

October 20, 2022

My detailed comments on the Safety Element are only the Wildfire section (page 28 through 41). My comments are in red and black text from the original draft is included to provide context or elements deleted indicated by ~~strikethrough text~~. Blue notes are side comments on my comments.

As much as possible, I followed the structure of the original draft document for ease of reading including numbering new policies as P-NEW-xx. I did not focus on whether the additional requirements were policies or actions so some may be mislabeled.

Karen Vahtra, former wildfire committee member

WILDFIRE HAZARDS

Given its combination of complex terrain, Mediterranean climate, and ample natural ignition sources from productive natural plant communities, portions of California are very fire prone.

Nearly 85% of woodland fires in the United States are caused by humans. Human-caused fires result from but not limited to campfires left unattended, the burning of debris, equipment use and malfunctions, negligently discarded cigarettes, and intentional acts of arson.

**Source: 2000-2017 data based on Wildland Fire Management Information (WFMI) and U.S. Forest Service Research Data Archive*

Portola Valley Municipal Code

The Town of Portola Valley has adopted Chapter 7A (development in Wildland Urban Interface [WUI] areas) of the Building Code and it is applicable to all properties in town regardless of location. ~~The Town adopted the Wildfire Preparedness Committee's recommended Building Code amendments on December 8, 2021. These amendments require additional "home hardening" measures including use of noncombustible exterior materials and construction for new construction and applicable remodels.~~ As described in the following "State and Local Responsibility Areas" section, properties located within Cal Fire designated Very High Fire Hazard Severity Zones (VHFHSZ) are subject to more stringent requirements (Chapter 7A of the California Building Code) for buildings and property maintenance. Chapter 7A dictates the use of fire-resistant exterior materials and adherence to various design requirements. As of 2021, all properties in Portola Valley are required to adhere to Chapter 7A requirements regardless of location within a VHEHSZ.

The Town adopted the Wildfire Preparedness Committee's recommended Building Code amendments on December 8, 2021. These amendments require additional "home hardening" measures including use of noncombustible exterior materials and construction for new construction and applicable remodels throughout town. **These building code amendments exceed Chapter 7A requirements and are required in all areas in town.**

(Technical note: original order was confusing. Our code amendments are significantly stricter than Chapter 7a.)

POLICIES AND IMPLEMENTATION ACTIONS

New Development

P-37 Promote new development outside of the Very High Fire Hazard Severity Zone. If development is proposed in the Very High Fire Hazard Severity Zone, require fire safe design and compliance with fire safe regulations contained in Title 14 of the California Code of Regulations. ~~If~~ **Require annual** vegetation management hazard mitigations ~~are required~~ as a condition of building permit approval, ~~the~~ **. The** developer shall sign a maintenance agreement or provide a funding source for future maintenance of the required mitigations.

A-37-1 Require developers to assign all "fuel modification" requirements on common land to the association or other common owner groups responsible upon development completion and occupancy.

P-38 Prior to the approval of any subdivision of lands in a Very High Fire Hazard Severity Zone, the **WFPD and** Planning Commission should review the results of a study that includes at least the following topics:

- **A description of the hazards within and nearby the development. Determine the impact to the risk of the lives, properties and essential infrastructure to the parcel and the neighboring parcels. Measure the impact of the development on the essential infrastructure on the entire town.**
- Actions that should be taken to reduce the risk to an acceptable level.
- The costs and means of providing fire protection to the subdivision.
- The costs and means of providing ongoing vegetation management for the subdivision.
- An indication of who pays for the costs involved, and who receives the benefits.
- If a proposed building site requires access to adjoining parcels to maintain 100 feet **(or 200 feet in steep slope conditions)** of defensible space from the primary structure, an easement or other legal agreement for access should be required as permitted by law.

P-39 Ensure new public/critical facilities (schools, hospitals, fire stations, etc.), are not located in High and Very High Fire Hazard Severity Zones, to the greatest extent feasible. If located in these areas, ensure full compliance with fire safe regulations and adequate fire response and evacuation capabilities.

P-40 Establish wildfire prevention and fire-safe development and construction as an overriding objective of the town's land use, site development, subdivision, zoning, and building ordinances.

A-40-1 Continue to require new development to incorporate design measures that enhance fire protection in ~~High and Very High Fire Hazard Severity Zones~~ **throughout town**. This shall include but is not limited to incorporation of **non-combustible materials**, fire-resistant structural design, use of fire-resistant landscaping, and fuel modification around the perimeter of structures.

A-40-2 **Require removal of the Flammable Five (Eucalyptus, Pine, Acacia, Juniper and Cypress) when building permits are issued for new construction or major remodels.**

P-41 Require **hazard assessment and mitigation plans** ~~fire protection plans~~ for new development and major remodels in areas designated as High and Very High Fire Severity Hazard Zones by the California Department of Forestry and Fire Protection or equivalent hazard designation in Local Responsibility Areas.

P-42 Require vegetation management plans in all new developments, ~~and~~ major remodels, and for large property owners (Mid Peninsula Open Space District, Stanford, and others owning 50 acres or more) to prepare a hazard assessment and mitigation plan for approval by the WFPD.

P-NEW-1 Regulate the parcel size, siting, development, location and positioning of all new non-replacement construction based on the fire hazard severity of the proposed site. These regulations should address:

- Minimum road width standards for concurrent access and egress
- Minimum parcel size
- Minimum property line setbacks
- Minimum structure-to-structure separation
- Maximum non-vegetative fuel load per parcel
- Minimum defensible space standards

P-NEW-2 Officially grant WFPD authority and jurisdiction to interpret and enforce the wildfire prevention and fire-safe development construction standards of the town's land use, site development, subdivision, zoning and building ordinances.

P-NEW-3 Create a single point of contact within town staff to work jointly with WFPD, town staff, utility providers, developers, adjacent communities and San Mateo County, Firewise and neighborhood groups, emergency operations personnel, large landowners and town committees (Wildfire and Emergency Prep) to implement and manage wildfire prevention and emergency programs.

Vegetation Management

P-43 Provide adequate clearance around structures to prevent spread of fire by direct exposure and to assure adequate access in times of emergency and for the suppression of fire.

P-44. Vegetation management conducted by homeowners should remove the most hazardous plant materials while leaving adequate vegetation to reduce risks of erosion, habitat loss, and reduce the potential for invasive species introduction.

A-44-1 Conduct three-dimensional mapping of understory vegetation in a format which is compatible with predictive wildfire spread models in collaboration with WEPD.

