



Community Planning Assistance for Wildfire Recommendations for Wenatchee, Washington



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Introduction

Community Planning Assistance for Wildfire

The Community Planning Assistance for Wildfire (CPAW) program supports communities' efforts to reduce wildfire risk through improved land use planning. CPAW provides communities with professional consulting services including land use planners, foresters, wildfire risk modelers and hazard mitigation specialists to integrate wildfire mitigation measures into the development planning process. CPAW assistance is provided at the request of the local government, and all advice and assistance is limited to services that are intended to reduce the risk from wildfires.

In 2015, CPAW officially launched in five communities, including Wenatchee, Washington. For over nine months, a multi-disciplinary team worked with local stakeholders to determine Wenatchee's unique wildfire planning needs. Primary points of City staff contact were the City of Wenatchee Planning Department and Executive Services and Chelan County Fire District 1. Information was gathered through in-person site visits, document review and analysis, and frequent stakeholder discussions. The process culminated in a set of recommendations to guide the City's future actions to strengthen its approach to wildfire through the planning process.

CPAW is a partnership between Headwaters Economics and Wildfire Planning International. The program is funded through a cooperative agreement with the USDA Forest Service and private foundations. More information about the program is available at planningforwildfire.org.

Overview of Wenatchee Historic Wildfire Impacts

The region in which the City of Wenatchee is situated is characterized by vegetation indicative of a warm, dry climate and a very active fire regime. This is indicated by the high occurrence of large and notable fires throughout Chelan County. Records dating back to 1970 reveal 27 wildfires that have significantly impacted the immediate region surrounding Wenatchee. Most notably: the 2015 Sleepy Hollow Fire, which resulted in the loss of 30 homes and significant losses associated with the industrial/commercial area, and the 1992 Castlerock Fire, which resulted in the destruction of 17 homes and 15 apartment units within Wenatchee city limits. Losses during both wildfires were a result of direct flame impingement and burning embers. Specific to the Sleepy Hollow Fire, burning airborne embers were responsible for the loss of commercial warehouses in the urban downtown core. The comprehensive integration of wildfire mitigation into land use planning is a necessary component of the overall risk reduction strategy for the City of Wenatchee.

Summary of Recommendations

This report provides four recommendations, each of which contains: a brief overview to summarize its importance and relevance; a section on implementation to help guide staff on next steps, and; tips and additional support. Recommendations are presented in a logical priority of implementation:



1. Develop a Community Wildfire Protection Plan for the City of Wenatchee.
2. Redefine the Wildland-Urban Interface (WUI) and Implement a WUI Risk Assessment Program.
3. Update the Wildland-Urban Interface Regulations.
4. Update the Comprehensive Plan to Address Wildfire Implementation.

All recommendations were drafted by the CPAW team, independent of City staff direction except for cases of clarification and feedback on accuracies of current regulations and policies. Local governments, however, retain sole authority for implementation of *any and all* recommendations provided through CPAW. As staff consider these CPAW recommendations, it is anticipated that further refinement will be required to ensure full alignment with City goals.

General Implementation Guidance

In addition, general guidance is also offered to improve the overall success of any future implementation effort:

- **Trainings and Capacity Building.** Many of the recommendations rely on additional education of staff related to technical topics. Future trainings, such as in-depth courses on the Home Ignition Zone, can also improve internal capacity and reduce reliance on outsourcing. Training and capacity building efforts can be coordinated with existing local resources already focused on these activities, such as the Washington State Fire Adapted Learning Network, and other departments mentioned throughout this report.
- **Public Outreach and Engagement.** Underlying any successful effort to update community plans, policies and regulations is a concerted approach to engage the public. This component will be essential to moving CPAW recommendations forward, and may include public meetings and presentations on wildfire, information brochures in development applications that illustrate mitigation standards, and one-on-one interactions occurring between fire department and planning staff with residents.
- **Stakeholder Collaboration.** As mentioned throughout the report, collaborating with a number of stakeholders is critical throughout the implementation process. Stakeholders will vary—where applicable, suggestions to individual agencies and departments have been provided. These suggestions serve as a starting point only and are not intended to limit the participants throughout the collaborative process.

Thoughtful execution of a well-designed wildland-urban interface program also takes time. While this set of recommendations is purposefully ambitious in nature, it acknowledges that change does not occur overnight. However, with continued commitment to address its wildland-urban interface, these recommendations serve as a long-term roadmap for Wenatchee's resilient future.

