WOODSIDE/PORTOLA VALLEY TOWN COUNCIL JOINT SPECIAL MEETING AGENDA January 30, 2014
Portola Valley Community Hall 765 Portola Road, Portola Valley, CA 94028

CALL TO ORDER

ROLL CALL - WOODSIDE

ROLL CALL – PORTOLA VALLEY

COMMUNICATIONS

NEW BUSINESS

1. Study Session: Discussion of Potential for Regulating the Use of Wood Shake Roofs to Reduce Fire Risk.

2. Discussion of Fire Prevention Initiatives with the Woodside Fire Protection District.

ADJOURNMENT

IN COMPLIANCE WITH THE AMERICANS WITH DISABILITY ACT, IF YOU NEED SPECIAL ASSISTANCE TO PARTICIPATE IN THIS MEETING, PLEASE CONTACT THE TOWN CLERK AT (650) 851-6790. NOTIFICATION IN ADVANCE OF THE MEETING WILL ENABLE THE TOWN TO MAKE REASONABLE ARRANGEMENTS TO ENSURE ACCESSIBILITY TO THIS MEETING.

PLEASE NOTE THAT PURSUANT TO THE STATE OF CALIFORNIA'S OPEN MEETING RULES, THIS MEETING IS BEING AUDIO TAPED.

ANY WRITINGS OR DOCUMENTS PROVIDED TO A MAJORITY OF THE TOWN COUNCIL REGARDING ANY ITEM ON THIS AGENDA WILL BE MADE AVAILABLE FOR PUBLIC INSPECTION AT THE ADMINISTRATION COUNTER AT TOWN HALL LOCATED AT 2955 WOODSIDE ROAD DURING NORMAL BUSINESS HOURS.

Towns of Woodside and Portola Valley
Joint Study Session
January 30, 2014

Agenda item #1

Regulation of Wood Shake Roofs in Our Communities to Reduce Fire Risk

Attachment 1: Memorandum from Nick Pegueros to the Portola Valley Town Council

Attachment 2: Memorandum from Kevin Bryant to the Woodside Town Council

MEMORANDUM

TOWN OF PORTOLA VALLEY

TO: Mayor and Members of the Town Council

FROM: Nick Pegueros, Town Manager

DATE: January 30, 2014

RE: **Discussion of Potential for Regulating the Use of Wood Shake and Wood Shingle Roofs to Reduce Fire Risk**

RECOMMENDATION

The recommendation is that the Town Council considers the information attached to this memo, receives a presentation from the Woodside Fire Protection District (District), and hears comments from industry experts and members of the public. At the conclusion of the study session, the Town Council could then provide further direction to Town staff on how to proceed with the proposal from the District. This could include the preparation of an ordinance to regulate wood shake and wood shingle roofing materials for new construction and major roof replacements.

BACKGROUND

On October 3, 2013, the District requested that Firewise – the joint committee of Woodside, Portola Valley, and District – consider amending each town's building code to prohibit or otherwise regulate the installation of wood shingle and wood shake roofs. Firewise subsequently recommended that the councils of both town's hold a joint study session to consider the District's proposal and hear perspectives from industry experts and members of the community.

DISCUSSION

While each town will undertake its own process for evaluating the District's proposal, at the Study Session both councils will have the opportunity to receive a presentation from the District (Attachment A), hear comments from industry experts, and take public comment. *Specific to Portola Valley*, staff provides the following information:

1. **ASCC Input** – At their meeting on January 13, 2014, staff requested initial comments from the ASCC on the concept of banning wood roofs. The relevant section from the draft meeting minutes is included with this report. (Attachment B)

2. **Summary of Recent Roof Permits** – Staff compiled roof permit data for the past 5 years to determine the number of wood material roofs installed. In that time, the Town has issued 324 roofing permits with 17, or 5%, of the issued permits providing for wood material roofs as detailed in the following chart:

Calendar Year	Non-wood Materials	Wood Materials	Total	Wood as Percent of Total
2013	71	0	71	0%
2012	56	4	60	7%
2011	58	3	61	5%
2010	66	3	69	4%
2009	56	7	63	11%
Total	**307**	**17**	**324**	**5%**

3. **Public Process** – If the Town Council provides staff direction to move forward with the ordinance process, the Town Planner and Town Attorney will work closely with the Planning Commission on a proposed ordinance. The Planning Commission will refer the ordinance to the ASCC for their comments. When the Planning Commission has completed its review, the Commission will recommend a final draft ordinance to the Town Council for consideration at two public hearings. Overall, staff anticipates that there will be a minimum of four or five public meetings for public comment on this issue. The entire process is expected to last at least six months considering existing project workloads and commitments.

