RESOURCE GUIDE #7

Wildfire Programs & Policies for Housing Element Updates

The Bay Area and much of California are working to simultaneously address challenges of housing affordability and production as well as climate change adaptation. In many circumstances the solutions are complementary, but in others an approach to address one issue area can present challenges for the other. The Wildland Urban Interface (WUI) is one area where that tension can arise. Further action to protect and preserve homes from wildfires requires planning and investment and the addition of policies and programs in the Housing Element is a key step forward.

The Resource Guide includes six sections:

1. ***Common wildfire and housing challenges in the San Francisco Bay Area***
2. ***Approaching wildfire policies and programs in the Housing Element update***
3. ***Summary table of sample Housing Element policies and programs***
4. ***Additional background and resources for sample policies and programs***
5. ***ADU case studies for tackling housing challenges in the WUI***
6. ***Resources from the Wildfire/Housing Work Group***

Jurisdictions are encouraged to edit sample policies for use in their community and reference linked resources to strengthen policy and program development.

SECTION 1: Common wildfire and housing challenges in the San Francisco Bay Area

How can structure ignition be reduced during wildfire events?

The science of wildfire mitigation and adaptation is rapidly evolving. There is sufficient scientific evidence and agreement on actions homeowners should take to mitigate the risks to individual homes; however, implementation of strategies is continuing to evolve in neighborhoods with limited structure separation distances and/or evacuation constraints. Resource Guide #6 highlights upcoming State efforts that will help provide approaches to meet these challenges.

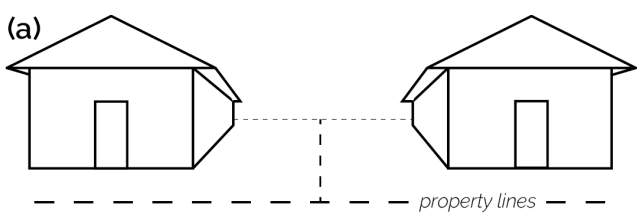
How can structure ignition be reduced during wildfire events?

One of the central themes of the ABAG Wildfire/Housing workshop series was identifying guidance to reduce wildfire damage to housing. In addition to landscape-scale vegetation management, defensible space and home hardening were identified as essential to reducing structure ignition for all homes in the WUI. Individual homeowners are key to addressing this challenge, but in many communities, there are gaps in awareness and knowledge of what to do. As science and regulations catch up to current conditions, jurisdictions may consider new or updated policies and programs to incentivize homeowner action. Public education and buy-in will be critical to meeting this challenge.

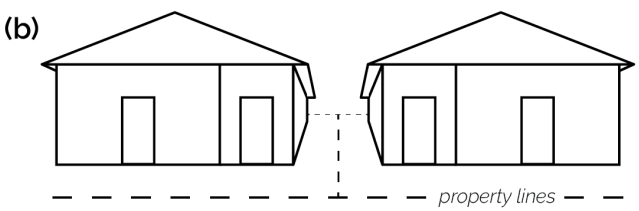
How can homes with narrow setbacks be made more resilient for a wildfire-adapted environment?

The Bay Area has many neighborhoods with moderate housing density, high lot coverage, and narrow setbacks situated in or near the WUI. Large property setbacks are one wildfire adaptation approach to reduce the likelihood of radiant heat and direct flame ignition between homes, but small setbacks increase flexibility to accommodate needed housing. To meet the challenge of a housing crisis while also mitigating risk to wildfire, jurisdictions may need to implement innovative policies and programs that consider specific approaches to reduce structure-to-structure wildfire spread for pre-existing properties or for new/expanded development. In communities where setbacks are narrow, jurisdictions may need to take a leading role in this work by expanding development regulations in the WUI.

Figure 1: Approaches to reduce structure-to-structure ignitions in parcels with (a) large setbacks, (b) narrow setbacks.



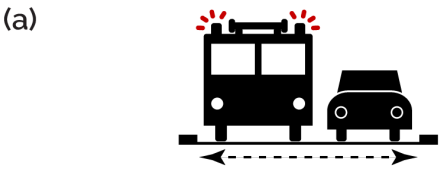
In situations with large separation between buildings only baseline home hardening and defensible space best practices are needed.



In situations with narrow separation between buildings baseline best practices can be supplemented with special considerations to address structure-to-structure fire spread.

Many communities raise evacuation concerns about how new housing could increase on-street parking demand and the number of people evacuating from their homes. Evacuation issues often nest under two sub challenges (a) insufficient access and right-of-way for fire apparatus to pass other parked or evacuating vehicles, and (b) insufficient evacuation capacity leading to long clearance time, as shown in Figure 2. Jurisdictions may choose to study and implement responsive strategies to ensure sufficient right-of-way and evacuation network capacity support existing and future residents and first responders.

Figure 2: Evacuation challenges in the WUI.

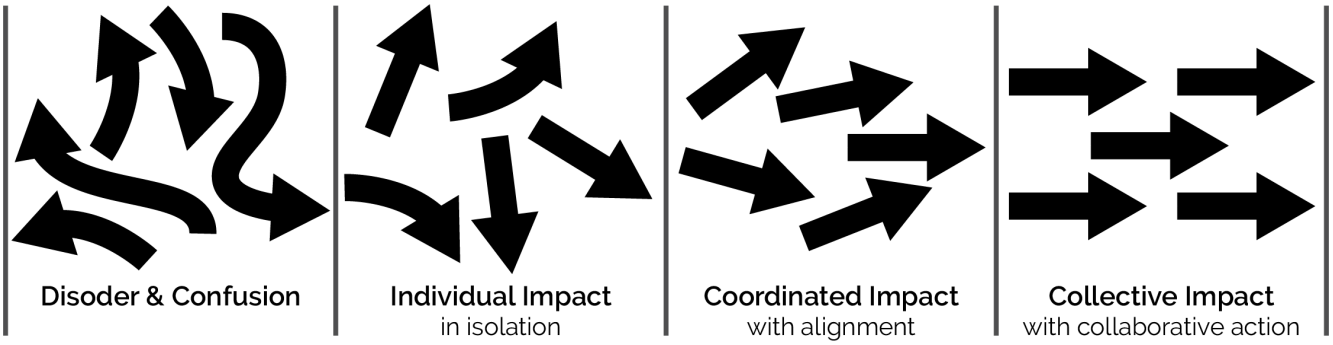


Areas with insufficient access and right-of-way for fire and emergency apparatus. Road width is a key variable with special considerations for dead end roads and long driveways.