A-44-2 Explore the feasibility of other vegetation management strategies, including:

- a. Elimination of use of fire-hazardous plants.
- b. Use of non-prolific landscaping species.
- c. Requiring project proponents in hillside areas to evaluate and upgrade as necessary fire flows and water supplies to hillside areas.

P-45 Ensure **public and privately owned** open space brush areas, susceptible to wildfire risk, are adequately maintained in accordance with WFPD and applicable state requirements.

A-45-1 Clean up fire hazards within town's open spaces and trail easements.

A-45-2 Remove highly flammable trees such as Eucalyptus in town owned spaces.

P-NEW-4 Ensure town owned rights of way (aka evacuation routes) are adequately maintained from fire hazards including the removal of brush and flammable trees such as Eucalyptus and Pines.

P-NEW-5 Work with our neighboring communities of Palo Alto, Woodside, and San Mateo County to modify our road infrastructure where needed to support evacuation.

P-46 Encourage the use of fire-resistant vegetation for landscaping, especially in high fire hazard areas.

A-46-1 Provide information on methods for reducing fire hazards through the Town's website and newsletter, including information on clearing of plant debris and combustible materials, use of fire-safe landscaping and defensible space, and modifying buildings to make them fire-resistant.

P-47 Require vegetation clearance and maintenance for all private roads and properties in the high and very high fire hazard severity zones.

P-NEW-6 Require periodic WFPD property inspections.

P-48 Maintain and adequately fund fuel breaks and other fire defense improvements on public property and require similar measures for private property in compliance with fire safe regulations where possible.

P-49 Extend defensible space requirements for steep slopes.

Infrastructure/Water Availability/Suppression Needs

P-NEW-7 A comprehensive town-wide assessment of the vulnerabilities of existing essential infrastructure (water, gas, electric, and communications (phone, internet and radio) to disruption or failure during a fire, earthquake, or a fire subsequent to an earthquake.

Very large earthquakes can easily disrupt both gas and electrical lines that lead to subsequent fires. With many simultaneous fires throughout a large geographic area, the state will likely not have sufficient resources to manage all the fires successfully. — Dr. Lucy Jones, “The Big Ones — How Natural Disasters Have Shaped Us (and What We Can Do About Them)

“When an earthquake like the one we modeled happens, every city of Southern California will have fires that need to be fought.... These responders will struggle, maybe for days, to bring equipment across broken roads. The firemen who are here will be sent to fight fires in places where the pipes feeding the fire hydrants have broken and gone dry....Sixteen hundred fires could break out, twelve hundred growing large enough to require more than one fire company. We don't have that many fire companies in all of Southern California”. — page 6

P-NEW-8 Harden critical infrastructure and equipment (including working with utility providers).

P-49 Ensure access to privately owned sources of water, such as swimming pools, in or adjacent to high fire risk areas, for on-site fire protection use, if necessary.

A-49-1 Maintain a list of residents with pool pumps available for fire suppression.

P-50 Ensure that landscaping, lighting, building siting and design, water pressure and peak load water storage capacity, and building construction materials meet current fire safe regulations.

P-51 Prioritize development in areas with sufficient water supply infrastructure and roadway capacity to ensure adequate evacuation and emergency equipment access.

P-52 Maintain and enhance water supply infrastructure to ensure adequate supplies for existing and future daily demands and firefighting suppression requirements.

P-53 Educate residents and property owners on proper water shut off procedures during a hazard incident or evacuation order.

Fire Suppression and Firefighter Safety

P-54 Collaborate with WFPD to promote public awareness of fire hazards and safety measures, including outreach to at-risk populations, and identification of low-risk areas for temporary shelter and refuge during wildfire events

P-55 Ensure adequate fire suppression resources in the local responsibility areas, and coordinate with WFPD and Cal Fire to meet current and future fire suppression needs.

A-55-1 Portola Valley will update the Fire Hazard Severity Zones for Very High, High, and Moderate when hazard and fuels assessments by WFPD and the State complete their updates. The State update recognizes that fire hazard severity is changing and is currently updating maps to reflect changing conditions.

P-56 Identify fire defense zones where firefighters can control wildfires without undue risks to their lives, and areas where firefighter safety prohibits ground attack firefighting.

P-57 Pursue funding for fire prevention and suppression (State grant funds, hazard mitigation funds, etc.).

P-NEW-9 Enable community-wide programs to restore healthy forests and reduce flammable vegetation and other fuels through ecological thinning and prescribed fire to mitigate the risk of wildfire ignition and spread on both large and small parcels both privately and publicly owned.

P-58 Become a Fire Risk Reduction Community through the State Board of Forestry and Fire Protection.

P-NEW-10 Create and encourage many Firewise communities in town to assist homeowners with insurance rates.

Codes and Regulations

P-59 Building upon ~~the 2008 Moritz map and the upcoming WFPD map~~ GAL FIRE's Fire Hazard Severity Zone maps, use local knowledge of wildfire hazard, landscape, housing, and infrastructure to ~~develop a wildfire overlay or other similar regulatory tool for corresponding policies~~ **define the fire severity zones with the conventions of Very High, High, and Moderate.**

A-59 Using these maps, develop policies for specific hazards and create an overlay zone or a similar regulatory tool for the following types of hazards:

- **Ridgelines**
- **Canyons**
- **Long Steep Slopes**
- **Critical infrastructure**

P-60 Require compliance with Chapter 7A requirements of the California Building Code and the Town's Home Hardening Code for all new development and substantial additions.

P-61 Require new developments and major remodels or renovations to comply with the California Building Code, Fire Code, and local ordinances for construction and adequacy of water flow and pressure, ingress/egress, and other measures for fire protection. Require endowments or HOA-type assessments to fund long-term maintenance of wildfire mitigations.

P-62 Require non-combustible roofs and exterior siding ~~in all fire hazard areas~~ **throughout town.**

P-63 Work with WFPD to enforce regulations related to fire resistant construction, sprinkler systems, and early warning fire detection system installation and/or sirens.

P-64 All developments shall comply with the WFPD Fire Code and incorporate recommendations from the Santa Cruz County - San Mateo County Community Wildfire Protection Plan, where applicable.

P-65 New developments in fire-prone hillside areas, shall comply with statewide Fire Safe Regulations (see CCR, Title 14, Sections 1270 et seq.).

A-65-1 Assess structures along slopes to determine if setbacks should be increased to protect structures in wildfire prone areas.

