



**Agenda Item No. 3.**

**COVER SHEET**

**Date:** December 5, 2016

**To:** Mayor Hoertkorn and Council Members

**From:** Joe Chinn, Town Manager

**Subject:** Wildland Urban Interface Code Amendment Discussion

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**Purpose and Objective**

The purpose and objective of the discussion is to provide background information for consideration regarding the Wildland Urban Interface (WUI). Attached is a Staff Report prepared by Chief Mills (which includes a proposed map and a WUI Frequently Asked Question sheet) and a WUI Fact Sheet that provides a combined summary of the current State and local regulations as well general information regarding items considered relevant to the discussion regarding the WUI.

The Council Community Protection Committee has met several times to discuss WUI, most recently on September 20, 2016. At the September 20<sup>th</sup> Committee meeting it was determined that there should be a Council Workshop so the entire Council would have the background information and opportunity to ask questions related to the WUI regulations. It is anticipated that following this meeting, the item will be brought to a regular Council meeting for action in the early part of 2017.

When reading through the Staff Report and the WUI Fact Sheet, as well as the presentation presented by the Ross Valley Fire Department on December 5, 2016, the issues the Town Council should consider relative to potential code amendments would be the following:

1. WUI Regulations. The Town Council should gain an understanding of the State WUI regulations and proposed local regulations and consider how any new WUI regulations best fit the Ross Community. In this process, there will be discussions of current regulations that are in effect that assist properties in being fire safe as well as additional requirements in a WUI mapped area that further improve fire safety.

2. Adoption and extent of a WUI Map. The Town does not have a current WUI Map. The Town Council should consider adopting a map that covers the entire town and/or a map designating select areas of the Town. Currently, approximately 304 existing parcels fall within areas designated by the Town's Hillside Lot Regulations (Ch. 18.39 of the Ross Municipal Code) where WUI regulations may be applied when a Hillside Lot Permit is being requested.
3. WUI Triggers. The Council will need to determine whether the WUI regulations should apply to new construction or both new construction and substantial remodels. Currently the State only requires WUI regulations be applied to new construction, however, some municipalities in Marin and Marin County have adopted regulations to apply to substantial remodels as is recommended by the Ross Valley Fire Department. If WUI triggers are applied to substantial remodels, then clear definitions are needed on what level of remodel triggers what type of WUI improvements.
4. Vegetation Management Plans. When a parcel is located within designated WUI area as defined by a WUI Map and a discretionary or ministerial permit is being requested, the Ross Valley Fire Department would be able to request a Vegetation Management Plan (VMP). A VMP is essentially an expanded landscape plan whereby fuel clearance (vegetation and tree removal and trimming), defensible space, and new non-pyrophytic landscape plantings would be shown.

**Attachments**

1. December 5, 2016 Staff Report (includes Map and Frequently Asked Questions) prepared by Chief Mark Mills
2. WUI Fact Sheet

## **ATTACHMENT 1**

## ROSS VALLEY FIRE DEPARTMENT

### STAFF REPORT

For the meeting of: December 05, 2016

**To:** Town of Ross Council  
**From:** Ruben Martin, Fire Inspector  
Mark E. Mills, Fire Chief  
**Subject:** DESIGNATING WILDLAND-URBAN INTERFACE FIRE AREAS

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#### RECOMMENDATION:

It is recommended by the Ross Valley Fire Department that the Council introduce an ordinance designating the Wildland-Urban Interface Fire Areas in the Town of Ross Local Responsibility Area pursuant to the Wildland-Urban Interface Fire Area map, as Attachment A.

#### BACKGROUND:

The background information concerning the adoption of a Wildland Urban Interface (WUI) Zone requires the explanation of several critical terms. These definitions are provided by the California Office of the State Fire Marshal (OSFM) and the California Department of Forestry and Fire Protection (CALFIRE) and are accepted throughout the state.

