by flood hazards.

Program ESE-2.9.1

Maintain and periodically test the warning sirens to inform the public of imminent flood potential.

Responsibility: Ross Valley Fire Department
Schedule: On-going

Program ESE-2.9.2

Develop and disseminate protocols for activation of warning sirens, TENS/MEANS, and other automatic flood notification measures (e.g. automated phone calls and emails to residents in flood zones), and include them in the Emergency Operations Plan.

Responsibility: Ross Valley Fire Department; Police
Schedule: 2010

Program ESE-2.9.3

Conduct public education program to inform residents of appropriate measures to take when an alarm is sounded and document flood evacuation procedures in Emergency Operations Plan.

Responsibility: Disaster Council; Ross Valley Fire Department; Police
Schedule: 2010

Program ESE-2.9.4

Make sandbags and plastic sheeting available to residents in anticipation of rainstorms. Facilitate access by publicizing distribution locations for sandbag filling.

Responsibility: Public Works
Schedule: On-going

Program ESE-2.9.5

Maintain the Disaster Preparedness web site to include flood and disaster preparedness information and links to flood prevention and mitigation resources.

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

Policy ESE-2.10

The Town will actively support watershed-based planning efforts to further comprehensive flood mitigation planning and implementation of flood mitigation measures.

Program ESE-2.10.1

Continue to participate in Flood Control District 9.

Responsibility: Town Council
Schedule: On-going

Program ESE-2.10.2

Continue to participate in the Ross Valley Watershed Program.

Responsibility: Town Council
Schedule: On-going

Policy ESE-2.11

The Town will explore flood reduction proposals to determine the most technically feasible, cost effective and environmentally sound solutions to community and watershed based flooding.

Program 2.11.1

Develop a project plan for enlarging the Sherman Avenue culvert. If proven feasible and cost effective, seek funds for implementation.

Responsibility: Public Works; Ross Valley Watershed Program

Schedule: 2012

Program ESE-2.11.2

Conduct an analysis of potential sites for upstream flood retention basins to reduce or delay flooding in Fairfax Creek.

Responsibility: Public Works; Ross Valley Watershed Program
Schedule: 2009-2010

Program ESE-2.11.3

Prepare a detailed study analyzing the potential for daylighting the Town's creeks and culverts. Funding...?

Responsibility: Public Works
Schedule: 2011

Fire Hazards

The Town of Fairfax is at risk from two types of fire: urban fire and wildland fire.

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.

Warning and Evacuation

The Town of Fairfax Evacuation Protocol is included as an Appendix to this document. Are we prepared to 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.

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.

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

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, consistent with Open Space and Conservation Element goals.

ProgramESE-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, Planning & Building Dept.
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, Planning & Building Dept
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, Planning & Building Dept, Public Works Dept.
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, Planning & Building Department, Fairfax Volunteers, Public Works
Schedule: 2010

Program ESE-3.2.5

Establish a Fire Hazard Abatement District 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 Broom species and Eucalyptus. .

Responsibility: Ross Valley Fire Department, Planning & Building, Public Works, Fairfax Volunteers
Schedule: On-going

Program ESE-3.2.7

Support good urban forestry management practices to disrupt the vertical continuity of fuels, included but not limited to: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, Planning & Building, Public Works
Schedule: On-goinig

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, Public Works
Schedule: On-going

Policy ESE-3.4

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
Schedule: 2012

Program ESE -3.4.2

Prioritize implementation of Fire Access upgrades as funding becomes available.

Responsibility: Ross Valley Fire Department, Public Works
Schedule: 2012

Program ESE-3.4.3

Develop and enforce a parking and signage plan to ensure emergency vehicle access and egress. Elements of the parking and signage plan could include, but are not limited to: striping parking spaces, signage 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-3.4.4

Require that new development 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-3.4.5

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-3.4.6

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 3.4.7

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, Town Council, Ross Valley Fire Department, Police
Schedule: On-going

Program ESE-3.4.8

Develop and enforce street signage and street address signage codes to facilitate emergency response.