P-66 Expand home hardening throughout the Town to reduce fire hazard vulnerability

A-66-1 Update and expand the home hardening ordinance to existing buildings in high and very high fire hazard severity zone areas.

A-66-2 Develop a program to support residents with home hardening and defensible space actions. The program may include various resources, incentives, and educational components. Programs may include vegetation disposal assistance, home hardening guidance and resources, or support with development of local resident-focused educational organizations like Firewise Communities.

A-66-3 Encourage all homeowners to harden their homes particularly for ember intrusion.

P-67 Incorporate updated WFPD fire hazard and risk assessment findings into the Safety Element.

P-68 Monitor new State laws that increase minimum building standards and expand the requirements to more areas within the Town, including high and moderate areas.

P-69 Upon the completion of the Structure Separation Experiments being carried out by National Institute of Standards and Technology (NIST), the Insurance Institute for Business and Home Safety, and Cal Fire on structure-to-structure ignition, consider science-backed approaches to addressing narrow setbacks. The Town ~~may wait for State or WFPD guidance,~~ **will** implement findings into local building codes. ~~or provide voluntary guidance to residents.~~

P-70 Develop, monitor, and regularly update a program to educate and inform the public on local and state fire code, and fire safe regulations. Ensure that this program provides the latest information as provided by the Town, County, and the State. Use community-appropriate languages to ensure greater understanding by residents and visitors.

P-71 ~~Support increased enforcement mechanisms and processes by WFPD to incentivize fire risk reduction activities and abatement.~~ **Create an enforceable mechanism for defensible space such that WFPD can perform the work and put a lien on the property for timely repayment.**

Comments on Draft Safety Element for Oct-26-2022 joint committee review

To: Laura Russell and Safety Element consultants

Since the Wildfire Preparedness Committee (WPC) was unable to hold its own review meeting of the first Safety Element memo, in May-2022, I submitted my comments on all 3 SE memos via the Town website. I was very disappointed to see that none of my suggestions were incorporated. I don't know if they were not received by the consultants, if the documents got lost in the process, or if the Safety Element (SE) authors simply thought my suggestions were poor. But after reading the draft SE, I still have many of the same suggestions, so I am repeating them here again.

I would also like to suggest that in asking the joint committees to review the SE, it would be nice if there were a link to an archive of all the suggestions submitted. Committee members can't discuss ideas that they haven't seen or heard.

Respectfully submitted,

-mj lee

Volunteer, Wildfire Preparedness Committee

These comments are for the Public Review Draft Safety Element that I downloaded on Oct-10-2022. These comments are made in the spirit of helping to define hazards of concern along with suggesting goals/policies/actions to increase resilience or minimize exposure to those hazards.

Although, up front are the easy ones – the few typos and grammatical errors I spotted.

Typos and grammatical errors

- Pg 16 – typo in P-6 - A-6-1
 - "in the own" should be in the Town ??
- Pg 30 – typo
 - “use of noncombustible exterior materials and **construction** for new construction and applicable remodels.”
- Pg 30 – rephrase in the last sentence
 - I would strike " within a VHFHSZ " as the rule applies to all of PV
- Pg 30 – footnote #25 references outdated webpage.
 - a history of past WPC recommendations is located at the bottom of the page entitled [Wildfire Laws and Regulations in Portola Valley](#)

FLOODING

P-19 Minimize injury, loss of life, property damage, and economic and social disruption caused by flooding and inundation hazards.

A-19-1 Evaluate the Portola Valley Master Storm Drainage Report to identify areas of the Town's drainage system that may require update or modification.

The Portola Valley Master Storm Drainage Report and any consideration of Ground Settlement need to consider the impact of the large basements being built in almost every new construction in Town.

In my neighborhood (Meadowood Dr), we are seeing changes to ground water that may be caused by the installation of 2 basements over the last 5 years or so. In one case, a neighbor used to store ground water in a tank, but now nearby and uphill neighbors are pumping water out of the ground to keep their basements dry. This water is now being diverted into the street and the tank has lost its water source.

I am not in a flood zone, but in the case of my home, when a house was built 2 doors uphill, they drained their basement into the sloped open area above my house. As a result, in the next major rain storm, the amount of water coming downhill appeared to double in volume, and my crawlspace was flooded.

Plans for homes with basements should not be allowed to drain into open areas, and instead they should be required to drain directly to the Portola Valley street drainage system, or required to store the water for landscape and/or firefighting use.

In addition, compaction and settlement can be accelerated by among other causes, the "excessive withdrawal of ground water". The effect of basements on flooding, groundwater, compaction, and settlement should be addressed in the Safety Element.

MORITZ MAP

I am glad that the Moritz map is included in the Safety Element, but it would be more helpful if the completely colorized Moritz map were available in the SE and on the Town website. This should be requested from Mr. Moritz, as he showed such a map in [his presentation to the WPC](#) on Feb-1-2022.

Moritz said that if people [reduced the understory vegetation on their properties](#), it "would absolutely help" reduce our wildfire risk and rating. Residents need to be educated that they can personally impact the hazard rating around them.

Need to emphasize ember-resistance

Along with the Moritz map, the Safety Element needs to include a few paragraphs on ember-resistance. We know that 60-90% of wildfire ignitions are caused by embers. Therefore, all the current fire science from NIST, CAL FIRE, and other research bodies emphasize that homeowners should focus on ember and ignition-resistance through home hardening, defensible space, debris cleanup, and keeping Zone Zero clear of combustibles. The WPC is working on a 10-year plan to get the Townspeople to make their homes ignition-resistant.

While this topic is briefly mentioned in A-46-1, the topic deserves as much attention as is given the expository topics on climate change and evacuation.

New Development

P-37 Promote new development outside of the Very High Fire Hazard Severity Zone. If development is proposed in the Very High Fire Hazard Severity Zone, require fire safe design and compliance with fire safe regulations contained in Title 14 of the California Code of Regulations.

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Since the Town has applied Chapter 7A across the entire Town, the Title 14 Fire Safe Regulations should also apply to the entire Town.

P-38 Prior to the approval of any subdivision of lands in a Very High Fire Hazard Severity Zone, the Planning Commission should review the results of a study that includes at least the following topics: ...

If a proposed building site requires access to adjoining parcels to maintain 100 feet of defensible space from the primary structure, an easement or other legal agreement for access should be required as permitted by law.

The current PRC 4291 says to “Maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line, except as provided in subparagraph (1B)”. The subparagraph then says, “Fuel modification on adjacent property shall only be conducted following written consent by the adjacent landowner.”