Recommendation 1: Develop a Community Wildfire Protection Plan

The City of Wenatchee and Chelan County Fire District #1 should collaborate with other local stakeholders to develop a citywide Community Wildfire Protection Plan.

Why This Recommendation Matters

Overview

A Community Wildfire Protection Plan (CWPP) is a plan uniquely focused on reducing wildfire risk to a specified area. It allows stakeholder to collaboratively identify wildfire risk factors and local values at risk, and prioritize mitigation strategies. CWPPs can be implemented at a number of scales, including neighborhood/subdivision, fire district, city, and county. CWPPs can also “overlap” with their scales and jurisdictional boundaries. The Cascadia Conservation District is planning to develop a CWPP to serve Chelan County and guide countywide actions related to wildfire. The City of Wenatchee, however, does not have a citywide CWPP or any comparable plan that solely focuses on wildfire risk at the community scale.

Developing a citywide CWPP offers many potential benefits:

- It allows local stakeholders to focus on local risk factors and prioritized actions unique to the city scale.
- The CWPP can become the “collector” of local wildfire and WUI information, track implementation efforts in a coordinated and organized manner.
- A CWPP complying with the Healthy Forest and Restoration Act (HFRA) provides an avenue for influencing fuel treatment decisions on adjacent national forests, and becomes eligible for Federal and State mitigation grant opportunities.
- When done in collaboration with the County, developing CWPPs on city and county scales would effectively meet multiple stakeholders’ objectives for community risk reduction.
- It allows the City to define, identify, and prioritize wildfire mitigation efforts throughout the City, including future growth in the Urban Growth Area (UGA).

Relationship to Community Planning

CWPPs focus on community values at risk, including transportation and access routes, critical infrastructure, neighborhoods and homes, natural resources, and other uses. Creating links between the CWPP and community planning processes ensure these two dynamic activities remain in sync. As Wenatchee considers future growth, the City will likely assume responsibility for additional areas at risk within the City’s UGA. This will require a re-evaluation of mitigation strategies for those areas based on changing roles and responsibilities, and existing/future land uses. This information can be addressed in the CWPP through inclusion of community planning actions under the purview of the city or fire district.

Implementation Guidance

Designate a CWPP Lead and Form a Committee

The City is encouraged to take a lead role in the CWPP development and work with either an existing multi-stakeholder group (e.g., local Fire Adapted Communities network, Wildfires and Us Coalition) or form a new group to serve as the CWPP committee. Ensure this group represents diverse stakeholder interests and can effectively collaborate on the development of a CWPP.

Review CWPP Development Guides

Several guides and handbooks exist to provide best practice advice on the development of CWPPs. These include tips on forming a steering committee, collaborating with stakeholders, engaging the public, meeting CWPP minimum requirements, and evaluating future progress:

- [Preparing a Community Wildfire Protection Plan \(2004\)](#)
- [University of Oregon CWPP Evaluation Guide \(2008\)](#)
- [Best Management Practices for Creating a Community Wildfire Protection Plan \(2012\)](#)

Create an Action Table

A CWPP should include specific deliverables, identify accountability and determine timelines for ensuring continued implementation. One of the key ingredients to successful CWPP implementation is an action table, which helps clearly define the following:

- **Action:** Specific action to be taken
- **Target Area:** Where it applies—e.g., community at risk, or planning area within community at risk
- **Lead:** Lead agency responsible and accountable for administration and implementation.
- **Coordination:** Supplementary stakeholders (e.g., County and City agencies and departments) critical to implementation.
- **Timeframe:** Timeframe for implementation, unless this is an ongoing task.
- **Links:** References to other documents, policies, or community planning initiatives.
- **Funding:** Potential funding resources, if necessary for implementation.
- **Follow-Up:** Information on action status updates and accomplishments.

Ensure Actions Include Planning

CWPPs will contain a range of mitigation actions. To effectively link the CWPP to the planning process, actions should connect to and support the implementation of land use policies and regulations. Recommendation 4 identifies a number of policies that will require further detailed work to put into action. The CWPP action table should cross-reference these policies and further

flesh out any necessary details. For example, revising the WUI definition and applying mitigation standards to larger areas of the City will require a public outreach and stakeholder engagement effort. This type of activity should be connected to the City's broader Fire Adapted Community activities.