Areas with insufficient network capacity to enable quick clearance times. Network capacity and the number of households evacuating influence clearance time.

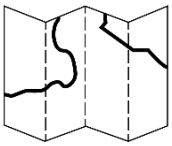
Many housing-related wildfire adaptation actions are the responsibility of individuals, but wildfire risk is shared on a neighborhood/community level. A single resident's actions to adapt their home are greatly enhanced by the actions of their neighbors and community. To adapt to wildfire, collective action is needed on the community level between residents, community-based organizations, and the jurisdiction itself.

Figure 3: Wildfire adaptation cannot be achieved solely by an individual. Wildfire adaptation requires collective impact at the community scale.

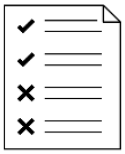


SECTION 2: Approaching wildfire policies and programs in the Housing Element Update

For the purposes of this Resource Guide, policy and program concepts are broken apart into four elements. While described as distinct elements, successful programs and policies will incorporate and weave the "Where, What, Who/How, and Tracking" elements throughout the policymaking or program implementation process.

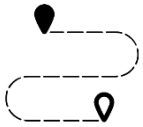


Where – Identify where to apply policy to address current and future wildfire risk. As climate change progresses, wildfire hazard can increase for existing WUI zones and expand to new areas. Practitioners must proactively consider where and how often neighborhoods will be impacted by future wildfires. Creating maps, overlays, and zones of wildfire hazard is a key first step. Communities may choose to also include other variables in developing wildfire overlays, for example identifying areas with wildfire hazard and evacuation constraints.



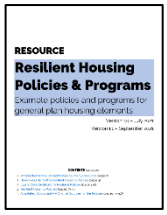
What – Identify what regulation or standard is the right fit to reduce wildfire risk to residents and housing. Using a zone identified by the "Where" step above, determine appropriate building and development standards for properties. Policies and programs can be developed for new development, but because most homes were built before the adoption of the WUI standards in 2008, guidance and standards for existing homes is imperative.

Who/How – Identify how to communicate the policy or program. Wildfire-adapted housing requires ongoing and collective action from public agencies, private landowners, and homeowners; neighborhoods must take action to protect their own homes and each other's. Empowering residents to act starts with a clear understanding of the risks and the best practices and programs to support them. Planning, engagement, and partnership are all crucial methods for active implementation.



Tracking – Stay on the pulse of policy and program progress. Once wildfire adaptation policies and programs have been implemented, consider tracking them at the property, neighborhood, or community scale. Leverage existing data sources and create data collection associated with new programs and policies.

Supplemental resources for wildfire and housing policies and programs



In July of 2021, ABAG released Resilient Housing Policies & Programs. This resource is a collection of resilient policies and programs that could be applied to Housing Element Updates. The resource was not hazard/impact specific; it takes generic concepts from the guide and applies them for use in communities with wildfire risks. The guide can be revisited to further develop approaches for wildfire or other climate or natural hazard impacts like flooding or seismic risks.

The *Co-Existing with Wildfire* section of the Greenbelt Alliance Resilience Playbook lays out a holistic approach to advancing solutions to address overlapping environmental, economic, and social challenges associated with preparing communities to live with wildfire through nature-based solutions. This user-friendly online resource details what's at risk, critical actions to take, and includes a policy matrix with supporting strategies, actions, and policies showcasing best practices from General Plans around the country.

The Town of Paradise, which was severely impacted by the Camp Fire in 2018, included wildfire resilience goals, policies, and programs in their draft 2022-2030 Housing Element. One Housing Element goal is to "Improve, rebuild, and preserve safe, decent housing and neighborhoods for all Paradise residents, including preparation for wildfire resiliency." The corresponding policies and programs can be reviewed starting on page 73.

SECTION 3: Summary table of sample Housing Element policies and programs

How-to-guide for navigating and identifying sample programs and policies

Section 3 provides an overview of the sample programs and policies organized into the where, what, who/how, and tracking categories described above. It is recommended to start by identifying a few policy and programs that are of high interest, and then proceeding to **Section 4, where additional detail, context, and examples for the sample policies and programs are provided.** Figure 4 below describes how the information in Section 4 is organized.