I don’t know if “legal agreement” is equivalent to “written consent”. But it would be less onerous if the Town states the policy as either of those two options, rather than having to get an easement.

This policy disadvantages neighbors who are slower to react to SB-9 housing. If homeowner A builds an SB-9 ADU with a 4 foot setback, then homeowner B would need to build 100 feet from that ADU.

This policy should allow consideration of home hardening in the new building. PRC 4291 says “The amount of fuel modification necessary shall consider the flammability of the structure as affected by building material, building standards, location, and type of vegetation.” So, if a new home meets the requirements of the PV Home Hardening Ordinance implemented in Jan-2022 and has noncombustible siding, then there should be leeway granted so that the new home is not required to implement defensible space beyond the property line.

P-44 Vegetation management conducted by homeowners

A-44-1 Conduct three-dimensional mapping of understory vegetation in a format which is compatible with predictive wildfire spread models in collaboration with WFPD.

Understory vegetation is very difficult to map, and I am not sure that current digital technology can be used to do this. If it has to be mapped by hand, this proposal would result in a great deal of WFPD and Town resources and consultant funds to implement it. Furthermore, the vegetation map could quickly be outdated in 2 years.

The question to ask is, what do predictive wildfire spread models based on understory vegetation tell us, that adds to what we already think? We already know that wildfire spread based on slope, wind, and dryness will be dire. Does it make a useful difference to know that wildfire could spread in 1 hour versus 2 hours because a homeowner refuses to mitigate the 200 oaks on his parcel?

The understory data would only be useful if it could be used to convince that homeowner to mitigate his property. But the real issue is that such a homeowner is a risk-taker who will not mitigate because he has convinced himself that his oaks are not a risk.

P-47 Require vegetation clearance and maintenance for all private roads and properties in the high and very high fire hazard severity zones.

Since the Town has applied Chapter 7A across the entire Town, the vegetation clearance and maintenance should also apply to the entire Town.

Secondly, the current regulations are clearly not being enforced. In Jan-2022, I canvassed Brookside Dr, Wayside Rd, Wyndham Dr, and Woodside Highlands neighborhoods. These neighborhoods are picturesque and lush with dense housing and narrow streets. Yet vegetation comes all the way up to the road. Does it make sense to put this requirement in the SE if the Town has no enforcement capability and/or if it is a WFPD responsibility?

Water Availability/Suppression Needs

P-49 Ensure access to privately owned sources of water, such as swimming pools, in or adjacent to high fire risk areas, for on-site fire protection use, if necessary.

Technically speaking, PV does not facilitate swimming pool pumps as a water source for firefighting. The equipment is encouraged and supported by WFPD. Unfortunately, the How-to is only known by word of mouth, and there is scant information on PVForum. As a Safety Element policy, this section should work with WFPD to promote this and make it clearer how a resident gets this done.

Fire Suppression and Firefighter Safety

P-54 Collaborate with WFPD to promote public awareness of fire hazards and safety measures, including outreach to at-risk populations, and identification of low-risk areas for temporary shelter and refuge during wildfire events

The most important part of this policy is the identification of areas for temporary shelter and refuge. The Town needs to spend some time on this issue. The Ladera office and shopping center has mostly wood shake roofing and could be difficult to defend. In a worst-case wildfire scenario, those buildings could trap residents west of the Westridge intersection and prevent them from evacuating to Hwy 280. The Town Center and all public and private schools in our area are too surrounded by trees for earthquake, flooding, and wildfire disasters. The Sequoias residents used to be instructed to shelter in place, but now the rule is that they should evacuate.

There are very few possible areas for sheltering in PV: Roberts Market and Ford Field are the only places I can think of. Roberts Market could be defensible by WFPD. Ford Field could be defensible but has no restrooms or running water facilities. Satisfying BP-20 could be a reason to build restrooms at Ford Field.

P-58 Become a Fire Risk Reduction Community through the State Board of Forestry and Fire Protection.

I analyzed the requirements to qualify to be a Fire Risk Reduction Community. I informed Don Bullard that it appeared to me that WFPD could qualify today for that status as a Fire District. It

Comments on Draft Safety Element for Oct-26-2022 joint committee review

might be better to qualify as a Fire District instead of as distinct municipalities. He said he would look into it, but it might be useful for the Town to follow up.

Codes and Regulations

P-62 Require non-combustible roofs and exterior siding in all fire hazard areas.

Do not refer to roofs as non-combustible. The correct term is either fire-resistant or fire safe (check the regulations). A non-combustible roof would exclude asphalt shingles, because they have combustible components.

P-66 Expand home hardening throughout the Town to reduce fire hazard vulnerability

A-66-1 Update and expand the home hardening ordinance to existing buildings in high and very high fire hazard severity zone areas.

As with P-37 and P-38, the new home hardening ordinance applies to the entire Town, and for consistency, we should not tell residents to distinguish between the different HSZs.

Residents really need a wildfire mitigation permit checklist and a single permit fee from the Planning and Public Works departments.

**Big
Idea!**

A single document could cover what to do to mitigate for wildfire, and provide them as steps in a permit checklist that covers WFPD assessment, vents, decks, siding, enclosed eaves, replacing the first 10 feet of wood fencing, 0-5 foot Zone Zero, 30 and 100 foot zones, right of way, weed abatement, chipping schedule, etc.

Homeowners could pay one fee and easily see everything they need to do. Note that in the latest research, NIST and IBHS are saying that homeowners have to do **everything** in order to be fire safe.

This will also help residents, Council members, WFPD, and Town staff understand how much paperwork and fees are required to do wildfire mitigation. In response, the Council could minimize fees for a “comprehensive Wildfire mitigation permit” that covers all of the above over a limited time period (e.g., 1-2 years). To encourage energy conservation, the Town only charges \$50 for a solar panel permit, so shouldn’t the Town also encourage wildfire mitigation in this way?

Drought

Some housing policies that could help with responding to climate change

- Dictate use of solar-reflective roofs. In our house, we believe that our new solar-reflective roofing material has reduced heat buildup by 5-10 degrees.
- Educate residents on the disadvantages of large and south-facing windows.
- Encourage residents to implement greater energy efficiency
- Provide a town resource for air quality measurement, alerts and warnings
- Incentivize rain water collection systems and other water storage systems to fight fires
- Discourage installation of swimming pools

- Encourage residents to install photovoltaic solar panels with battery backup systems that can power the house for 24 hours
- Encourage residents to replace gas-based backup generators with solar battery backup

Policies and Implementation Actions

P-78 Continue to promote the Community Emergency Response Team (CERT) program to strengthen community cohesion and emergency preparedness through community engagement efforts.