Utilize Hazard and Risk Assessment Mapping

As part of the CPAW process, a wildfire risk map was developed for the City of Wenatchee. This map can be used as the basis of a current WUI map until further risk mapping becomes available (see Recommendation 2). Utilizing a city wide map will enable the City to prioritize areas for mitigation.

Link to Other Plans

A citywide CWPP should also link with other applicable plans, such as the Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan and the future Chelan County CWPP. During the update of the next Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan, City stakeholders should add their CWPP as an addendum to the plan to ensure future CWPP actions get updated on a five-year cycle (if not sooner) and expand funding opportunities for implementation.

Tips and Additional Support

- [Washington Department of Natural Resources – Community Wildfire Protection website](#) provides state information on a grant assistance program and other related resources.
- [FEMA Region X](#) provides resources and information on topics such as CWPP-NHMP integration.
- [Washington State Fire Adapted Communities Learning Network](#) may connect Wenatchee with other communities regarding CWPP development and implementation of similar efforts.

Recommendation 2: Redefine the Wildland-Urban Interface (WUI) and Implement a WUI Risk Assessment Program

Clearly redefine Wenatchee's wildland-urban interface, and integrate the risk assessment map as component of the interim decision support tool for use in appropriate land use planning and updated WUI regulation application. Continue the refinement of a spatially delineated risk assessment program by incorporating property specific assessment information.

Why this Recommendation Matters

Overview

Currently, the City of Wenatchee defines the wildland-urban interface as:

“The code official shall have final authority in determining which properties shall be affected by the WUI zone designation. The determination shall be made based on the property's location and exposure to large tracts of natural vegetation. Property and structures immediately adjacent to undeveloped land with natural vegetation without fuel breaks establish the interface line or primary zone and are subject to all of the provisions of this chapter. Property and structures located to the east, or the developed side, of the primary zone and within 1,500 feet of the interface line are included in the secondary zone.” (Title 3, Chapter 3.36 “Wildland-Urban Interface Standards,” Wenatchee City Code).

Fire activity in 2015 however, resulted in wildfire impacts far beyond the 1,500 foot secondary zone defined in the above description. Although the City's current definition provides spatial boundaries, redefining the WUI would reflect the true scope of the City's risk. Even with this further delineation, they do not reflect the scope of the WUI as a “set of conditions” (i.e., topography, vegetation, structure condition, etc.) which facilitates the transfer and spread of fire from vegetation to structures, or vice versa. Specifically, there is no current spatial assessment that relates and delineates the probability and potential fire behavior with the probability of consequence (structure, infrastructure and resource vulnerability). The largest challenge that this presents is the inability to effectively assess and display risk at the scale it can be appropriately mitigated through planning. Consequently, these large areas cannot be justifiably prioritized for appropriate zoning and regulation application based on risk levels and any change in risk levels through mitigation cannot be effectively assessed or tracked. Taken together, there is not sufficient guidance for current community planning decisions to be made based on a systematic approach to WUI identification and WUI risk.

Implementation Guidance

Redefine the WUI

To provide the basis for a true understanding of the risk that Wenatchee faces, the WUI should be more accurately defined as: *Any developed area where conditions affecting the combustibility of both wildland and built fuels allow for the ignition and spread of fire through the combined fuel complex.*

Inform Planning Decisions using the Wildfire Risk Assessment

The clear definition of WUI and a delineated and spatially represented WUI risk assessment is the primary decision support tool for all community wildfire planning initiatives. Understanding the levels of WUI risk in all areas of the City provides guidance to determine appropriate planning decisions and mitigation requirements. City plans and codes informed by the risk assessment should include:

- Wenatchee Comprehensive Plan
- The following Wenatchee City Code Titles:
 - Title 2- Buildings
 - Title 3- Fire
 - Wildland-Urban Interface Standards
 - Flammable Materials Code
 - Storage of Combustible Materials
 - Title 7- Streets and Sidewalks
 - Title 8- Traffic
 - Title 10- Zoning
 - Title 11- Subdivision
 - Title 12- Environment
 - Title 15- Development Impact Fees
 - Title 16- Code Enforcement
- A (future) CWPP
- City of Wenatchee Habitat Plan
- Wenatchee Foothills Trail Plan
- Chelan County Multi-Jurisdiction Natural Hazard Mitigation Plan