Summary Table of Sample Policies and Programs – Identify items to explore in detail in Section 4

Policy/Program Title	Applicability	Language
Where?		
Adopt CAL FIRE's Fire Hazard Severity Zone Update	*Applicable to all jurisdictions, particularly towns and cities*	The [jurisdiction] will update the Fire Hazard Severity Zones for Very High, High, and Moderate when the State completes their mapping update. The State update recognizes that fire hazard severity is changing and is currently updating maps to reflect changing conditions.
Use local knowledge to develop a wildfire zone overlay	*Applicable to all jurisdictions*	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 for corresponding policies.
What?		
Implement expanded State laws that increase wildfire standards for housing	*Applicable to all cities and towns with very high and high FHSZs*	The [jurisdiction] shall comply with new State laws that have increased minimum building standards and expanded the requirements to more areas within the [jurisdiction].
Develop/Update a home hardening and defensible space program to preserve existing housing	*Applicable to all jurisdictions*	The [jurisdiction] will develop/update a program to support residents with home hardening and defensible space. The program may include various resources, incentives, and educational components. Programs may include vegetation disposal assistance, home hardening resources, or support with development of local Firewise Communities.
Consider future action for narrow setbacks informed by forthcoming structure-to-structure ignition prevention research	*Applicable to all jurisdictions with narrow setbacks*	Upon the completion of research being carried out by National Institute of Standards and Technology (NIST), the Insurance Institute for Business and Home Safety (IBHS), and CAL FIRE on structure-to-structure ignition, consider science-backed approaches to addressing minimal setbacks. The [jurisdiction] may wait for State guidance, implement findings into local building standards, or provide voluntary guidance to residents.

Develop a "Wildfire Reach Code" to inform action in areas with reduced structure separation distances	*Applicable to jurisdictions with narrow setbacks*	The local building department may consider wildfire reach code actions to address areas with reduced structure separation distances. The reach code could be provided as voluntary guidance for the community or be required for new construction and/or substantial building remodel triggers.
Perform an evacuation assessment	*Applicable to jurisdictions with significant evacuation concerns*	The [jurisdiction] will conduct an evacuation assessment that meets State law requirements to identify evacuation routes and locations. The analysis will identify points of evacuation congestion and study solutions to improve evacuation clearance times. Following the analysis, the [jurisdiction] will develop responsive actions.
Install street parking boxes to improve ingress and egress in WUI areas	*Applicable to jurisdictions that have already identified right-of-way as a key evacuation constraint*	The [jurisdiction] will strategically identify where it is safe to park on hilly, winding roads with minimal street widths and indicate these areas using parking boxes. Parking box locations will be determined based on improving routine and emergency access, ensuring ease of passage for emergency vehicles, and improving visibility and turning safety for larger vehicles.
Develop/Update a pre-evacuation strategy and program for WUI residents	*Applicable to jurisdictions that have already identified congestion as a key evacuation constraint*	Develop/Update a strategy and program for residents to understand wildfire hazard warnings, develop a household evacuation plan and be ready to evacuate. Encourage residents to consider pre-evacuation during extreme red-flag events that could result in fast moving wildfires if they occur.

Who/How?

Engage and educate residents on policy changes and upcoming program opportunities	*Applicable to all jurisdictions*	Develop a public engagement and education strategy to educate residents, contractors, and developers about recent policy changes. Work with community partners, local officials, and non-profit organizations and leverage social media, traditional forms of outreach, and education programs to distribute best practices for meeting required or voluntary fire adaptation measures to reduce risks to structures, landscaping, and property.
Leverage existing community-based partnerships to disseminate wildfire adaptation information	*Applicable to jurisdictions with existing relationships with community-based organizations (CBOs)*	Expand existing partnerships with local non-profit organizations, neighborhood groups, and other community organizations to create a broad network of wildfire-informed residents.
Promote neighborhood-based wildfire-centered networks	*Applicable to jurisdictions that do not have existing community networks to leverage in the WUI*	Foster neighborhood-wide solutions and establish neighborhood-wide communication networks for citizens to work together. To build relationships between neighbors, offer incentives like chipper programs or access to local wildfire experts to speak at neighborhoods events.
Update residents with best available wildfire adaptation guidance	*Applicable to all jurisdictions*	Update [jurisdiction] website with current State guidance on home and building owner wildfire adaptation actions. Provide the best available guidance related to defensible space, home hardening, and evacuation.
Provide proactive communication to current and new residents on safe evacuation	*Applicable to jurisdictions with known evacuation challenges*	Working with the Fire Department and/or Office of Emergency Services, the [jurisdiction] will publish best practices for wildfire evacuation, hold annual drills, offer proactive evacuation warnings, and increase redundancy of evacuation communication platforms.
With neighboring cities, explore the creation of a collaborative multi-agency organization to advance wildfire prevention efforts	*Applicable to all jurisdictions*	[Jurisdiction] will participate in public meetings and workshops with neighboring cities to explore whether a multi-agency organization or joint powers authority similar to the Marin Wildfire Prevention Authority may advance wildfire prevention activities faster.

Tracking

Track wildfire building code adoption of new and existing properties in a database	*Applicable to all jurisdictions*	Track which parcels through new construction, significant remodels, or voluntary action meet higher WUI building code requirements. Develop a database and method to track information already collected as part of permitting, inspections, and other already occurring processes.

SECTION 4: Additional background and resources for sample policies and programs

Where? – Maps, Overlays, and Zones

Adopt CAL FIRE's Fire Hazard Severity Zone Update

Applicable to all jurisdictions, particularly towns and cities

[Jurisdiction Name] will update the Fire Hazard Severity Zones for Very High, High, and Moderate when the State completes their mapping update. The State update recognizes that fire hazard severity is changing and is currently updating maps to reflect changing conditions.

Background: In addition to updating the criteria for how the maps are developed, CALFIRE will also publish all Fire Hazard Severity Zones (FHSZs), including very high, high, and moderate FHSZs, for the Local Responsibility Area (LRA). While not yet available, a jurisdiction can call out the use of CAL FIRE's forthcoming FHSZ Maps and identify potential future policies and programs to respond. With CAL FIRE's changes to the FHSZs within a local agency's jurisdiction, new building code requirements become applicable for the high and potentially moderate zones (see Resource Guide #6, page 3 for more details on how AB 642 and SB 63 have changed CAL FIRE's mapping process and corresponding building requirements). Including this policy articulates how adjustments to State maps and recent State bills linking maps to building standards when implemented by local government will make future housing safer.