A-78-1 Coordinate with Town sponsored advisory bodies/committees and neighboring communities to ensure effective coordination with the Safety Element.

The CERT program has suffered from insufficient volunteerism during the last 5 years. The last estimate I heard in 2020 was that maybe there were 60 active and certified volunteers across the entire Fire District. Obviously, in a disaster affecting 10,000 local residents, this is not enough coverage. The EPC, WPV-Ready, and WPV-CERT need to make new volunteer recruitment a higher and measured priority.

P-79 Prepare the Town for post-disaster recovery through proactive planning.

A-79-1 Develop a post disaster recovery framework.

It would be great if the Town worked on this. In every recent wildfire disaster, part of the delay in recovery has been because the towns had to rework their permit processes and regulations to fit the new post-disaster conditions. In some instances, towns allowed people to rebuild exactly what had burned down, which obviously is not the best solution for long-term resilience.

Emergency Management

Emergency Access/Evacuation

P-87 Conduct early hazard condition notifications to all residents and conduct early evacuation warnings for high-risk areas or areas where constrained conditions require lengthy evacuation.

Wayside Rd and Woodside Highlands should implement an alarm warning system. The Town of Paradise is installing an early warning system at a cost of \$2.9M that includes 21 siren towers all around the town and will also send messages to residents.

P-90 Require all new developments and redevelopments within the high and very high fire hazard severity zones, to provide a minimum of two points of access by means of publicly accessible roads that can be used for emergency vehicle response and evacuation purposes.

It is imperative that the Town come up with ways to address single egress/ingress streets in PV, which make up 40% of our streets serving 75% of all parcels.

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In one possibility, at the May-17-2022 EPC meeting, Craig Taylor noted that Woodside Highlands does have a 2nd egress, but it is a dirt road with a gate and lock. The consultants said they could not count fire-gated roads to be counted as egresses if the gates are locked. The Town and WFPD need to address why these gates remain locked, even if many residents know the padlock code. Perhaps they can be left unlocked in this changing environment.

The Housing Element made it clear that 589 parcels are constrained in terms of egress and natural disasters. Those parcels should be notified annually via postcard or mailers that they really need to be prepared because egress could be constrained.

P-91 Promote efficient and effective evacuation preparedness, where households rely on the following: Use of a single car for evacuation purposes, where feasible

It is tragic that this suggestion is so low in the priority list for evacuation. Under an evacuation order, voluntarily reducing the number of cars could have the greatest effect on wildfire safety. This simple suggestion, with almost no cost to promote, was recommended by the consultant in the traffic study, but it did not make the top 14 priorities for the EPC at its Oct-2022 meeting.

FAULTING

A-3-3 Develop a Utilities Resilience Program that examines all existing utility lines

I was disappointed there is no mention of undergrounding utilities in this Safety Element. PG&E now says that undergrounding reduces ignitions by 99%. As a member of the inactive Cable & Undergrounding Committee, we were unable to initiate the project to underground 6 poles along Alpine Road in 2015. But back then, PG&E would only justify undergrounding for reasons of beautification. Maybe times have changed.

October 21, 2022

Dear Mayor Hughes,

As promised, here are my suggestions about the draft Safety Element for the meeting on October 26th. It is clear that an enormous amount of work has gone into this document. I think as far as wildfire hazards are concerned, we are in good shape.

1. [Policy addition] Collaborate with WFPD to enforce current fire codes and defensible space requirements and support the WFPD in their ongoing enforcement efforts including the use of abatement, fees or other methods used to ensure defensible space compliance.
 - 1.1. Require WFPD defensible space inspection for home resale and some building permits.
2. [Existing text] P-66: Expand home hardening throughout the Town to reduce fire hazard vulnerability.
 - 2.1. [Add to P-66] Require the installation of ember resistant vents for home resale and some building permits.
 - 2.2. [Add to P-66] Support existing home owners with programs that offer information, solutions, and assistance with ember-resistant home hardening alternatives.
3. [Existing text] P-52: Maintain and enhance water supply infrastructure to ensure adequate supplies for existing and future daily demands and firefighting suppression requirements.
 - 3.1. [Add to P-52] Require all exterior wildfire suppression sprinkler systems to include an automatic cut off if public water supply pressure drops below a certain level.
4. General comment: I think this document would benefit from including a program implementation table when applicable. These tables would clarify what entity is responsible, potential funding source, priority, and time frame.

Sincerely yours,

Jennifer Hammer

Chair, PV Wildfire Preparedness Committee

From: [Kari Chinn](#)
To: [Thomas Geisler](#)
Cc: [Laura Russell](#)
Subject: FW: safety element
Date: Wednesday, October 26, 2022 12:05:45 PM

From: Thomas [REDACTED]
Sent: Tuesday, October 25, 2022 5:23 PM
To: Town Center <TownCenter@portolavalley.net>; Melissa Thurman <mthurman@portolavalley.net>
Cc: Kari Chinn <kchinn@portolavalley.net>; Laura Russell <lrussell@portolavalley.net>
Subject: safety element

“Joint Committee” that is scheduled to meet on October 26, PV Town Council, and PV Town staff:

Please do not approve or endorse the draft Safety Element. Town residents should have appropriate time and opportunities to review drafts and make recommendations. For example, the apparently current notion of using an inappropriate fire-hazard map seems untoward, based on the content of the map and on processes that may have led to or be leading to adopting the map.

- Tom

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To: Wildfire Preparedness, Emergency Preparedness, Sustainability, and Geologic Safety Committees
From: Bob Turcott
Date: October 26, 2022
Re: October 26, 2022 Joint Meeting on Safety Element revisions

Dear Committee Members,

Why is the 2008 Moritz map being replaced by the 2008 Cal Fire map as the official fire hazard map for Portola Valley?