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

Program ESE-3.4.9

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-3.4.10

Review fire safety, evacuation, and emergency vehicle access when considering development proposals 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

Policy ESE-3.6

The Town of Fairfax will collaborate with external agencies and the community to provide adequate water supply and fire flow for reasonable protection of life and property.

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 alternative sources of water that may be used to supplement existing fire suppression water systems. Including but not limited to: mapping and signage for swimming pools, ponds, private wells…

Responsibility: Ross Valley Fire Department, Fairfax Volunteers
Schedule: 2010

Program ESE-3.6.X
Prioritize implementation of hydrants and fireflow upgrades as funding becomes available.

Responsibility: Ross Valley Fire Department, Public Works
Schedule: 2012

Policy ESE-3.8

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.

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

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-3.8.8

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

Responsibility: Ross Valley Fire Department
Schedule: On-going

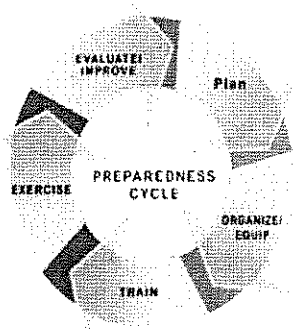
Program ESE-3.8.9

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, Design Review
Schedule: On-going

Section 4 - Community Preparedness

INTRODUCTION



Preparedness Defined[1]

The Federal Emergency Management Agency (FEMA) defines preparedness as "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during emergency or disaster response." This 'preparedness cycle' is one element of a broader emergency management system to prevent, respond to, recover from, and mitigate against natural disasters, acts of terrorism, and other man-made disasters.

Planning makes it possible to manage the entire life cycle of a potential crisis. Strategic and operational planning establishes priorities, identifies expected levels of performance and capability requirements, provides the standard for assessing capabilities, and helps stakeholders learn their roles. The planning elements identify what an organization's Standard Operating Procedures (SOP) or Emergency Operations Plans (EOP) should include for ensuring that contingencies are in place for delivering the capability during a large-scale disaster.

Organizing and equipping provide the human and technical capital stock necessary to build capabilities and address modernization and sustainability requirements. Organizing and equipping include identifying what competencies and skill sets people delivering a capability should possess and ensuring an organization possesses the correct personnel. Additionally, it includes identifying and acquiring standard and/or surge equipment an organization may need to use when delivering a specific capability.

Training provides first responders, emergency management officials, private and non-governmental partners, and other personnel with the knowledge, skills, and abilities needed to perform key tasks required by specific capabilities. Organizations should make training decisions based on information derived from the assessments, strategies, and plans developed in previous steps of the Preparedness Cycle

Exercises assess and validate the speed, effectiveness and efficiency of capabilities, and test the adequacy of policies, plans, procedures, and protocols in a risk-free environment. Aside from actual events, they provide the best means of evaluating emergency response and recovery capabilities.

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[1] source: http://www.fema.gov/plan/index.shtm

The evaluation and improvement of performance is the final step of the Preparedness Cycle and crucial to informing risk assessments, managing vulnerabilities, allocating resources, and informing the other elements of the Cycle. Organizations develop improvement plans and track corrective actions to address the capabilities identified in plans and tested in exercises or real events.

The preceding definition applies primarily to governmental organizations. These concepts are reflected in the Town of Fairfax Emergency Operations Plan and procedures. Governmental preparedness, however, is only one aspect of community preparedness. It is also important for residents, neighborhoods, and business owners to participate in preparedness activities.

Why Prepare

Being prepared can reduce fear, anxiety, and losses that accompany disasters. Disasters disrupt hundreds of thousands of lives every year. Each disaster has lasting effects, both to people and property. When a disaster occurs, local government and disaster-relief organizations will help with response and recovery efforts, but individuals need to be ready as well. Local responders may not be able to reach everyone immediately, or they may need to focus their efforts elsewhere.