Use local knowledge to develop a wildfire zone overlay

Applicable to all jurisdictions

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 for corresponding policies.

Background: In addition to using CAL FIRE zones, cities and counties can take local actions to refine overlay zones for subsequent policies. Some local fire departments and districts have already chosen to identify their own WUI zones. Additionally, as it relates to housing production specifically, some communities are using transportation infrastructure to identify locations with fire hazard and constrained evacuation egress.

> *Example – Modest Expansion:* The City of Berkeley uses a larger overlay zone that encompasses areas designated as Combined Hillside District in the city's Official Zoning Map as well as areas designated as very high FHSZ. More information about the City of Berkeley's overlay zones can be found on their Hillside Overlay webpage.
>
> *Example – All-City Expansion:* In 2009, the Town of Portola Valley expanded their wildfire zone across the entire town, rather than just a small portion identified as very high FHSZ. This is a large step to take towards improving wildfire preparedness across an entire community and should only be considered in communities with significant wildfire hazard city- or county-wide. There are important equity considerations that should be factored into making such a decision to ensure that new codes do not inhibit housing needs at any income level. More information about Portola Valley's building code expansions can be found in the ordinance amendment document.
>
> *Example – Combined Hazard & Constraint Overlay:* The City of Oakland created the S-9 Fire Safety Protection Combining Zone Map Overlay, to identify areas designated as very high FHSZs by CAL FIRE, and with narrow road widths, or areas with cul-de-sacs. These areas correspond to specific sections in Oakland's Municipal Fire Code. More information about the S-9 Overlay can be found on page 5 of this April 15, 2021 committee memo. See pages 103-120 of the memo to review proposed updates for the S-9 Overlay Zones.

What? – Applying Requirements, Standards, and Regulations

Implement expanded State laws that increase wildfire standards for housing

Applicable to cities and towns with very high and high FHSZs

[Jurisdiction Name] shall comply with new State laws that have increased minimum building standards and expanded the requirements to more areas within the [jurisdiction].

Background: SB 63 (2021), AB 642 (2021), and SB 901 (2018), described in greater detail on page 3 of Resource Guide #6, have expanded the breadth of building standards and regulations for cities with very high and high FHSZs. In addition to new requirements in those zones, it is likely the zone boundaries may expand for many communities in 2022 as CAL FIRE releases new maps. Acknowledging this change from the past may help clarify that minimum requirements are expanding and that without any special local action the city will be doing more to ensure a more wildfire-adapted community.

These new requirements are for Local Responsibility Areas (primarily cities and towns) and have less impact on State Responsibility Areas (primarily unincorporated areas). If a jurisdiction does not have a very high or high FHSZ, then this policy likely isn't for you.

Develop/Update a home hardening and defensible space program to preserve existing housing

Applicable to all jurisdictions

[Jurisdiction Name] will develop/update 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.

Background: Existing and forthcoming State requirements ensure new construction is built to higher wildfire standards – existing housing represents a much greater ignition risk in a wildfire. To view a model for a home hardening and defensible space program, see Fire Safe Marin's program in Section 3 of Resource Guide #4. Jurisdictions that are ready to advance programs immediately can access a range of funding programs through CAL FIRE, Coastal Conservancy, FEMA, and others to support efforts. Jurisdictions who would prefer to borrow an approach could wait for framework under development by CAL FIRE and CalOES who are working with three pilot communities to develop a replicable framework for launching a local program for home hardening that will leverage FEMA HMA grant assistance. The CAL FIRE and CalOES pilot will launch in 2022 and last three years, however, if there is early success the program could expand in 2023.

Consider future action for narrow setbacks informed by forthcoming structure-to-structure ignition prevention research

Applicable to jurisdictions with narrow setbacks

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 (IBHS), and CAL FIRE on structure-to-structure ignition, consider science-backed approaches to addressing narrow setbacks. [Jurisdiction Name] may wait for State guidance, implement findings into local building codes, or provide voluntary guidance to residents.

Background: The research is still catching up with how to adapt to complex wildfire challenges. Communities may determine the best approach for dealing with the structure-to-structure ignition challenge is to focus on core wildfire and housing strategies (baseline defensible space and home hardening techniques) and let the research catch up on the issue of narrow setbacks. The goal of the NIST and IBHS research is to provide guidance, and ultimately code recommendations for separation distances to minimize the chance of structure-to-structure ignition. The research will study single family homes, Accessory Dwelling Units (ADUs), and shed structures and may provide direction for determining use of noncombustible and other enhanced fire- and ignition-resistant materials and assemblies. More information about this research is available on the NIST Structure Separation Experiments webpage.

Develop a "Wildfire Reach Code" to inform action in areas with reduced structure separation distances

Applicable to jurisdictions with narrow setbacks

The [Jurisdiction Name] building department may consider wildfire reach code actions to address areas with reduced structure separation distances (SSD) (also referred to as narrow setbacks). The reach code could be provided as voluntary guidance for the community or be required for new construction and/or substantial building remodel triggers.

Background: Beyond minimal fire codes, cities or counties can develop a "Wildfire Reach Code" to exceed current defensible space and home hardening requirements to further reduce radiant heat and direct flame ignition scenarios, which are issues in areas with narrow setbacks. The **Fire Safe Regulations** and **Additional Design Code Considerations** could help inform specific code guidance for structures with narrow setbacks.

> *Example:* The Town of Portola Valley has amended their building code to further define and set standards for "ignition-resistant" materials. The Portola Valley ordinance to amend the building code can be found on page 953 of their December 8, 2021 Council Agenda. The Portola Valley example is not specific to areas with narrow setbacks, but it does include measures that would address radiant heat concerns. At the end of the Portola Valley Council adoption, Councilmembers summarized their reasoning for the amendment (listen to their comments 5:41:30 – 5:46:00).