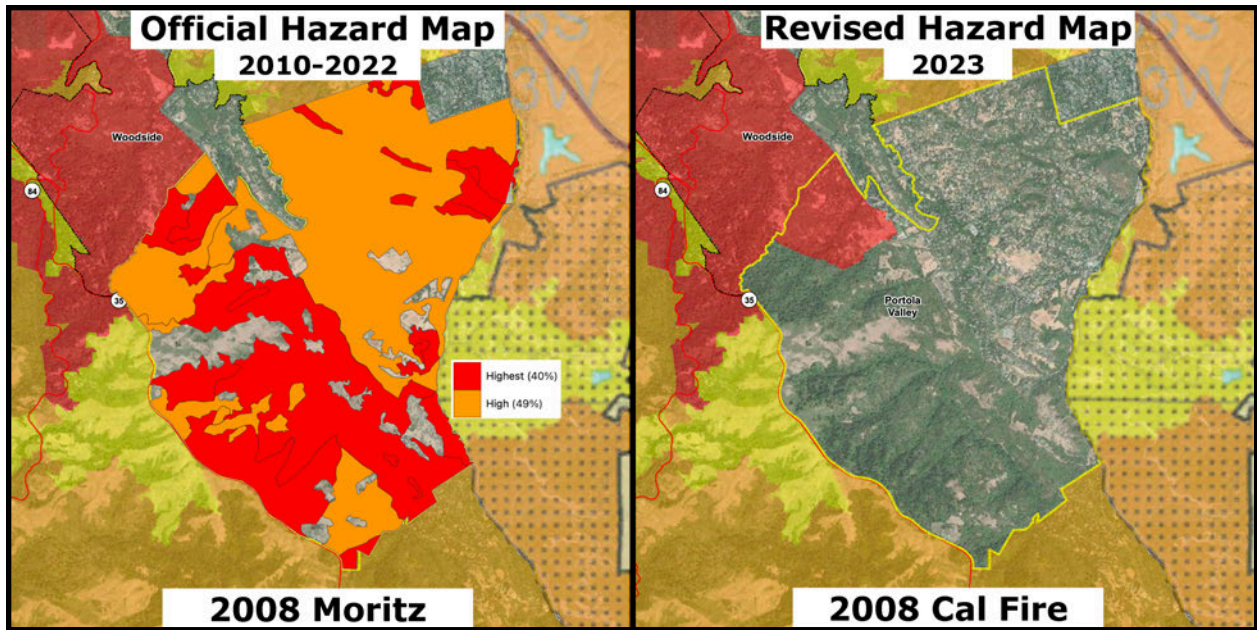
What is the objective, scientific basis for making this change?

How does this change benefit the residents of Portola Valley?



Source: Data derived from 2008 Fuel Hazard Map. Mortiz Arboricultural Consulting, Inc.

Portola Valley's official Fire Hazard Map as it appears in the 2015 revision of the Housing Element. Since 2010, fire safety policies have been defined for the hazard categories identified by Moritz.




The 2008 Moritz map is not merely a “vegetation” map. Rather, it precisely characterizes fire hazard throughout Portola Valley.

Fire ecologist Moritz’s methodology used a rich collection of parameters that influence fire behavior, including topographic parameters ignored by Cal Fire. He used high resolution and ground verification.

In contrast, Cal Fire necessarily relied on a remote analysis using coarse resolution that averaged away the very features that significantly contribute to our high fire hazard - our steep ravines. Cal Fire used a simplistic characterization of topography. Portola Valley represents less than 1/100th of 1% of the area Cal Fire evaluated.

Moritz compared his and Cal Fire’s methodologies at the February 1, 2022 Wildfire Preparedness Committee meeting. It’s worth watching. <https://youtu.be/DKpGpPiqUPw?t=155>

Cal Fire vs Moritz Fire Hazard Analysis



Raymond Moritz

Fire Behavior Factors	Cal Fire 100 million acres	Moritz 5,800 acres
Project Survey	Aerial Only	Aerial – Ground Truthing
Resolution	20ac Urban / 200 ac rural	5 ac/∞
Slope	< or > 20%	0 % to 50+%
Aspect	<u>Not Considered</u>	SE (mod), S (high) SW (very high) NW (mod), NE (low)
Ascending Drainages “Chimneys”	<u>Not Considered</u>	Included
Vegetation Fuel Types	5	11 (compared to NFFL Models)
Developmental Stage	Not Considered	Low, Mod, High, Extreme
Burnability	Based on perceived density	Based on NFFL Fuel type, both canopy & undergrowth densities and development stages

The 2008 Moritz map was, and remains, the most accurate fire hazard assessment we have.

Addressing the Housing Element Committee on January, 18, 2022, Fire Marshal Don Bullard indicated that the Moritz map is the most accurate depiction of our wildfire hazard and, if anything, understates rather than overstates our hazards. (3:24:59-3:26:58 [link](#)).

At the same meeting, Portola Valley's current fire safety consultant agreed. In reference to the Moritz map Zeke Lunder said: "It's a good map... But it's 13 years old. ... If I were to draw the red circles on the map, my map would have more red on it." (3:49:49-3:50:08 [link](#))

In contrast, the Woodside Fire Protection District describes the 2008 Cal Fire map as "inaccurate" and "not safe":

*"There is no interest in approving the limited CalFire map from 2008 as it is too old and also too limited based on our assessment. You may recall that the District rejected this map as too limited even back in 2008. **It is not a safe and accurate map to approve in 2022 either.**"*

- WFPD Board President Matt Miller, January 2022 ([link](#))

The draft Safety Element dangerously rolls back the areas in which fire safety policies apply.

Since fire safety policies are defined for the hazard categories of our fire hazard map, replacing the Moritz map with the "inaccurate" and "unsafe" Cal Fire map eliminates safety policies from as much as 83% of Portola Valley's area.

To be clear, the applicable area is not reduced for all fire safety policies. Rather, it is the most restrictive policies, reserved for our most dangerous areas, that are being rolled back.

Please see chart comparing applicable areas of fire safety policies at the end of this document.

The draft Safety Element dangerously rolls back the strength of fire safety policies.

For example, compare current Policy 1 with its proposed replacement, P-37:

Policy 1: ***Do not construct buildings for human occupancy***, critical facilities and high value structures in areas classified as having the highest fire risk unless it is demonstrated that mitigation measures will be taken to reduce the fire risk to an acceptable level.

Policy P-37: ***Promote new development outside of the Very High Fire Hazard Severity Zone***. If development is proposed in the Very High Fire Hazard Severity Zone, require fire safe design and compliance with fire safe regulations contained in Title 14 of the California Code of Regulations. If vegetation management hazard mitigations are required as a condition of building permit approval, the developer shall sign a maintenance agreement or provide a funding source for future maintenance of the required mitigations.

The draft Safety Element misinforms residents, the State, and FEMA about our fire hazards.

In particular, the CA Dept of Housing and Community Development (HCD) will judge Portola Valley's compliance with State housing mandates based on the erroneous characterization of our hazards that we are providing.