Every citizen in this country is part of a national emergency management system that is all about protection–protecting people and property from all types of hazards. Think of the national emergency management system as a pyramid with the individual citizen forming the base of the structure. At this level, each person has a responsibility to protect themselves, their family and their property by knowing what to do before, during, and after an event.

Critical elements of community preparedness include:

- public awareness and education,
- access to preparedness information,
- neighborhood training programs,
- notification, warning and evacuation systems and procedures

Objective ESE-4
Provide a broad array of widely available information for disaster preparedness, in a localized and pertinent place, for use by the citizens of Fairfax.

Policy ESE-4.1
Obtain, organize and disseminate information for disaster preparedness.

Program ESE-4.1.1

Provide information to residents, property owners,, private business owners and their employees on the availability of interactive hazard maps showing the community on ABAG's web site as noted in the Safety Element Section XXX.

Responsibility: Planning and Building Services
Schedule: 2010

Program ESE-4.1.2
Develop printed materials, utilize existing materials (such as developed by FEMA and the American Red Cross), conduct workshops, and/or provide outreach encouraging residents to have family disaster plans including but not limited to drop-cover-hold earthquake drills, fire and storm evacuation procedures, and shelter-in-place emergency guidelines.

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

Program ESE-4.1.3

Inform residents of comprehensive mitigation activities, including but not limited to elevation of appliances above expected flood levels, use of fire-resistant roofing and defensible space in high wildfire treat and wildfire-urban-interface areas, structural retrofitting techniques for older homes, and use of intelligent grading practices through workshops, publications, and media announcements and events.

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

Program ESE-4.1.4

Develop a public education campaign on the cost, risk, and benefits of earthquake, flood, and other hazard insurance as compared to mitigation.

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

Program ESE-4.1.5

Use disaster anniversaries, such as April (the 1906 earthquake and October (Loma Prieta earthquake and Oakland Hills fire), to remind the public about safety and security mitigation activities.

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

Program ESE-4.1.6

Sponsor the formation and training of Community Emergency Response Teams (CERT) or Get-Ready-Marin for residents in your community.

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

Program ESE-4.1.7

Institute the neighborhood watch block captain and team programs outlined in the Citizen Corp program guide.

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

Program ESE-4.1.8

Inform homeowners how to locate and shut off gas valves if they smell or hear gas leaking and to check for gas leaks after an earthquake.

Responsibility: Public Works, Ross Valley Fire Department
Schedule: On-going

Program ESE-4.1.9

Make use of the materials on the ABAG and other relevant web sites (see General Plan Appendix XXX) to increase residential mitigation activities related to disasters.
Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-4.1.10

Develop a "Maintain-a-Drain" campaign, similar to that of the City of Oakland, encouraging private businesses and residents to keep storm drains in their neighborhood free of debris.

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

Program ESE-4.1.11

Encourage the formation of a community- and neighborhood-based approach to wildfire education and action through local Fire Safe Councils and the *Fire Wise Program*.

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

Program ESE-4.1.12

Develop a plan for short-term and intermediate-term sheltering of employees during emergencies.

Responsibility: Planning and Building Services
Schedule: On-going

Program ESE-4.1.13

Encourage citizens to develop family disaster plans.

Responsibility: Council, Town Manager, Planning and Building Services
Schedule: On-going

Program ESE-4.1.14

Encourage businesses to offer CERT training to employees.

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

Program ESE-4.1.15

Develop plans, in conjunction with fire jurisdictions and the Ross Valley School District, for evacuation or sheltering in place of school children during danger fire event, flood or major earthquake thereby recognizing that overloading of streets near schools by parents attempting to pick up their children during these periods can restrict access by fire emergency personnel and equipment.

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

Program ESE-4.1.16

Offer the 20-hour basic CERT and/or SERT (Student Emergency Response Training) training to teachers,after-school personnel, and middle and/or high school students.

Responsibility: Town Council, Planning and Building Ross Valley Fire Department in cooperation with the RVSD.
Schedule: On-going

Program ESE-4.1.17

Work with the Ross Valley School District to develop and maintain the capacity for schools to take care of the students for the first 48 hours after a disaster, and notify parents that this capacity exists.