A *wildfire*, as defined by the State of California, is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources. A *wildfire exposure* is a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by a vegetation fire to a structure and its immediate environment. *Fire Hazard Mapping* is a way to measure the physical fire behavior and predict the damage a fire is likely to cause. Fire hazard measurements include the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front.

A *Fire Hazard Model* considers the wildland fuels, topography, weather, and ember production. Fuel is that part of the natural vegetation that burns during the wildfire. The vegetation component of the model predicts the potential fire impact on the vegetation only. The model also considers topography, with consideration to the steepness and aspects of the slopes. Fires have been proven to spread faster as they burn up-slope. The weather (temperature, humidity, and wind) component has a significant influence on fire behavior and spread. Fires spread faster and with more intensity when air temperature is high, relative humidity is low, and the winds are strong.

Finally, the model considers the production of burning firebrands. Firebrands are blown ahead of the main fire, spreading the fire to nearby structures and igniting them from the inside. Firebrands have been recorded being blown over a half mile ahead of the flaming front.

A *wildland-urban interface (WUI) fire area* is a geographical area identified by the state in any Fire Hazard Severity Zone.

Several factors lead to the ignition of homes during a wildfire event. Recent research indicates that wildland fires progress from a fire involving wildland vegetation only, to embers and wildland vegetation igniting domestic vegetation, which then ignites the adjacent structure(s). Subsequently, the fire morphs in to a series of structure fires, with involved structures igniting other structures.

In addition to the defensible space available around structures, other factors that lead to structure ignition include the configuration of building elements and the type of construction materials used. For example, CALFIRE's study of the Santa Barbara Paint Fire (5000 acres, 440 houses, 28 apartment complexes) found an 86% survival rate for homes with non-combustible roofs and 30 feet of defensible space. Similarly, research indicates that home ignitability, rather than wildland fuels is the main cause of home losses during WUI fire events. Studies have shown that at the Witch and Guejito fires (San Diego County, 197,000 acres & 1,500 homes destroyed), two out of every three structures destroyed were ignited by embers.

Over the last decade, numerous communities throughout the western United States have been devastated by extreme wildland fires that have destroyed thousands of homes, damaged public infrastructure, disrupted private business, and caused hundreds of millions of dollars in property damage, suppression and rehabilitation costs. The fires have continued to increase in intensity and frequency as evident in our local geographic area.

As a result of the 1991 Oakland Hills fire, the "Bates Bill" legislation was approved that required the State (Cal Fire), to identify Fire Hazard Severity Zones in which to implement ignition resistant building standards, defensible space standards and seller's disclosure standards to mitigate the rate of spread and reduce the intensity of uncontrolled fires. In conjunction with identification of Moderate, High, and Very High Fire Hazard Severity Zones, maps were authorized via Title 14 CCR § 1280 and developed depicting the Very High Fire Hazard Severity Zones, as such zones exist both in State Responsibility Areas (SRA) and Local Responsibility Areas (LRA), such as the Town of Ross. The location of the boundaries was developed with recommendations from CALFIRE and the Marin County Community Wildfire Protection Plan (CWPP) based on the evaluation of fire history, fuel growth, density of housing, proposed developments, access, and water supply considerations.

A Wildland-Urban Interface (WUI) Fire Area is a geographical area identified by the State as a Fire Hazard Severity Zone in accordance with the Public Resources Code sections 4201 through 4204 and Government Code sections 51175 through 51189 and/or other areas designated by the enforcing agency to be at a significant risk from wildfires following a finding supported by substantial evidence in the record pursuant to the California Fire Code Section 4904.2. Simply defined, a wildland urban interface area is any area containing structures within 1500 feet of open space or forested areas. The WUI is a combination of structures and wildland areas that could result in a fire crossing over from either format. The fire response requires specific equipment and tactics due to the complexity of the multiple fuel types and topography.

The State designated three levels of hazard zones; Moderate, High and Very High Fire Hazard Severity Zones. All three areas require application of the new building standards relating to fire and public safety.