FISCAL IMPACT

If the Town Council provides direction to staff to start the ordinance process, staff will prepare a detailed estimate of the time and expense required to complete the process and present it to the Town Council for approval at their regularly scheduled February 26, 2014 meeting.

ATTACHMENTS

A. "The Wood Shake and Shingle Roof Hazard" - Denise Enea, Fire Marshal, Woodside Fire Protection District
B. **DRAFT** ASCC Meeting Minutes Excerpt from January 13, 2014

The Wood Shake and Shingle Roof Hazard

Denise Enea, Fire Marshal, Woodside Fire Protection District

INTRODUCTION

As we see more and more homes being built in the wildland urban interface (WUI), the safety of these homes during wildland fires has become a major issue. History has proven that fires erupting in WUI areas are responsible for extremely large property losses. Approaches to this problem include improving management practices of forests, watersheds and open space to reduce fuel loading, improve fire service equipment and apparatus, improve community fire safety education, improve home designs and enhance planning/building and fire codes.

Unlike the normal house fire, the wildland fire represents an exterior fire exposure. As such, the components of a home that can immediately be affected by exposure to flames and burning debris includes ornamental plants near the home, wood decks of preservative-treated or naturally durable wood species, exterior siding, and wood shingle roofs.

There was a time when wood shakes and shingles were one of the few roofing materials available to the consumer. Today, there are a number of roofing products from which the homeowner, builder, and architect can choose. Wood shakes and shingles are frequently selected because of their aesthetic appeal, ability to blend a structure into a forest background, good insulation properties, and durability (if properly maintained). Although these advantages are noteworthy, wood shake and shingle roofs possess a highly undesirable characteristic:

WOOD SHAKE AND SHINGLE ROOFS INCREASE THE RISK OF

STRUCTURE LOSS DUE TO WILDFIRE.

THE HAZARD

A house can be threatened by wildfire in three ways: direct exposure to flames, radiated heat, and airborne firebrands. Of these, firebrands account for the majority of homes burned due to wildfire. Firebrands are burning embers produced by fire which are lifted into the air by a convection

column and carried beyond the fire front. Typical firebrand materials include pine and redwood needles, eucalyptus, bark, and if houses are burning, shakes and shingles.

Depending on wind speed and size of material, firebrands can be transported and deposited up to 1 mile (or further in extreme cases) ahead of the fire. A shower of thousands of firebrands can be produced during a major wildland fire. If these firebrands land in receptive fuel beds, numerous spot fires will be produced. Even homes located blocks away from the main fire can be threatened.

The most vulnerable part of a house to firebrands is the roof. Because of its angle, the roof and gutters can catch and trap firebrands. If the roof is constructed of combustible materials such as wood shakes and shingles, the house is in jeopardy of igniting and burning.

During the summer fire season in San Mateo County, temperatures are high and relative humidity is low. These conditions make wood shake and shingles easily ignitable. In addition, wood shakes and shingles are typically made from western red cedar which possesses low ignition temperature of 378°F. (Note: A glowing cigarette has an approximate temperature of 550°F).

Consequently, wood shake and shingle possess not only a potential hazard to the structure which they are installed, but also to other houses in the vicinity. Burning wood shakes and shingles can peel off, become firebrands, and be carried to additional receptive fuel beds, such as other combustible roofs and flammable vegetation in the home landscape. Firebrands consisting of burning shakes and shingles have been a major contributing factor to numerous fires in the western United States. The presence of flammable vegetation growing adjacent to the structure may also constitute a receptive fuel bed in steep hillsides of our community. A firebrand landing in flammable vegetation can start a fire and threaten a nearby house or easily spread into inaccessible ravines and quickly accelerate.