The **Fire Safe Regulations** constitute the minimum fire safe development regulations of the California Board. The Fire Safe Regulations focus on emergency access, water supply, road signage, and greenbelts. The regulations address fire safe development leading up to the parcel, but not on the parcel itself and are not related to the California Building Code Chapter 7A. While the Fire Safe Regulations are not specific to building and defensible space standards, the below element of the draft regulations may help guide local government codes and/or residents with narrow setbacks.

> *DRAFT* Fire Safe Regulations § 1276.01 Building and Parcel Siting and Setbacks. (pp. 62-63).*
>
> ***Note: These are draft regulations and are subject to change before final approval.***
>
> *a) All parcels shall provide a minimum thirty (30) foot setback for all Buildings from all property lines and/or the center of a Road, except as provided for in subsection (b).*
>
> *b) A reduction in the minimum setback shall be based upon practical reasons, which may include but are not limited to, parcel dimensions or size; topographic limitations; development density requirements or other development patterns that promote low-carbon emission outcomes; sensitive habitat; or other site constraints, and shall reduce Structure-to-Structure ignition by incorporating features such as, but not limited to:*
>
> *(1) noncombustible block walls or fences; or*
>
> *(2) five (5) feet of noncombustible material extending five (5) feet horizontally from the furthest extent of the Building; or*
>
> *(3) installing hardscape landscaping or reducing exposed windows on the side of the Structure with a less than thirty (30) foot setback; or*
>
> *(4) additional structure hardening that exceeds the requirements in the California Building Code, California Code of Regulations Title 24, Part 2, Chapter 7A.*
>
> *Authority cited: Section 4290, Public Resources Code. Reference: Sections 4290 and 4291, Public Resources Code.*

Additional Design Standard Considerations: ABAG/MTC staff met with speakers from the Wildfire/Housing Workshop Series to identify specific considerations for narrow setbacks to complement the high-level measures above. The guidance below offers additional details and acknowledges that not all Chapter 7A materials are equal in terms of the protection offered for wildfire exposure resistance.

Summary of expert opinion:

1) *Start with Baseline Best Practices for Defensible Space and Home Hardening:* Before focusing on any measure specific to a narrow setback between buildings, compliance with defensible space codes, especially the zero- to five-foot zone is the first step. Home hardening standards, especially those that address ember ignitions, are key. In neighborhoods with narrow setbacks, the best mitigation strategy is to minimize the chance that the first home ignites.
2) *On building faces with separation distances less than 30 feet:*
   a) Windows: Recommend dual-pane windows with two panes of tempered glass. Glass in windows can break from exposure to radiant heat, after which it can become a point of entry for embers and fire. Two panes of tempered glass add strength to windows in these scenarios. In addition to choosing windows rated for tougher fire conditions, consider limiting windows on the sides facing nearby homes, or off-setting windows with the windows of neighboring buildings. For existing construction, installation of deployable metal shutters may be considered. Screens on windows should be metal.
   b) Siding: Particularly in situations where the space between homes is limited, use a noncombustible siding material as part of a one-hour fire-rated assembly. There should be a minimum six-inch distance between the ground and the start of the siding (i.e., only the concrete foundation is visible).
   c) Eaves: Recommend use of soffit eaves constructed using a noncombustible material. Open eaves are vulnerable to ignition and rapid lateral fire spread, potentially facilitating fire entry into the attic. Targeting this common deficiency will further limit fire spread between buildings.
   d) Gutters: Recommend use of noncombustible gutters and noncombustible gutter covers. Gutters and their contents are vulnerable to rapid ignition via embers and radiant heat. Gutters often share points of contact with exterior walls and rooves, so a gutter fire can quickly ignite a structure.
   e) Decks: Recommend use of noncombustible materials for attached decks to reduce vulnerability to structure ember and radiant heat exposure.
3) *On the ground area between buildings with minimal home separation distances:*
   a) Recommend noncombustible landscaping features (e.g., rock mulch and noncombustible hardscape) and fencing in the area with minimal separation distances. At a minimum fencing should be noncombustible and could be designed to provide partial radiant heat shielding between buildings.

Perform an evacuation assessment

Applicable to all jurisdictions with significant evacuation concerns

[Jurisdiction Name] will conduct an evacuation assessment that meets State law requirements to identify evacuation routes and locations. The analysis will identify points of evacuation congestion and study solutions to improve evacuation clearance times. Following the analysis, [Jurisdiction Name] will develop responsive actions.

Background: If jurisdictions are not able to complete a more comprehensive evacuation assessment before the Housing Element update deadline, they may consider the development of an evacuation assessment as a policy measure in their Housing or Safety Element. SB 99 is triggered by the Housing Element update and requires all jurisdictions to identify residential developments that do not have at least two emergency evacuation routes. In addition to the evacuation assessment required by SB 99, a more comprehensive evacuation analysis in compliance with AB 747 and AB 1409 (triggered by the next LHMP update) may create an opportunity to adopt more responsive evacuation strategies. For more information about evacuation laws and evacuation assessment considerations, and sample evacuation planning RFPs, see to Resource Guide #5 and Workshop 3.

Important Context: The physical landscape and development patterns of each community are unique. While we can learn from evacuation study results from single communities, all jurisdictions will need to conduct an assessment. Jurisdictions using the Zonehaven platform for evacuation notifications may be able to leverage its features in lieu of more specialized evacuation modeling to support decision making in the near term.

Install street parking boxes to improve ingress and egress in WUI areas

Applicable to jurisdictions that have already identified right-of-way as a key evacuation constraint

[Jurisdiction Name] will strategically identify where it is safe to park on hilly, winding roads with narrow street widths and indicate these areas using parking boxes. Parking box locations will be determined based on ensuring emergency vehicle access and improving visibility and turning safety for larger vehicles.