In the Town of Ross Local Responsibility Area, the State has designated one type of hazard zone: Very High Fire Hazard Severity Zone (only one parcel within the town). The Fire Department is recommending that the Council designates the Wildland-Urban Interface Fire Area, which would provide the Ross Valley Fire Department and the Town of Ross, the legal authority to enforce WUI building code regulations throughout the Town. Currently, the WUI standards would only apply to areas within the Hillside Lot Ordinance.

Building standards relating to fire and public safety for roofs, exterior walls, structure projections and structure openings of new buildings located in a Wildland-Urban Interface Fire Area are set forth in the 2016 California Building Code Chapter 7A and the 2016 California Residential Code Chapter 337 (*effective 01/01/2017*). The purpose of these regulations is to establish minimum standards for the protection of life and property by increasing the ability of a new building located in any area designated as a Wildland-Urban Interface Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contribute to a systematic reduction in conflagration losses.

#### **DISCUSSION:**

The Ross Valley Fire Department and the Town of Ross Building Official are responsible for the enforcement of building standards adopted by the State Fire Marshal and published in the California Building Standards Code relating to fire and panic safety via Health & Safety Code § 13146. The Fire Department has recommended designated areas at significant risk from wildfires in the Town of Ross (please see attachment A: Map-Wildland-Urban Interface Fire Area Map). The WUI boundaries for the Town of Ross were determined based on structure density and proximity to areas with a high density of burnable fuels and by the Marin County Community Wildfire Protection Plan (CWPP) using a combination fire modeling data program (FlamMap), vegetation data from local land management agencies, and recent laser and radar imaging (LiDAR) measurements.

Homes and structures located anywhere in and around the WUI are at a higher risk for exposure to wildland fire. Fire can spread rapidly within WUI areas through adjacent structures and/or vegetation, or by ember dispersion. Property owners in the WUI have a responsibility to prepare their property for structure defense by providing adequate defensible space and complying with WUI building codes and ordinances. It is the responsibility of the property owner to provide the necessary protection for their individual property which in turn, better prepares the entire community for defense from a wildfire incident.

By adopting an ordinance designating the Wildland-Urban Interface Fire Areas, the Town of Ross will provide the community with building standards consistent with those being enforced throughout the Ross Valley Fire Department's jurisdiction and the County of Marin. The Town of Ross General Plan specifically states in Part IV, *Assuring the Health and Safety of the Community*, Goal 5.3, 5.4, and 5.5:

**"5.3 Fire Resistant Design.** Buildings should be designed to be fire defensive. Designs should minimize risk of fire by a combination of factors including, but not limited to, the use of fire-resistant building materials, fire sprinklers, noncombustible roofing and defensible landscaping space.

**5.4 Maintenance and Landscaping for Fire Safety.** Ensure that appropriate fire safety and landscaping practices are used to minimize fire danger, especially in steeper areas. Due to the high fire hazard in the steeper areas of Town, special planting and maintenance programs will be required to reduce fire hazards in the hills and wildland areas, including removal of invasive non-native vegetation such as broom, acacia and eucalyptus.

**5.5 Fire Safety in New Development.** New construction will adhere to all safety standards contained in the Building and Fire Code. Hazards to life and property shall be minimized by such measures as fire preventive site design, fire resistant landscaping and building materials, and the use of fire suppression techniques and resources."