EFFECT ON HOUSE SURVIVABILITY

The probability of a house surviving a wildfire is greatly influenced by the type of roofing material involved and the amount of clearance of flammable vegetation. Fire resistant roof coverings that are non-combustible include masonry types, metal, slate, fiberglass shingles and asphalt shingles.

Figure 1. portrays the results of an investigation of 1,850 Southern California homes involved in wildfires. Depending upon the amount of brush clearance, houses with wood roofs were 2 to 21 times more likely to be destroyed by wildfire than those with fire resistant roofs.

Figure 1.

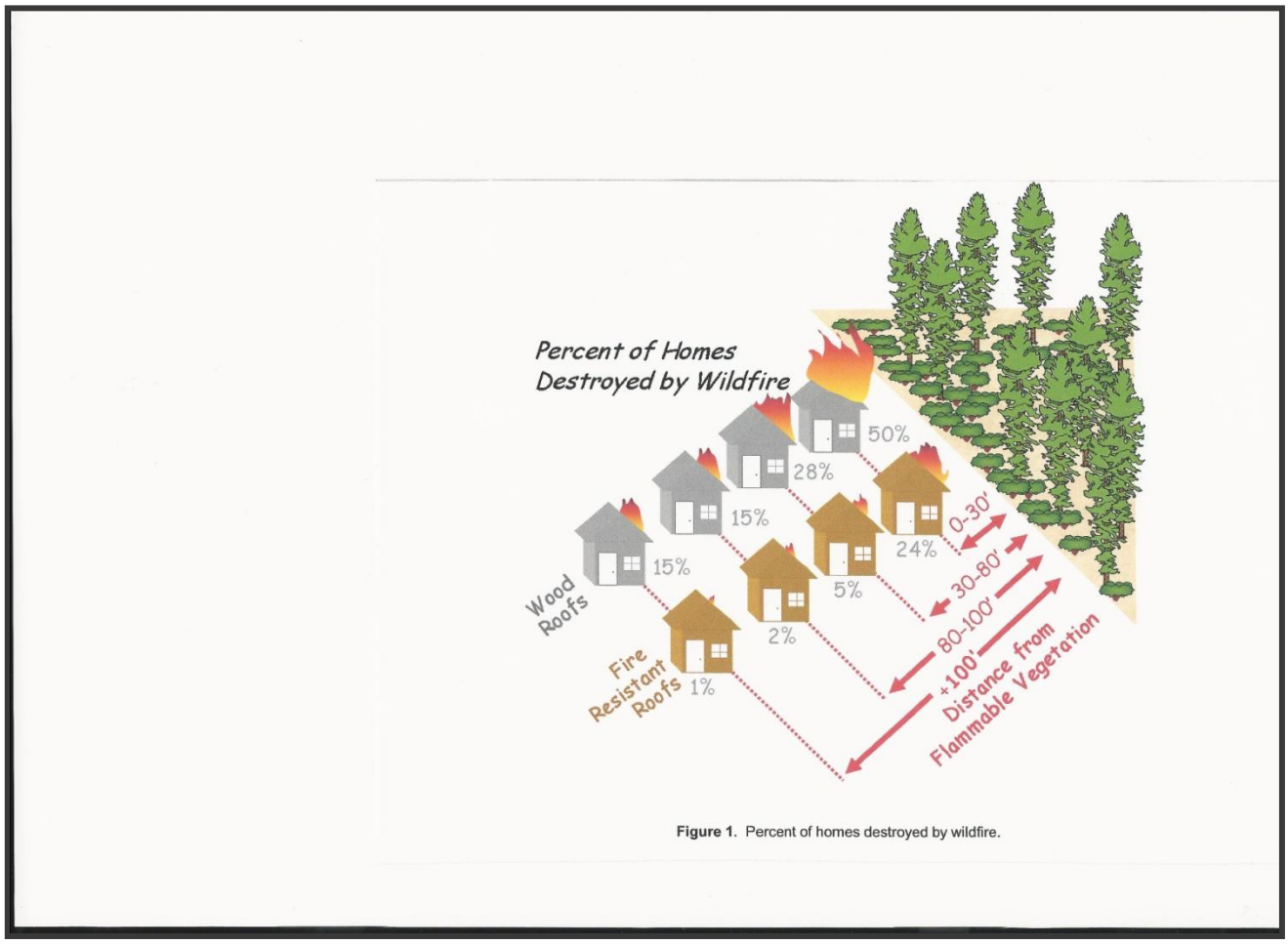

Figure 1. Percent of homes destroyed by wildfire.