Background: Other cities in the region are taking a similar approach through an update of their curb management along narrow roadways. Partnerships between Public Works and Fire Departments identify areas where additional red curbs are needed to ensure sufficient ingress and egress, or where past red curbing has faded and required maintenance to be clearer to motorists. "Soft shoulders" may be used to increase available parking area beyond paved right of way. Consider adding signage to parking boxes to ensure understanding. Ticketed violations could be used to support costs associated with paint and sign maintenance. Enforcement could be greater before and during red flag conditions.

> *Example:* In September of 2021, the City of San Rafael instituted a parking box program on select roadways. Some boxes include "soft shoulders" to maximize possible parking areas. Learn more about San Rafael's parking box program and read their parking box ordinance.

Develop/Update a pre-evacuation strategy and program for WUI residents

Applicable to jurisdictions that have already identified congestion as a key evacuation constraint

[Jurisdiction Name] will develop/update a strategy and program for residents to understand wildfire hazard warnings, develop a household evacuation plan, and be ready to evacuate. [Jurisdiction Name] will encourage residents to consider pre-evacuation during extreme red-flag events that could result in fast-moving wildfires if they occur.

Background: Evacuation preparation and proactive evacuation can reduce the number of vehicles evacuating during an event. Pre-evacuation is a new strategy that will not work for every household. There are other strategies communities could consider to reduce evacuation congestion by reducing the number of vehicles. Strategies and education that reduce the number of vehicles households use to evacuate are important messages to increase evacuation clearance and enable access for fire apparatus.

Definition: Extreme red-flag events are weather conditions that in addition to resulting in a red flag warning, represent baseline conditions that could move a fire rapidly if it developed.

> *Example:* The City of Berkeley hosts a website and video series to educate residents about how to proactively prepare and respond to wildfires. In addition to recommending residents reach out to their network outside the WUI, Berkeley has also worked with local hotels to offer reduced rates. View Berkeley's evacuation resource page and their pre-evacuation hotel resource page.

> *Example:* Fire Safe Marin, a Fire Safe Council, helps residents prepare themselves and their homes for wildfire events. Resources include emergency alerts, evacuation checklists, resources for those who may require additional assistance during wildfire events, and more. View these resources in Resource Guide #4 and on Fire Safe Marin's website.

Who/How? – Communication and Engagement

Engage and educate residents on policy changes and upcoming program opportunities

[Jurisdiction Name] will develop a public engagement and education strategy to educate residents, contractors, and developers about recent policy changes. [Jurisdiction Name] will work with community partners, local officials, and non-profit organizations. [Jurisdiction Name] will leverage social media, traditional forms of outreach, and education programs to distribute best practices for meeting required or voluntary fire adaptation measures to reduce risks to structures, landscaping, and property.

Background: Review and publish for the public the latest and most up-to-date wildfire policies and programs. Consider including the latest local or State hazard mapping. Ensure all materials are clear, easy to understand, and provided in multiple commonly spoken languages and that staff or additional information is available to help the community interpret maps if needed.

> *Example:* Napa Communities Firewise Foundation's website presents information as part of the Napa County Community Wildfire Protection Plan (CWPP). On this website, community member can review the CWPP, local Fire Safe Council Work, and community base maps that show local projects and hazard vulnerability.

Leverage existing community-based partnerships to disseminate wildfire adaptation information

Applicable to jurisdictions with existing relationships with community-based organizations (CBOs)

[Jurisdiction Name] will expand existing partnerships with local non-profit organizations, neighborhood groups, and other community organizations to create a broad network of wildfire-informed residents.

> *Example:* Marin Wildfire Prevention Authority (MWPA) funds several public outreach and education projects to create sustainable, wildfire-adapted communities through its partnership with Fire Safe Marin, the local Fire Safe Council. Fire Safe Marin provides resources for homeowners to maintain defensible space, hosts a monthly webinar series, and even has a YouTube channel where they host a show called "Wildfire Watch" to help citizens of Marin keep themselves safe. Find out more about their education and outreach campaigns on Fire Safe Marin's programs webpage and in Resource Guide #4.

Promote neighborhood-based wildfire-centered networks

Applicable to jurisdictions that do not have existing community networks to leverage in the WUI

[Jurisdiction Name] will foster neighborhood-wide solutions and establish neighborhood-wide communication networks for citizens to work together. To build relationships between neighbors, [Jurisdiction Name] will offer incentives like chipper programs, or access to local wildfire experts to speak at neighborhoods events.

Background: The National Fire Protection Association (NFPA) runs the Firewise USA® recognition program, which provides a framework to help neighbors get organized, find direction, and take action to build wildfire-adapted homes and communities together. Neighbors may worry about ignition from poor defensible space or homes constructed with older, more flammable building materials. Community members may obtain or request a written wildfire risk assessment from the local jurisdiction to identify the status of the community and identify shared goals to catch older homes up to newer standards of wildfire adaptation. To learn more about Firewise Communities, see Resource Guide #1, Resource Guide #4, and a list of existing Firewise USA® sites.

> *Example:* The Diablo Fire Safe Council recently won a grant through the CAL FIRE Early Action California Climate Investments (CCI) Program. Part of the grant award was to develop Firewise Communities to continue collective, community-wide efforts. More information about the grant award can be found on page 43 of the 2021 CAL FIRE CCI Grant Award Recipient List.

Update residents with best available wildfire adaptation guidance

Applicable to all jurisdictions

Update the [Jurisdiction Name] website with current State guidance on home and building owner wildfire adaptation actions. [Jurisdiction Name] will provide the best available guidance related to defensible space, home hardening, and evacuation.