The proposed changes inform HCD that 94% of Portola Valley's area has **NO** fire hazard.

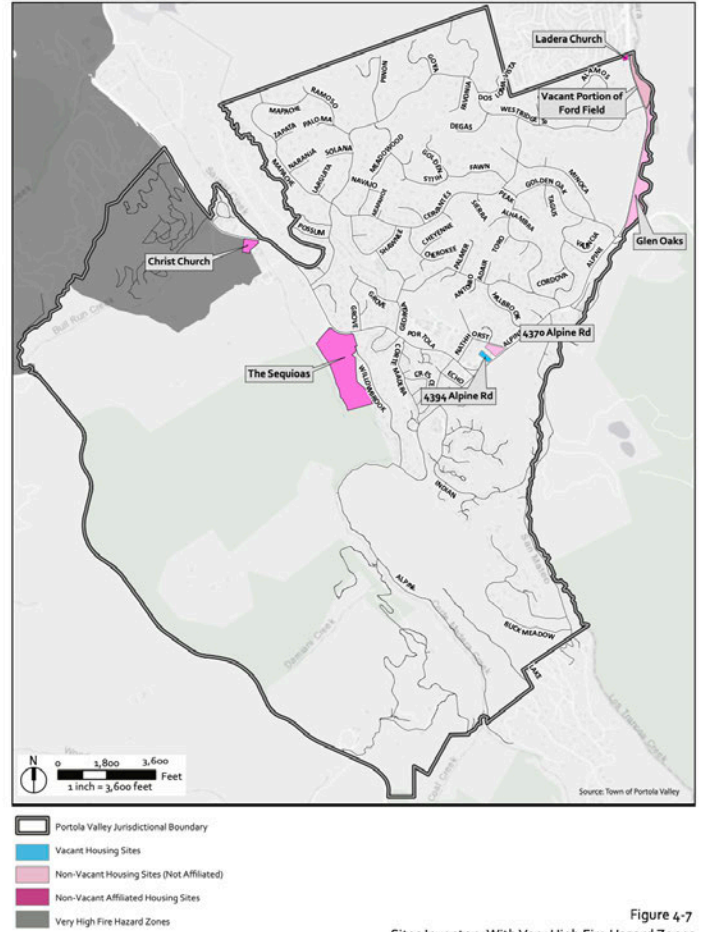


Figure 4-7
Sites Inventory With Very High Fire Hazard Zones
PORTOLA VALLEY HOUSING ELEMENT UPDATE

Why was the first public disclosure of the Town's intention to replace the Moritz Map with Cal Fire's made *after* the change was submitted to the State in the draft Housing Element?

Why is this meeting convened so late in the process that effective correction will be extremely difficult?

Thank you,
Bob Turcott

Safety Element Comparison - Fire Safety Policies

2010 Policy Number (pg 22)	Policy	Applies to	PV Area	2023 Policy Number (pg 37)	Policy	Applies to	PV Area
1	Do not construct buildings for human occupancy , critical facilities and high value structures in areas classified as having the highest fire risk unless it is demonstrated that mitigation measures will be taken to reduce the fire risk to an acceptable level.	Moritz Highest Hazard area	40%	P-37	Promote new development outside of the Very High Fire Hazard Severity Zone. If development is proposed in the Very High Fire Hazard Severity Zone, require fire safe design and compliance with fire safe regulations contained in Title 14 of the California Code of Regulations. If vegetation management hazard mitigations are required as a condition of building permit approval, the developer shall sign a maintenance agreement or provide a funding source for future maintenance of the required mitigations.	Cal Fire VHFHSZ	6%
				P-39	Ensure new public/critical facilities (schools, hospitals, fire stations, etc.), are not located in High and Very High Fire Hazard Severity Zones, to the greatest extent feasible. If located in these areas, ensure full compliance with fire safe regulations and adequate fire response and evacuation capabilities.	Cal Fire High and VHFHSZ	6%
2	Prior to the approval of any subdivision of lands in an area of high fire risk, the planning commission should review the results of a study that includes at least the following topics: a) A description of the risk and the factors contributing to the risk. b) Actions that should be taken to reduce the risk to an acceptable level. c) The costs and means of providing fire protection to the subdivision. d) An indication of who pays for the costs involved, and who receives the benefits.	Moritz High and Highest Hazard area	89%	P-38	Prior to the approval of any subdivision of lands in a Very High Fire Hazard Severity Zone, the Planning Commission should review the results of a study that includes at least the following topics: o A description of the risk and the factors contributing to the risk. o Actions that should be taken to reduce the risk to an acceptable level. o The costs and means of providing fire protection to the subdivision. o The costs and means of providing ongoing vegetation management for the subdivision. o An indication of who pays for the costs involved, and who receives the benefits. o If a proposed building site requires access to adjoining parcels to maintain 100 feet of defensible space from the primary structure, an easement or other legal agreement for access should be required as permitted by law.	Cal Fire VHFHSZ	6%
3	Homeowners should provide adequate clearance around structures to prevent spread of fire by direct exposure and to assure adequate access in times of emergency and for the suppression of fire.	All	100%	P-43	Provide adequate clearance around structures to prevent spread of fire by direct exposure and to assure adequate access in times of emergency and for the suppression of fire.	All	100%
4	Adopt a town program to reduce fire hazards along the town's public roads.	All	100%				
5	Establish a public information program regarding fire hazards and how property owners can reduce such hazards. Utilize the Moritz report in this effort.	All	100%				