Figure 2 indicates wildfire statistics collected from the Santa Monica Mountains of California,. Conclusions were that the most effective method of increasing house survivability during a wildfire event is the presence of a fire resistant roof and proper clearance of vegetation around the structure.

Figure 2.

ROOFING MATERIALS

Defensible Space Factor Study: Findings from the 1990 Painted Cave Fire Santa Barbara, California

Characteristics of Structure and Site	Probability that Structure Survived
Wood Roof, <30′ of defensible space, no defensive action taken	4%
Wood roof, <30′ defensible space	15%
Wood roof	19%
Non-wood roof	70%
Non-wood roof, >30′ defensible space	90%
Non-wood roof, >30′ defensible space, defensive action taken	99%

In Australia, based on an investigation of 450 homes destroyed by wildfire, researchers concluded that the presence of wood shake roofs was the single most influential factor in reducing house survivability under a given fire intensity.

It is important to note that the installation of a fire resistant roof and removal of adjacent flammable vegetation does not make a house invulnerable to wildfire. During intense wildfire conditions, exterior wall coverings, types of windows, decks, slope position of the structure, and other factors can affect house survivability.

FIRE-RETARDANT TREATMNETS

Pressure treated fire retardant shakes and shingles, have a higher degree of fire resistance. These wood shakes and shingles are impregnated with fire retardant chemicals under pressure at the factory. Class B or C fire resistance ratings can be achieved for pressure treated wood shakes and shingles depending upon the amount of chemicals injected and/or the type of roof deck and underlayment used. Tris (1-aziridinyl) phosphine oxide, (2) tetrakis (hydroxy-methyl) phosphonium chloride with urea and a mel-amine, and (3) dicyandiamide and phosphoric acid are some of the chemical used in proprietary formulas for reatardants.

There is a growing concern about the environmental and toxicological impact of building materials. The addition of performance chemicals to wood, such as fire retardants can be expected to have some environmental effect.

The USDA Forest Service, Forest Products Laboratory (FPL), in Madison, WI, is a fire research program oriented toward the fire behavior of wood products. FPL has conducted research on fire-retardant treatments (FRT) for wood shingles and methods for evaluating their performance. Studies involved an accelerated method for weathering treated wood shingles prior to fire testing and a companion study of 10 years of actual outdoor exposure prior to fire testing. Various exterior FRTs were evaluated in the 10-year study. Studies showed that exposure to UV, leaching by rain water and natural decay of the shakes and shingles all reduced significantly the fire retardant qualities of the treated products. After 10 years, fire brand testing and flame spread testing resulted in ignitions which closely resembled that of non treated shingles.

FIRE DISTRICT'S EDUCATIONAL ROLE

One component of a home's fire survival capability can be attributed to property owner education. The Fire District is committed and has numerous inspection and fuel mitigation programs available to all District residents. These programs are geared toward helping homeowners in our community improve the survivability of all structures. Passive fire protection of the structure is critical to its survivability in the wildland urban interface. Ember propagation from a nearby or as far away as 1 mile wildfire has proven that wood shake roofs are at risk and we have lost structures because of such events. Inspections can evaluate vulnerabilities of a structure and assist homeowners with priorities for retrofitting structures if they should choose.

CONCLUSION/RECOMENDATION

The Woodside Fire Protection District (WFPD) has a mission to protect life, property and the environment through prevention, education and emergency response. Any experienced firefighter will be able to provide historical facts relating to the increased ignitability, ember propagation and quick spread of roof fires consisting of wood shakes and shingles. Insurance companies also have long known the increased vulnerability of wood shake roofs and quite frequently will not insure or will not renew properties with wood shake roofs. WFPD is responsible for local amendments, adoption and enforcement of the California State Fire Code. Any amendments relating to roof ordinances could possibly be undertaken by WFPD and incorporated into the 2013 California Fire Code as local amendments however construction of roofs are currently enforceable by the California Building Code and Residential Code which are adopted and amended accordingly by the Towns.

WFPD recognizes the importance of maintaining the rural nature of the Towns. With so many new, widely accepted and utilized non combustible roofing products there is no longer a need to use wood shake to maintain a rural structure design.