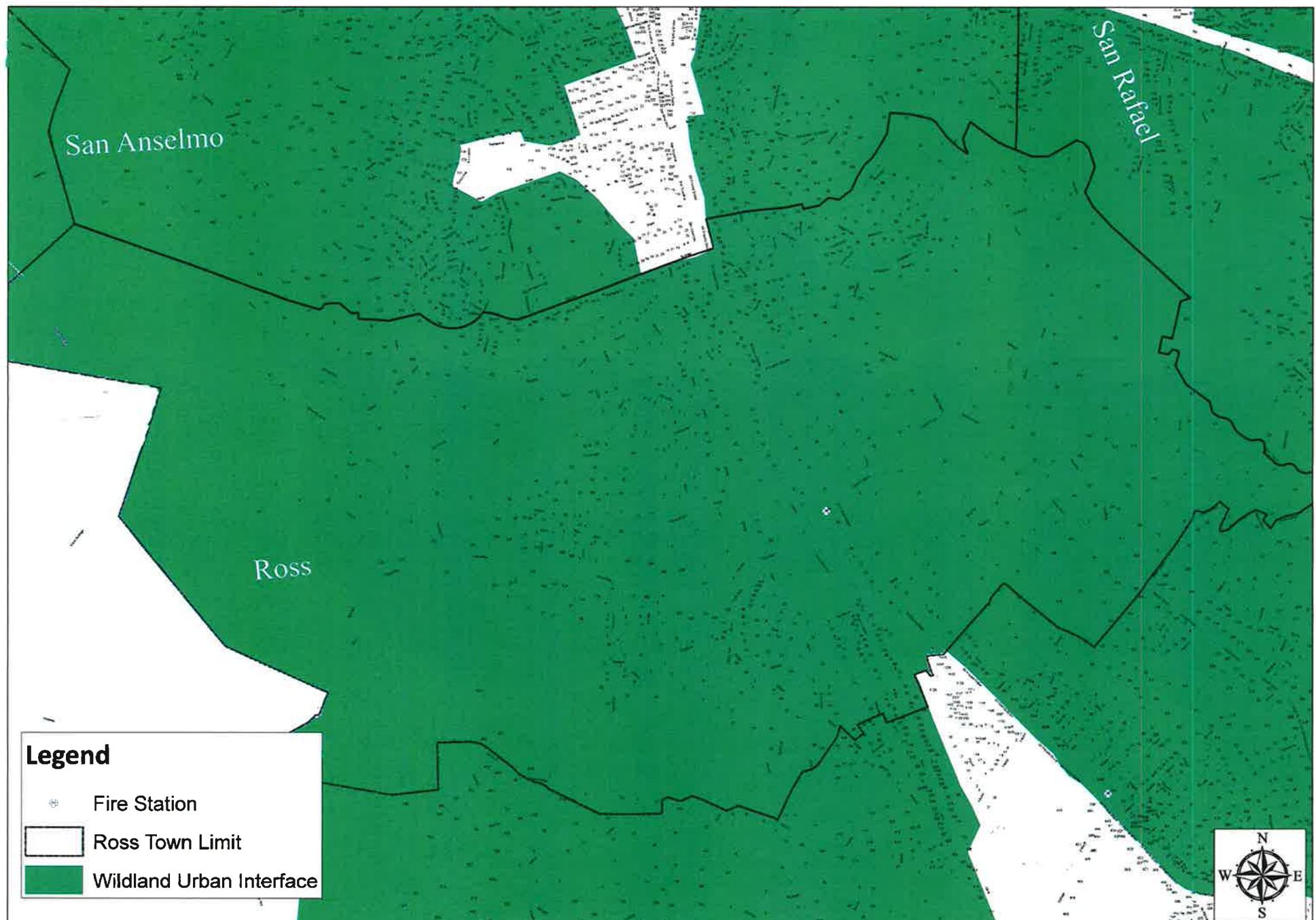
The Town of Ross already enforces the Hillside Slope Ordinance, which requires compliance with California Building Code 7A and California Fire Code Chapter 49, in areas of the Town that exceed 30% slope. The adoption of the WUI Zone map will identify the additional areas of the Town that need to provide proper landscape and vegetation management, as well as, fire resistive construction for new structures and substantial remodels. The adoption will bring the Town into alignment with the goals set forth in the General Plan. The adoption of the WUI Zone will allow the Town of Ross Building Official and the Fire Code Official to consistently upgrade the Town's protection from wildfire.

#### **Fiscal, resource and timeline impacts**

There are no immediate fiscal impacts for the Town of Ross. Building construction costs will increase in order to comply with the additional California Building Code Chapter 7A and California Fire Code Chapter 49 requirements.