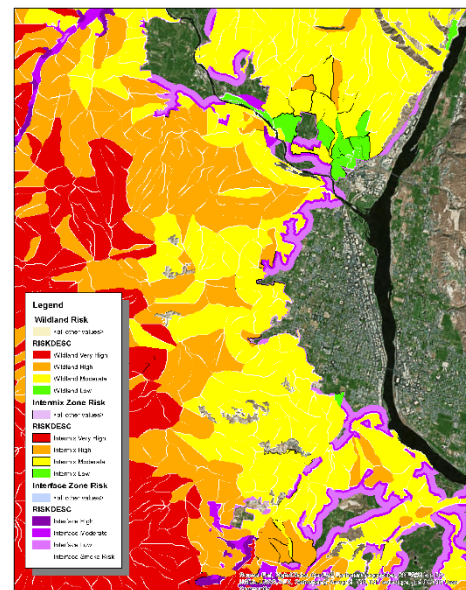


Figure 1. Wenatchee and Chelan County Fire District 1 No-Harm Landscape Level Risk Map

As part of the CPAW process, a landscape level wildfire risk assessment and resulting map product (No Harm) was developed and delivered for use (with training) to the City of Wenatchee and Chelan County Fire District 1. This product is focused on illustrating the delineated fire risk present in the wildland, intermix and interface zones using historical, weather, topography, wildland fuel conditions and historical fire occurrence to determine the wildfire probability and potential fire behavior (including airborne ember transport). It is important to note that the No Harm model does not assess structure ignition potential or consequence as a result of ember, convective heat or radiant heat impingement; however, it is an important first component toward the City's overall WUI risk assessment, specifically for use in providing context for individual property assessments which do provide the structure vulnerability context.

Initiate Site Specific Property Assessments

This landscape level risk assessment (as with other similar assessments) does not include detailed site-specific characteristics of individual properties, which in turn does not allow the City the ability to assess the potential *consequences* of wildfire occurrence with regard to structure and infrastructure losses. Research and case studies highlight the importance of individual site characteristics as factors that determine the ignition vulnerability of individual structures. Individual structure assessments are the important second component to establishing a comprehensive City-wide risk assessment capable of illustrating probability and consequence and subsequently providing a tangible measure of risk. The landscape level risk assessment process should therefore be enhanced with detailed individual property assessments of existing properties and proposed developments by qualified professionals.

Chelan County Fire District 1 already conducts individual assessments of existing properties. In cooperation with Chelan County Fire District 1, the City should implement a formalized program to assess the risk of individual existing properties and future developments (through the development review process) in order to accurately assess and track the risk of consequence (structure vulnerability) using qualified professionals. Ideally, this would involve detailed risk assessments on both existing properties and future developments; however, recognizing that this may create staff capacity issues, the current “windshield” (as opposed to detailed) assessments on existing properties being performed by the Chelan County Fire District 1 staff will provide valuable interim data.

The ranked results (e.g. Very Low, Low, Moderate, High and Very High) of these individual property assessments can be simply added as an additional attribute to each parcel in the City’s existing property information spatial database, which in turn can be spatially displayed. This allows for simple tracking, metrics query and updating of parcel risk as the assessments are refined or change.

The resulting comprehensive delineated spatial risk assessment should be used as a decision support tool for land use planning, zoning and code implementation. Typically, areas of higher risk would be subject to the most stringent planning standards and codes with appropriate scaling through areas of decreasing risk (See Recommendation 3: *Update Wildland-Urban Interface Regulations* for further details).

Tips and Additional Support

Undertaking Site-Specific Risk Assessments

There are a number of private and publicly available site-specific hazard and risk assessment systems available to use as templates for a local program. Ideally, site-specific assessments should focus on assessing detailed and specific structure (present or expected future) vulnerabilities as well as the immediate surrounding site conditions out to 100 feet from the structure. This will include adjacent fuel (landscaped vegetation, natural vegetation and other structures), topography, high fire hazard situations (railway, industry, etc.) and historical fire occurrences. Property owner engagement and education is a key component to this process as part of initiating and maintaining mitigation.

Addressing Staff Capacity

Undertaking site-specific assessments requires expertise and time, and may be limited by City staff capacity and expertise. Requiring developers and landowners to include a standardized assessment by a qualified professional in their application materials can achieve assessment goals without placing an increased burden on City resources.