Building in a sustainability manner is by far the most desirable method we can choose. We have to question the sustainability of a structure that has been destroyed by embers igniting its wood shake roof.

Older Shake Roofs and Affect of Fire Spread

New Wood Shake Roofs Still Being Installed

Deferred Maintenance/Severe Structure Vulnerability

Synthetic Class A Roof Material

SOURCES:

- *LeVan, S.L., and C.A. Holmes, 1986. Effectiveness of fire retardant treatments for shingles after 10 years of outdoor weathering. Res. Pap. FPL-474. Madison, WI: U.S. Dept. of Agriculture, Forest Service, Forest Products Laboratory*

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- *FSR TREATMENT Inc. Maple Ridge, BC; Material Safety Data Sheet Fire Retardant Shakes and Shingles. Western Red Cedar March 9, 2010.*

Discussion and Report, proposal for prohibition of the use of wood roofs

Vlasic presented the January 9, 2014 staff report on this matter. He explained that on January 30, 2014, the town council, as part of the Firewise Advisory Group process, would be participating in a joint meeting with the Woodside town council and representatives of the Woodside Fire Protection District, including fire marshal Denise Enea and that the meeting will, among other things, be considering the attached report prepared by Ms. Enea entitled "**The Wood Shake and Shingle Roof Hazard**." Vlasic advised that the town council is interested in the ASCC's input on the report prior to the 1/30 meeting and particularly the report objective to have wood roofs banned.

The ASCC considered the staff report and the report from fire marshal Enea. Public input was requested, but none offered. Thereafter, ASCC members concurred with the general direction of the fire marshal's report and offered the following input for town council consideration:

- Prohibition of woods roofs in general appears appropriate given the concerns noted in the reports and recent trends in building in town and should not create any significant issues in terms of conformity with town design objectives.
- In developing any ordinance prohibiting wood roofs, consideration will need to be given to those situations where, for example, a house still has a viable wood roof and is going through a remodel or addition process and only a small portion of the existing roof is impacted. There should be some provision for continued use of wood in such situations.
- Consideration would also need to be given to historic structures where wood roofing may be significant to the historic character of the building. As noted in the staff report, however, there are likely to be provisions in the state and federal historic preservation guidelines and standards that have allowances for alternative materials when enhanced safety and reduced risk are critical issues.

ASCC members also commented that, as noted in the staff report, in time there may be pressure to consider additional restrictions on the use of wood over any large exterior surface such as siding and that any such additional possible restrictions would likely, at least under current conditions, present more design issues and concerns.

TOWN OF WOODSIDE

MEMORANDUM

TO: MAYOR AND MEMBERS OF THE TOWN COUNCIL

FROM: KEVIN BRYANT, TOWN MANAGER

DATE: JANUARY 30, 2014

RE: JOINT STUDY SESSION: REGULATION OF WOOD SHAKE ROOFS IN OUR COMMUNITIES TO REDUCE FIRE RISK

BACKGROUND

The Firewise Committee consisting of representatives from the Towns of Woodside and Portola Valley have recommended to the Councils of both communities that a joint study session be held to discuss regulating the use of wood shake roofs to reduce fire risk. The Woodside Fire Protection District has asked each community to consider no longer allowing the use of wood shake roofs for new construction or major roof replacements.

DISCUSSION

The Woodside Fire Protection District Fire Marshal will present information regarding the use of wood shake roofs and the impact on fire safety. Attached to this memo is a report prepared by the Fire Marshal entitled "The Wood Shake and Shingle Roof Hazard." The Fire Marshal will also bring information on other communities that have prohibited the use of wood shake roofs.

Staff has also invited and expects local roofers to attend the meeting to be available to answer questions, as well as local insurance professionals to speak on the current insurance environment and what potential change to that environment would result in a change of the Town's regulations.

One local roofer provided staff the following estimates of the cost of roof installations for a 3,500 square foot ranch house with spaced sheathing. The cost estimate includes removal of an existing roof and replacement with materials described below. The cost does not include metal flashing.