#### **Attachments:**

Town of Ross WUI Map



**TOWN OF ROSS**  
**Wildland Urban Interface Zone**

## **WILDLAND URBAN INTERFACE "WUI" FREQUENTLY ASKED QUESTIONS**

### **What is a Wildland Urban Interface Zone?**

**Answer:** The Wildland Urban Interface is a geographic area identified by the State as a "Fire Hazard Severity Zone" or other area designated by the enforcing agency (Town of Ross and RVFD) to be at a significant risk from wildfires.

The map is used to determine where the fire-resistive construction requirements of Chapter 7A of the County Building Code and the vegetation-management requirements in Chapter 47 of the County Fire Code apply.

### **What is a "Fire Hazard Severity Zone," or FHSZ?**

**Answer:** California law requires CAL FIRE to identify areas based on the severity of fire hazard that is expected to prevail there. These areas, or "zones," are based on factors such as fuel (material that can burn), slope and fire weather. There are three zones, based on increasing fire hazard...medium, high and very high.

### **How are the Hazard Zones determined?**

**Answer:** The Fire Hazard Severity Zone maps were developed using a science-based and field tested computer model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. Many factors are considered such as fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather for the area. There are three hazard zones: moderate, high and very high.

### **What are the uses of Fire Hazard Severity Zones?**

**Answer:** The zones serve several purposes. They are used to designate areas where exterior wildfire exposure protection building codes apply to new buildings. It can be a factor in real estate disclosure. Local government considers fire hazard severity in the safety element of the general plan.

### **What are my requirements if I live in a designated WUI Zone?**

**Answer:** You must maintain 100' of Defensible Space around your home and accessory structures. (*This does not mean the clear cutting of trees or landscaping*).

### **Proper Defensible Space is achieved by accomplishing the following:**

- Cutting dry grass regularly within 100 feet of your home. Rake and remove clippings.
- Use irrigated, fire-resistant plants where possible.
- Make decks fire safe by clearing vegetation and combustibles like lumber and firewood from underneath.
- Keep trees limbed up 10' from the ground or from the tops of plants below (or 1/3 the height of trees shorter than 30')
- Cut back at least 10' from your chimney and roof. Remove all dead limbs.
- Clean all needles and leaves from the roof and rain gutters regularly during fire season.

- Maintain your landscaping by mowing, watering, weeding and removing dead needles and leaves.
- Maintain fire engine access to your home by clearing vegetation 10' from the sides of roads and driveways and 14' vertically.
- Make your address visible from the street in both directions, with 4" (minimum) reflective numbers on a contrasting background.

**(Defensible Space inspections currently occur in the Town of Ross)**

#### **What is a Vegetation Management Plan “VMP”?**

**Answer:** In a VMP the landscape designer provides a plant list; a bibliography of the document or publication in which the plants are stated to be fire resistant; a site assessment detailing the slope, aspect (direction in which the slope faces), and existing plant material; and defensible space maintenance standards — guidelines for keeping the property fire safe.

#### **Is a VMP the same as Defensible Space?**

**Answer:** A VMP is a defensible space plan that is used when re-landscaping your property as part of a major remodel or construction project.

#### **How will the new WUI building codes affect me as a property owner?**

**Answer:** Building Codes related to WUI would only apply when you make improvements or repairs to your home.

#### **What are the WUI building requirements if I want to remodel my home?**

**Answer:** The scope of work for your project will determine the requirements. For example:

- Minor Interior Remodel (less than 50% of the existing square feet of your home).
  - Maintain and/or create adequate defensible space.
- Substantial Interior Remodel (more than 50% of the existing square feet of your home).
  - Fire Sprinklers
  - VMP
- Small Additions (Less than 50%).
  - Addition built with approved WUI construction materials
  - Defensible Space
- Major Additions (Greater than 50%).
  - Addition built with approved WUI construction materials
  - Fire Sprinklers
  - VMP
- Exterior Residing
  - New siding built to WUI construction standards
  - Maintain adequate Defensible Space
- Minor repairs
  - Like for Like
  - Maintain adequate Defensible Space