2010 Policy Number (pg 22)	Policy	Applies to	PV Area	2023 Policy Number (pg 37)	Policy	Applies to	PV Area
6	In locations identified as presenting high fire hazard, require special protective measures to control spread of fire and provide safety to occupants, including but not limited to types of construction and use of appropriate materials.	Moritz High and Highest Hazard area	89%	P-40	Continue to require new development to incorporate design measures that enhance fire protection in High and Very High Fire Hazard Severity Zones. This shall include but is not limited to incorporation of fire-resistant structural design, use of fire-resistant landscaping, and fuel modification around the perimeter of structures.	Cal Fire High and VHFHSZ	6%
7	When reasonable and needed, make privately owned sources of water, such as swimming pools, in or adjacent to high fire risk areas, accessible to fire trucks for use for on-site fire protection.	Moritz High and Highest Hazard areas	89%	P-49	Ensure access to privately owned sources of water, such as swimming pools, in or adjacent to high fire risk areas, for on-site fire protection use, if necessary.	Cal Fire High and VHFHSZ	6%
8	Establish street naming and numbering systems to avoid potential confusion for emergency response vehicles.	All	100%				
9	Design and maintain all private roads to permit unrestricted access for all Woodside Fire Protection District equipment.	All	100%				
10	Apply Chapter 7A of the California Building Code to the entire town to increase the resistance of buildings to fire ignition, and when reviewing developments under Chapter 7A, attempt to choose those materials and colors that are consistent with the visual aspects of the town.	All	100%	P-40	Continue to require new development to incorporate design measures that enhance fire protection in High and Very High Fire Hazard Severity Zones. This shall include but is not limited to incorporation of fire-resistant structural design, use of fire-resistant landscaping, and fuel modification around the perimeter of structures.	Cal Fire High and VHFHSZ	6%
				P-60	Require compliance with Chapter 7A requirements of the California Building Code and the Town's Home Hardening Code for all new development and substantial additions.	All	100%
				P-62	Require non-combustible roofs and exterior siding in all fire hazard areas.	All	100%
				P-66	Expand home hardening throughout the Town to reduce fire hazard vulnerability	All	100%
11	When undertaking actions to reduce fire risk by removing or thinning vegetation, homeowners should try to remove the most hazardous material while leaving some native vegetaton to reduce risks of erosion, habitat loss and introduction of potentially dangerous invasive weeds.	All	100%	P-44	Vegetation management conducted by homeowners should remove the most hazardous plant materials while leaving adequate vegetation to reduce risks of erosion, habitat loss, and reduce the potential for invasive species introduction.	All	100%
				P-41	Require fire protection plans for new development and major remodels in areas designated as High and Very High Fire Severity Hazard Zones by the California Department of Forestry and Fire Protection or equivalent hazard designation in Local Responsibility Areas.	Cal Fire High and VHFHSZ	6%
				P-42	Require vegetation management plans in all new developments and major remodels.	All	100%

2010 Policy Number (pg 22)	Policy	Applies to	PV Area	2023 Policy Number (pg 37)	Policy	Applies to	PV Area
				P-45	Ensure open space brush areas, susceptible to wildfire risk, are adequately maintained in accordance with WFPD and applicable state requirements.	All	100%
				P-46	Encourage the use of fire-resistant vegetation for landscaping, especially in high fire hazard areas.	All	100%
				P-47	Require vegetation clearance and maintenance for all private roads and properties in the high and very high fire hazard severity zones.	Cal Fire High and VHFHSZ	6%
				P-48	Maintain and adequately fund fuel breaks and other fire defense improvements on public property and require similar measures for private property in compliance with fire safe regulations where possible.	Public - All Private - Cal Fire VHFHSZ	100% 6%
				P-50	Ensure that landscaping, lighting, building siting and design, water pressure and peak load water storage capacity, and building construction materials meet current fire safe regulations.[1]	Cal Fire VHFHSZ	6%
				P-51	Prioritize development in areas with sufficient water supply infrastructure and roadway capacity to ensure adequate evacuation and emergency equipment access.	All	100%
				P-52	Maintain and enhance water supply infrastructure to ensure adequate supplies for existing and future daily demands and firefighting suppression requirements.	All	100%
				P-53	Educate residents and property owners on proper water shut off procedures during a hazard incident or evacuation order.	All	100%
				P-54	Collaborate with WFPD to promote public awareness of fire hazards and safety measures, including outreach to at-risk populations, and identification of low-risk areas for temporary shelter and refuge during wildfire events	All	100%
				P-55	Ensure adequate fire suppression resources in the local responsibility areas, and coordinate with WFPD and Cal Fire to meet current and future fire suppression needs.	All	100%
				P-56	Identify fire defense zones where firefighters can control wildfires without undue risks to their lives, and areas where firefighter safety prohibits ground attack firefighting.	All	100%
				P-57	Pursue funding for fire prevention and suppression (State grant funds, hazard mitigation funds, etc.).	All	100%
				P-58	Become a Fire Risk Reduction Community through the State Board of Forestry and Fire Protection.	All	100%
				P-59	Building upon CAL FIRE's Fire Hazard Severity Zone maps, use local knowledge of wildfire hazard, landscape, housing, and infrastructure to develop a wildfire overlay or other similar regulatory tool for corresponding policies.	All	100%

2010 Policy Number (pg 22)	Policy	Applies to	PV Area	2023 Policy Number (pg 37)	Policy	Applies to	PV Area
				P-61	Require new developments and major remodels or renovations to comply with the California Building Code, Fire Code, and local ordinances for construction and adequacy of water flow and pressure, ingress/egress, and other measures for fire protection. Require endowments or HOA-type assessments to fund long-term maintenance of wildfire mitigations.	All	100%
				P-63	Work with WFPD to enforce regulations related to fire resistant construction, sprinkler systems, and early warning fire detection system installation and/or sirens.	All	100%
				P-64	All developments shall comply with the WFPD Fire Code and incorporate recommendations from the Santa Cruz County - San Mateo County Community Wildfire Protection Plan, where applicable.	All	100%
				P-65	New developments in fire-prone hillside areas, shall comply with statewide Fire Safe Regulations (see CCR, Title 14, Sections 1270 et seq.).	All	100%
				P-67	Incorporate updated WFPD fire hazard and risk assessment findings into the Safety Element.	All	100%
				P-68	Monitor new State laws that increase minimum building standards and expand the requirements to more areas within the Town, including high and moderate areas.	All	100%
				P-69	Upon the completion of the Structure Separation Experiments being carried out by National Institute of Standards and Technology (NIST), the Insurance Institute for Business and Home Safety, and Cal Fire on structure-to-structure ignition, consider science-backed approaches to addressing narrow setbacks. The Town may wait for State or WFPD guidance, implement findings into local building codes or provide voluntary guidance to residents.	All	100%
				P-70	Develop, monitor, and regularly update a program to educate and inform the public on local and state fire code, and fire safe regulations. Ensure that this program provides the latest information as provided by the Town, County, and the State. Use community-appropriate languages to ensure greater understanding by residents and visitors.	All	100%
				P-71	Support increased enforcement mechanisms and processes by WFPD to incentivize fire risk reduction activities and abatement.	All	100%

[1] Per P-37, Cal Fire's Fire Safe Regulations apply only to the 6% of Portola Valley's area that Cal Fire identified as VHFHSZ. Does P-50 apply throughout PV, or is it restricted to the area in which Fire Safe Regulations apply?