50 year Composition Class "A" 1/2"CDX Plywood	**Wood Shake Class "A"**	**Slate with 1/2" CDX Plywood**
$19,000 - $21,000	$29,000 - $31,000	$39,000 - $41,000

To get a sense of the potential impact of regulating the use of wood shake roofs in the community, staff has reviewed the roof permits that have been issued over the last five years, from 2009 – 2013. The table below provides that information

YEAR	Total Roof Permits	Wood Shake	Pct.	Wood Shake Replaced with another type	Pct.
2009	48	4	8.3%	8	16.7%
2010	72	8	11.1%	15	20.8%
2011	97	6	6.2%	27	27.8%
2012	65	12	18.5%	18	27.7%
2013	71	7	9.9%	20	28.2%

The table indicates that about 10 percent of roof permits issued in Woodside over the last five years have been for wood shake roofs and that about 25 percent of the permits issued have been to replace wood shake roofs with another type of roof. This suggests there is already a transition occurring in the community away from wood shake roofs, although this information does not indicate why that may be the case.

Future Steps

If the Woodside Town Council elects to adopt restrictions on the use of wood shake roofs, it would be an amendment to Chapter 150 of the Woodside Municipal Code, Building Regulations. Typical amendments to Building Regulations, such as the recent adoption of the 2013 California Building Code, are done by the Town Council without review and recommendation from advisory bodies. However, because wood shake roofs do have a history in the community, and do have an aesthetic value, staff recommends that the Architectural and Site Review Board and Planning Commission provide recommendations to the Town Council about any proposed amendment prior to final action by the Council.

Staff anticipates that the amendment would be a relatively minor text change, and the process could be completed by July 1st, with the Building Division of the Public Works Department drafting the code amendment with the assistance of the Town Attorney.

CONCLUSION

The regulation of wood shake roofs is an important consideration for the Towns of Woodside and Portola Valley as both communities pursue a higher degree of fire safety. The joint study session of the communities is an important step in this process.

ATTACHMENT

"The Wood Shake and Shingle Roof Hazard," prepared by Denise Enea, Fire Marshal, Woodside Fire Protection District

The Wood Shake and Shingle Roof Hazard

Denise Enea, Fire Marshal, Woodside Fire Protection District

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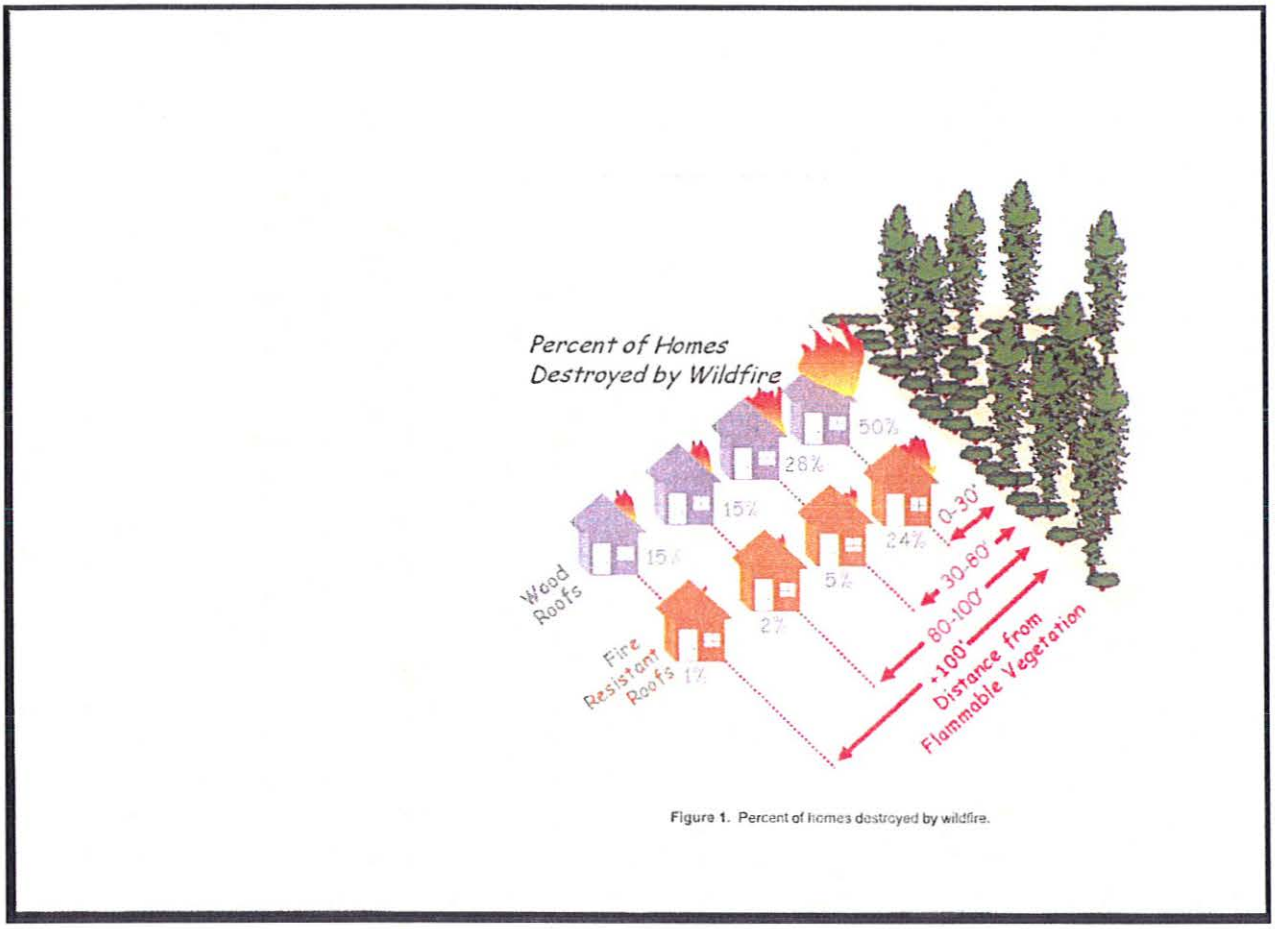