## **ATTACHMENT 2**

## **WUI FACT SHEET**

### **What are the State Laws pertaining to WUI?**

- CA Building Code CH 7A
  - ✓ Requires specific building materials and assemblies and new construction within WUI's
  - ✓ Exempts accessory structures when located 30 feet from the main residence, is 120 square feet or less in size, and has a "U" occupancy.
  - ✓ Exempts Class U buildings for agricultural uses when located 50 or more feet from a residence
  - ✓ Exempts additions to structures
  - ✓ Requires Class A roofing or Class A by assembly
  - ✓ Requires attic ventilation
  - ✓ Requires a Vegetation Management Plan
- CA Fire Code CH 47
  - ✓ Requires Vegetation Management Plan
  - ✓ Requires Defensible Space
  - ✓ Requires Materials and Methods of Construction (e.g., roofing, attic ventilation, under eave, exterior wall siding and sheathing, tempered windows, and decking)
- CA Title 24- CA Residential Building Code
  - ✓ Requires specific building materials and assemblies and new construction within WUI's
  - ✓ Exempts accessory structures when located 30 feet from the main residence, is 120 square feet or less in size, and has a "U" occupancy.
  - ✓ Exempts Class U buildings for agricultural uses when located 50 or more feet from a residence
  - ✓ Exempts additions to structures
  - ✓ Requires Class A roofing or Class A by assembly
  - ✓ Requires attic ventilation
  - ✓ Requires a Vegetation Management Plan

- PRC 4290
  - ✓ Allows creation of WUI maps
- PRC 4291
  - ✓ Defensible space requirements (100 feet on each side of property line, but not beyond property line)
- CA Code of Regulations Title 14- Natural Resources
  - ✓ Access, signing, water standards, fuel modification standards.

#### **What are Ross' regulations pertaining to WUI?**

- Chapter 12.12 of the Ross Muni Code- Weeds, Trees, and Vegetation
- Chapter 14.04 of the Ross Muni Code- Fire Code
- Chapter 15.05 of the Ross Muni Code- Building Code
- Chapter 15.06 of the Ross Muni Code- Residential Building Code
- Chapter 18.39 of the Ross Muni Code- Hillside Lot Permit

#### **What can Ross Valley Fire Currently Enforce without a WUI Map?**

- Defensible Space for properties within an SRA, Very High Fire Hazard Severity Zone, or properties within a locally approved WUI
  - ✓ One property located in Very high Severity Zone (APN 073-011-26- Berg)
- Fire Hazard Reduction Zone from roadways- clear vegetation within 10 feet of each side of the road- Exception for specimen trees when not causing a conflict to fire hazard.
- Class A Roofing or Class A by assembly
- Fire Sprinklers
- All State WUI requirements for projects that trigger a Hillside Lot Permit per Ch. 18.39 of the Ross Muni Code (for new construction, additions of more than 200 square feet, adding more than 1,000 square feet of new impervious surfaces, grading more than 50 cubic yards of soil, constructing a retaining wall that is taller than 4 feet, constructing a retaining wall that is more than 100 feet long, or having a site improvement within 25 feet from a creek)

### **What can't Ross Valley Fire Enforce without a WUI Map?**

- Vegetation Management Plans for parcels in Ross that are not triggering a Hillside Lot Permit
- Fire Hazard Reduction Zones (removal of combustible vegetation) for all other parcels in Ross that are not triggering a Hillside Lot Permit

### **What can the Ross Building Department Enforce without a WUI Map?**

- Defensible Space on Hillside Lots per PRC 4291 & California Government Code 51182 (Section 12.12.016).
- Require full State WUI compliance for projects that trigger a Hillside Lot Permit
- Class A roofing or Class A by Assembly
- Fire Sprinklers

### **Specific list of building permit plan check requirements Ross requires during plan check for properties within a designated WUI Area (Hillside Lot Permits and Very High Fire Hazard Severity Zones):**