Responsibility: Town Council, Planning and Building, Ross Valley Fire Department in cooperation with the RVSD
Schedule: On-going

Program ESE-4.1.18

Develop a continuity of operations and disaster recovery plan.
Responsibility: Town Council, Planning and Building, Ross Valley Fire Department
Schedule: On-going

GEOLOGIC HAZARD PREPAREDNESS

Objective ESE-5
Prepare the community for geologic hazards

Policy ESE-5.1

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

Program ESE-5.1.2

Conduct demonstration projects on common existing housing types demonstrating structural and nonstructural mitigation techniques as community models for earthquake mitigation.

Responsibility: Planning and Building Department

Schedule: On-going

Program ESE-5.1.3

Provide earthquake retrofit classes or workshops for homeowners, or help promote utilization of subregional workshops in the south bay, east bay, peninsula, and north bay as such workshops become available through outreach using existing community education programs.

Responsibility: Planning and Building Department
Schedule: On-going

Program ESE-5.1.4

Identify financial incentives for owners of single-family homes to retrofit for prevention of earthquake damage.
Responsibility: Town Council, Town Manager, Planning and Building Services, Public Works
Schedule: On-going

Program ESE-5.1.5

Work to educate building owners, local government staff, engineers, and contractors on privately-owned soft-story retrofit procedures and incentives.
Responsibility: Planning and Building Services, Public Works
Schedule: On-going

FLOOD HAZARD PREPAREDNESS

Objective ESE 6
Prepare the community for flood hazards using a risk reduction approach that also ensures habitat protection.

Policy ESE-6.1

Support community volunteer efforts prior to and during the rainy season to monitor creeks and drainage culverts and remove visible obstructions.

Program ESE-6.1

Continue the annual volunteer Creek Clean-up Program.

Responsibility: Town Council, Public Works, Fairfax Volunteers
Schedule: Annual

Policy ESE-6.2

The Town of Fairfax will increase the mitigation capability of residents, business owners, and others who could be affected by floods.

Program ESE-6.2.1

Provide property owners with educational materials that describe the upstream/downstream impacts, drainage systems, on-site retention systems, and storm water runoff implications of individual actions on watersheds and creeks.

Responsibility: Disaster Council; Public Works
Schedule: On-going

Program ESE-6.2.2

Provide property owners with educational materials that describe locally appropriate techniques for bank stabilization and erosion control that can reduce flooding and promote healthy creeks.

Responsibility: Public Works
Schedule: On-going

Program ESE-6.2.3

Partner with Sustainable Fairfax, the Ross Valley Mitigation League, the Friends of Corte Madera Creek Watershed and similar groups to develop and distribute educational materials and provide training to the community on ways to reduce the impacts of flooding on their property, their neighbor's properties and the community as a whole.

Responsibility: Public Works
Schedule: On-going

Policy ESE-6.3

The Town will increase community capacity to respond to and recover from emergencies and disasters caused by flood hazards.

Program 6.3.1

Maintain and periodically test the warning sirens to inform the public of imminent flood potential.

Responsibility: Ross Valley Fire Department

Schedule: On-going

Program 6.3.1

Develop and disseminate protocols for activation of warning sirens, TENS/MEANS, and other flood notification measures, and include them in the Emergency Operations Plan.

Responsibility: Ross Valley Fire Department; Police
Schedule: 2010

Program 6.3.1

Conduct public education program to inform residents of appropriate measures to take when an alarm is sounded and document flood evacuation procedures in Emergency Operations Plan.

Responsibility: Disaster Council; Ross Valley Fire Department; Police
Schedule: 2010

Program 6.3.1

Make sandbags and plastic sheeting available to residents in anticipation of rainstorms. Facilitate access by publicizing distribution locations for sandbag filling.

Responsibility: Public Works
Schedule: On-going

Program 6.3.1

Provide public information on locations for obtaining sandbags and/or deliver those sandbags to those various locations throughout a city and/or county prior to and/or during the rainy season.