Background: For communities with out-of-date guidance or no existing guidance, consider borrowing best practice documents, websites, and videos from the State and neighboring jurisdictions. Resource Guide #3 includes a small set of resources jurisdictions can pull from to point residents to up-to-date resources. For communities with more capacity, consider developing a comprehensive guidance checklist for renters and building owners, specific to your jurisdiction, and consider including template permit applications.

> *Example:* The City of Oakland's wildfire resource webpage leverages CALFIRE's wildfire public information webpage. Leveraging the latest in State resources is a fast way to point residents to the latest information on how to stay prepared. Like Oakland, a city can augment State resources with local information.

Example: The City of Santa Rosa hosts a Property Owner Resource Library for property owners to learn about their property's wildfire risk, implement home hardening and defensible space, and prepare for evacuation.

Provide proactive communication to current and new residents on safe evacuation

Applicable to jurisdictions with known evacuation challenges

Working with the Fire Department and/or Office of Emergency Services, [Jurisdiction Name] will publish best practices for wildfire evacuation, hold annual drills, offer proactive evacuation warnings, and increase redundancy of evacuation communication platforms.

Background: Proactive communication is key to reducing evacuation strain on local roads. In the ABAG Wildfire/Housing Workshop Series, fire professionals reiterated a need to bolster evacuation education among residents. These experts communicated key messages, like the importance of evacuating with as few vehicles as possible when a fire is imminent. In addition to evacuation planning measures before an event, there are several ways evacuation times can be improved during response to an active fire. Timely and targeted evacuation warnings can improve clearance times and target households at greatest risk. Potential communication avenues may include mobile phone alerts, texts, radio or television warnings, speaker systems installed in neighborhoods, or other methods.

Example: Fire Safe Marin's Evacuation Checklist offers residents synthesized information on evacuation best practices in a single document, available in both English and Spanish.

Example: The City of Albany recently held an evacuation drill for Albany Hill to prepare residents for wildfire evacuation events. Residents learned how to pack their "go bags" and sign up for emergency alert notification systems before participating in an evacuation drill.

With neighboring cities, explore the creation of a collaborative multi-agency organization to advance wildfire prevention efforts.

Applicable to all jurisdictions

[Jurisdiction Name] will participate in public meetings and workshops with neighboring cities to explore whether a multi-agency organization or joint powers authority similar to the Marin Wildfire Prevention Authority may advance wildfire prevention activities faster.

Background: Wildfire preparedness is an increasing priority for many Bay Area jurisdictions due to devastating wildfire seasons in California and the Bay Area over the last five years. While each community has unique challenges, many wildfire challenges are shared across jurisdictions. As solutions to adapt to wildfire advance, communities may want to consider whether joint efforts with neighbors may yield stronger results.

Example: The Marin Wildfire Prevention Authority (MWPA) was launched in 2020 to organize wildfire prevention efforts across Marin County. A full background on the MWPA and its formation is available in Resource Guide #2.

Tracking Policy and Program Progress

Track wildfire building code adoption of new and existing properties in a database

Applicable to all jurisdictions

Track which parcels, through new construction, significant remodels, or voluntary action, meet higher WUI building code requirements. Develop a database and method to track information already collected as part of permitting, inspections, and other existing processes.

Background: A database to track the progress of properties and their level of resilience to wildfire provides jurisdictions a common operating picture of the state of wildfire-adapted properties. A database could help jurisdictions identify buildings in need of defensible space or home hardening improvements and inform outreach and incentive programs.

1) *Use **GIS** to:*
   a) *Identify existing properties built after 2009 in the very high FHSZ that were built to Chapter 7A building standards.*
   b) *Track future properties in newly designated very high, high, and potentially moderate FHSZs that will be constructed in compliance with expanded Chapter 7A building standards called for by SB 63.*
2) *Use **permit data** to:*
   a) *Track existing properties that permit remodels that trigger wildfire compliance measures, as instituted by the jurisdiction.*
   b) *Track existing properties that permit voluntary or incentivized wildfire retrofits.*

3) *Use **inspection data** to:*
   a) *Track properties that undergo regular inspections. Currently, many wildfire resilience home inspections only consider defensible space. Home hardening measures may also be incorporated into inspections to provide residents with further guidance about protecting their property.*
      i) *Example: MWPA has instituted a defensible space and home hardening inspection program. Inspectors provide property owners with a comprehensive report detailing how they can improve their property's safety. This information could be input into a database to capture prior homeowner improvements.*
   b) *Track properties in very high and high FHSZs that go through the hazard disclosure process at point-of-sale.*
      i) *Example: Only properties located within CAL FIRE-designated very high or high FHSZs are required to get inspections in accordance with AB 38. The City of Santa Rosa allows property owners to request inspections during a point-of-sale to be done by a Fire Prevention Staff Member for a fee of $159. See their AB 38 inspections webpage for more information.*
   c) *Background: The CC1102.9 Hazard Disclosure applies to the very high and high FHSZs in both the SRA and LRA. Property owners in these areas are required to provide documentation stating the property is in compliance with Section 4291 of the Public Resources Code, or local vegetation management ordinances upon the sale of their property. This requirement could be used to track the resilience of properties, as well as corroborate existing data about properties indicated in the above methods.*

SECTION 5: ADU case studies for tackling housing challenges in the WUI

Disclaimer: *MTC/ABAG has conducted its own research to assess examples of ADU Ordinances with amendments for wildfire mitigation and adaptation in the WUI. The following are a set of jurisdictions that have worked to amend their ADU ordinances to balance State ADU requirements and wildfire risk. MTC/ABAG is not promoting a specific approach for ADUs and does not know whether these approaches meet State ADU laws; however, the following are highlighted as examples for how communities can take approaches to identify wildfire and evacuation informed overlay zones and corresponding housing policy.*