- Metal Gutters
- Eave protection and attic ventilation
- WUI compliant Windows (tempered glass or triple pane glazing)
- Ignition resistant decking material
- Fire resistant exterior wall coverings
- 20 minute fire protection rating solid core wood doors
- Vegetation Management Plan
- Class A roofing material or Class A by assembly (Required for all properties in Ross when proposing a new roof)
- Fire Sprinklers Plan (Required for all properties in Ross when triggering a substantial remodel per the code)

### **What are the estimated costs of complying with WUI? (Based on information from the City of Los Altos Hills)**

- For typical large new homes- \$20-\$50K in additional costs (depending on design)- approximately 2% of the cost of construction at the high end
- Most expensive upgrade is glazing- 20% more for WUI compliant windows
- Design choices by owner are the biggest contributor to increased WUI compliance costs
- Numerous WUI compliant materials and not excessive in cost

## **Summary of Marin WUI Mapping by Jurisdiction**

### **Adopted Cal Fire WUI Maps**

- |                     |   |
|---------------------|---|
| 1. Larkspur:        | New Construction and Substantial Remodels |
| 2. Novato:          | New Construction and Substantial Remodels |
| 3. County of Marin: | New Construction and Substantial Remodels |

### **Adopted Modified Cal Fire WUI Maps (less than Cal Fire recommendation)**

- |                 |   |
|-----------------|---|
| 1. Fairfax:     | New Construction and Substantial Remodels |
| 2. San Anselmo: | New Construction and Substantial Remodels |
| 3. Tiburon:     | New Construction                          |
| 4. San Rafael:  | New Construction                          |

### **Adopted Modified Cal Fire WUI Maps (more than Cal Fire recommendation)**

- |                  |   |
|------------------|---|
| 1. Mill Valley:  | New Construction                          |
| 2. Corte Madera: | New Construction and Substantial Remodels |

### **Have not adopted any WUI Map**

- |              |
|--------------|
| 1. Sausalito |
| 2. Belvedere |
| 3. Ross      |

## **Ross Parcel Statistics**

- ✓ 957 parcels within Town of Ross
- ✓ 913 parcels privately owned
- ✓ 44 parcels owned by Town of Ross or other government entity
- ✓ 304 parcels considered to be a Hillside Lot (30% or greater slope, and/or partially or wholly located within a slope hazard stability zone 3 or 4)

## **What is Defensible Space?**

Defensible Space refers to an area around the perimeter of structures or developments in the wildlands where the flammable vegetation has been modified to reduce the potential for the structure and/or structures to ignite in the event of a wildfire. Defensible space is required per Public Resources Code (PRC) 4291. Purpose to maintain space of 100 feet from all sides of a structure to the property line. Intensity of fuel management varies with the feet from the structure being the most important.

Single specimens of trees, ornamental shrubbery or ground covers are permissible provided that they do not form a means of rapidly transmitting fire from the native growth to any structure. Such specimens shall be spaced a minimum of 10-15 feet, both horizontally and vertically, from other specimens, structures or surrounding native brush. All trees and shrubs shall be maintained free of deadwood and litter.

## **What is a vegetation management plan?**

In compliance with PRC 4291, a Vegetation Management Plan is a plan that shows fuel modification distances, type of vegetation and topographic features are factors in determining adequate green belts and fire fuel modification around structures to determine the minimum defensible space requirements.

## **What is the Town's current definition of a "Substantial Remodel" per Title 14 and 15 of the Ross Muni Code?**

**Substantial Remodel** shall mean the renovation of any structure, which combined with any additions to the structure, affects a floor area which exceeds fifty percent of the existing floor area of the structure within any 36 month period. When any changes are made in the building, such as walls, columns, beams or girders, floor or ceiling joists and coverings, roof rafters, roof diaphragms, foundations, piles or retaining walls or similar components, the floor area of all rooms affected by such changes shall be included in computing floor areas for the purposes of applying this definition. This definition does not apply to the replacement and upgrading of residential roof coverings.