Responsibility: Public Works, Fairfax Volunteers
Schedule: Ongoing

Program 6.3.1

Encourage home and apartment owners to participate in home elevation programs within flood hazard areas.

Responsibility: Planning and Building Department
Schedule: Ongoing

Program 6.3.1

Improve monitoring of creek and watercourse flows to predict potential for flooding downstream by working cooperatively with land owners and the cities and counties in the watershed.

Responsibility: Public Works in cooperation with County of Marin Flood District 9
Schedule: Ongoing

FIRE HAZARD PREPAREDNESS

Objective ESE 7
Prepare the community for fire hazards.

Policy ESE-7.1

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

Program ESE-7.1.1

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: Ross Valley Fire Department
Schedule: On-going

Program ESE-7.1.2

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, Planning and Building Services
Schedule: 2010

Program ESE-7.1.3

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: 2010 upon acceptance of the General Plan

Program ESE-7.1.4

Maintain and operate warning sirens in locations at highest risk from wildland fires.

Responsibility: Ross Valley Fire Department, Public Works
Schedule: 2010

Program ESE-7.1.5

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-7.2

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

Program ESE-7.2.1

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, Ross Valley Fire Department
Schedule: Annual

Program ESE-7.2.2

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

Program ESE-7.2.3

Develop unused or new pedestrian rights-of way as evacuation routes (such as fire roads in park lands).

Responsibility: Ross Valley Fire Department
Schedule: On-going

Program ESE-7.2.4

Develop and implement a notification phone tree for each pedestrian evacuation area to formally identify persons responsible for initiating the phone tree, persons with special needs, and protocols for activation.

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

Program ESE-7.2.5

Develop a defensible space vegetation program that includes the clearing or thinning of (a) non-fire resistive vegetation within 30 feet of access and evacuation roads and routes to critical facilities, or (b) all non-native species (such as eucalyptus and pine, but not necessarily oaks) within 30 feet of access and evacuation roads and routes to critical facilities.

Responsibility: RVFD
Schedule: On-going

Program ESE-7.2.6

Showcase "model" properties exhibiting defensible space and structural survivability in neighborhoods that are wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.

Responsibility: Fire Department
Schedule: Ongoing

Program ESE-7.2.7

Work with residents to ensure adequate plans are developed for appropriate access and evacuation in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.

Responsibility: Planning and Building Department, Fire Department
Schedule: Ongoing

Program ESE-7.2.8

Assist residents and private businesses in the development of defensible space through the use of, for example, "tool libraries" for weed abatement tools, roadside collection and/or chipping services (for brush, weeds, and tree branches) in wildland-urban-interface fire-threatened communities or in areas exposed to high-to-extreme fire threat.

Responsibility: Fairfax Volunteers
Schedule: Ongoing

INFRASTRUCTURE HAZARDS PREPAREDNESS

OBJECTIVE ESE-8
Prepare the community to respond to a regional disruption of services.

Policy ESE-8.1
Develop community capacity to respond to a disruption of services due to a regional disaster event.

Program ESE 8.1.1

Provide materials to the public related to planning for power outages.

Responsibility: Public Works Police, Fire
Schedule: Ongoing

Program ESE 8.1.2

Provide materials to the public related to family and personal planning for delays due to traffic or road closures or due to transit system disruption..

Responsibility: Police and Fire
Schedule: Ongoing

Program ESE 8.1.3

Work with MMWD to provide materials to the public related to coping with reductions in water supply or contamination of that supply.

Responsibility: Police, fire

Schedule: Ongoing

Program ESE 8.1.4

Work with the Sanitary District to provide materials to the public related to coping with disrupted storm drains, sewage lines, and wastewater treatment (such as that developed by ABAG's Sewer Smart Program).

Responsibility: Police, Fire, Public Works Department
Schedule: Ongoing

Program ESE 8.1.5

In conjunction with MMWD, evaluate the feasibility of providing emergency drinking water.

Responsibility: Town Council
Schedule: Ongoing