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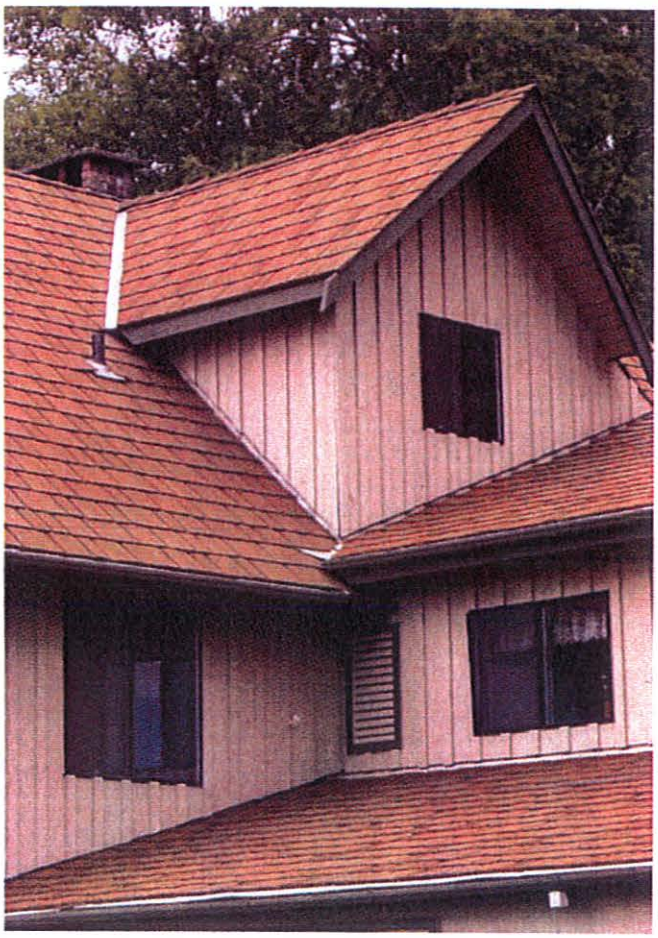
September 11, 2013

Older Shake Roofs and Affect of Fire Spread

New Wood Shake Roofs Still Being Installed

Deferred Maintenance/Severe Structure Vulnerability



Synthetic Class A Roof Material

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Towns of Woodside and Portola Valley
Joint Study Session
January 30, 2014

Agenda item #2

Discussion of Fire Prevention Initiatives with the Woodside Fire Protection District

There are no written materials for this item.