Jurisdiction	*Where*	*What*	*Relevant Materials*
Berkeley *[Not finalized]*	Locally defined fire zones[1]	Limit to one ADU or JADU for single family zone, with parking and building details.[2]	- Staff presentation of amendment options. - Draft ADU Ordinance
Corte Madera	Uniquely defined overlay[3]	Sets capacity limit for ADU or JADU across overlay[4]	- Planning Commission Staff Report & Amendment
Larkspur	Combines VHFHSZ and limited roadways[5]	Prohibits ADU or JADU but includes waiver process[6]	- Municipal Code 18.23.040 ADU Restricted Areas
Oakland	Combines VHFHSZ and limited roadways[7]	Limit to one internal conversion ADU or JADU[8]	- Council Agenda – Item 3.1 with attachment links - Staff Report

[1] *Berkeley Fire Zones use CAL FIRE FHSZ and local knowledge to identify areas at higher risk to wildfire. Wildfire-related ADU restrictions are applied in Berkeley Fire Zones 2 and 3.*

[2] *Berkeley allows one ADU or one JADU for single family dwellings. For duplex or multiple-family dwellings up to two ADUs are allowable. JADUs have no parking requirements, while ADUs in the overlay zone may need to provide an off-street space. Rooftop balconies and decks are prohibited in the overlay zone. No projections into the four-foot setback are allowed in the overlay zone.*

[3] *Corte Madera identified a single neighborhood with unique development conditions that include: (i) steep, narrow, winding roads, (ii) small developed lots with limited off-street parking, (iii) heavily vegetated area with wood structures, and severe fire hazard, (iv) a road configuration and on-street parking that limit ingress/egress of evacuating residents and emergency responders.*

[4] *Corte Madera divided the ~250 residential unit overlay zone into eleven subdistricts and allowed a 10% increase in units, or 25 JADUs or ADUs in total.*

[5] *Larkspur identified parcels in the VHFHSZ and served by a single emergency access route and with one of the following limitations, (i) streets with limited width, where permitted on-street parking is strictly limited to designated locations with white outlined parking space rectangles, or streets with minimum twenty-foot roadway width required for emergency access, or one-lane roadways allowing two-way traffic, or remote areas not served by improved or paved roads.*

[6] *Larkspur prohibits any ADU or JADU in the designated areas; however, offers a waiver process that can only consider factors related to ingress/egress for emergency vehicles and resident evacuation. The Zoning Administrator and Fire Department will consider factors like whether multiple points of ingress or egress exist and the distance from the property to the closes road with unconstrained access.*

[7] *Oakland identified parcels in the VHFHSZ and served by roadways with one of the following limitations: (i) roadway width less than twenty-six feet, or cul-de-sacs longer than 600 feet.*

[8] *Oakland limits one internal conversion ADU or JADU per lot and prohibits other newly constructed attached and detached ADUs in the overlay zone.*

SECTION 6: Resources from the Wildfire/Housing Work Group

In fall 2021, ABAG's Wildfire/Housing Work Group provided resources for local planning and housing staff working to integrate wildfire and housing issues in local land use planning efforts like the Housing and Safety Element updates. Four virtual workshops featured national and state experts, who presented current information and best practices, case studies, and recent experiences. These sessions helped local agencies gain a better understanding of the evolution and behavior of wildfires, defensible space, home hardening, evacuations (new laws, practical approaches, and new models), and responsive land use planning in the Wildfire/Urban Interface (WUI). Each session included Resource Guides with practical takeaway information, references to key documents, and helpful background information. Below are links to the information and expertise that was collected.

ABAG Technical Assistance Portal

Find all information about the Wildfire/Housing Work Group, including workshop topics, recordings and slides, and Resource Guides on ABAG's Technical Assistance Portal at: https://abag.ca.gov/technical-assistance/wildfires-how-preserve-protect-housing.

Workshops

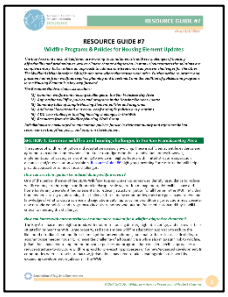
WORKSHOP #1
WILDFIRES & HOUSING 101
Overview of fire evolution, fire science, intro to home hardening & defensible space, plus introduction of Marin Wildfire Prevention Authority.

WORKSHOP #2
DEFENSIBLE SPACE & HOME HARDENING
Deep dive into defensible space & home hardening with updates from CAL FIRE plus practical resident guidance.

WORKSHOP #3
EVACUATIONS: LAWS & TECHNOLOGY
Exploration of new evacuation laws (SB 99, AB 747), OPR updates, and approaches to modeling.

WORKSHOP #4
LAND USE PLANNING IN THE WUI + ADUS
Outline planning & risk mitigation initiatives for wildfires. Explore how to add ADUs and housing in the WUI.

Resource Guides



- ✓ *1 - Wildfires – Research, Science & Key Organizations*
- ✓ *2 - Marin Wildfire Prevention Authority (MWPA)*
- ✓ *3 - Home Hardening and Defensible Space Resources for Residents*
- ✓ *4 - Fire Safe Marin's Collaborative Wildfire Public Education and Programs*
- ✓ *5 - New Evacuation Laws, Key Considerations and Planning Resources*
- ✓ *6 - Coming Soon 2022 – State Resources*
- ✓ *7 - Tackling Housing Challenges in the WUI*

Further Technical Assistance

ABAG is offering one-on-one technical assistance in spring 2022 to agencies looking to incorporate wildfire/housing information into their Housing and Safety Element updates. If interested, please contact ABAG Resilience Planner Michael Germeraad at mgermeraad@bayareametro.gov.