Additionally, Chelan Fire District 1 should also consider having on duty fire staff (e.g. engine crews) conduct “windshield” assessments (as opposed to the above detailed assessments) of key vulnerabilities in existing neighborhoods to support this effort. As an added benefit, this option can provide opportunities for public outreach as well as helping fire operations staff gain a further understanding of wildfire mitigation planning and identify potential wildfire response challenges that were not previously considered (i.e. apparatus access challenges). As existing properties are re-developed or improved detailed assessment data will become available through the permitting process.

Finally, the City should consider implementing a voluntary detailed property assessment program (see Additional Resources below).

Prioritizing and Monitoring the WUI Risk Assessment

Wildfire planning policies and regulation are reliant on the WUI assessment for implementation; therefore, a priority should be placed on completing and adopting the comprehensive WUI risk assessment. An individual property assessment program can follow at a later date to further enhance the assessment. The WUI risk assessment should be updated at least every 5 years, or sooner if significant changes have occurred that may affect the assessment, such as wildfires, forest structure changes, or new development.

Additional Resources

Several communities are moving in the direction of implementing comprehensive approaches to their WUI mapping to inform planning and mitigation requirements. For two examples at the city and county scale, refer to:

- Colorado Springs, CO has a publicly available [city wildfire risk map](#) that shows individual parcels and their corresponding rating.
- Eagle County, CO [utilizes a countywide risk assessment](#) (similar to the one developed for Wenatchee) to determine when site-specific assessments are necessary for development. In addition, they have recently implemented a [voluntary property assessment program](#).

Recommendation 3: Update Wildland-Urban Interface (WUI) Regulations

Update the current wildland-urban interface (WUI) regulations to reflect current science and standards, appropriately address the assessed WUI risk, and provide regulatory strength to other City codes, plans and policies.

Why This Recommendation Matters

Overview

There have been four significant fire events within the City of Wenatchee in recent history, with two of these events resulting in structure loss. The 1992 Castlerock Fire resulted in the loss of 17 homes and 15 apartment units, while the 2015 Sleepy Hollow Fire extended well into the urban core of Wenatchee, destroying 29 homes and three downtown commercial buildings.

Unmitigated, these structures are considered a fuel type (i.e. built fuels) that interacts with vegetation (i.e. wildland fuels), topography, and weather to influence the behavior and spread of fire. The primary factors that resulted in the loss of these structures were the susceptibility of a site (the structure and immediate surroundings) to ignition from the radiant or convective heat produced by immediately adjacent fuels (wildland and built fuels), and embers produced by adjacent and distant wildland and built fuels.

The influence of these factors on structure ignition vulnerability are supported through research and post-fire investigation validation from across North America. This has resulted in the development of the Home Ignition Zone (HIZ) concept. HIZ is described by key characteristics of structure design and materials, and the composition and arrangement of adjacent fuels (wildland and built fuels) present within 100 feet of a structure. These characteristics determine the structure's vulnerability to ignition. Other community features and design standards can influence the general ignition vulnerability of a community as well as the response and evacuation capabilities, and contribute to the overall wildfire resiliency of the community. The HIZ term can be misleading, as the science, concepts and best management practices that support that are encompassed in the HIZ term can be applied to commercial and public structures as well; therefore, for clarification this document will refer to the Structure Ignition Zone (SIZ).

Wenatchee Wildland-Urban Interface Standards

The current Wenatchee Chapter 3.36 Wildland-Urban Interface (WUI) Standards (adopted in October 2015) provide direction on mitigating the design and construction ignition vulnerability of both new structures and additions to existing structures in the “primary zone...immediately adjacent to land with natural vegetation without fuel breaks.” They also provide direction for limited mitigation on property and structures “located to the east of the primary zone and within 1,500 feet of the interface line.” However, there are several gaps or weaknesses with the WUI Standards, including:

- The WUI Standards do not address the full extent of the SIZ concept, nor does it specifically address community features.

- The WUI Standards designate the code official (Fire Chief or designee) with the “final authority in determining which properties shall be affected by the WUI zone designation”; however, there is no clear, defensible WUI definition, or a risk map (see Recommendation 2 *Redefine the wildland-urban interface (WUI) and implement a WUI risk assessment program*) reflective of the assessed wildfire hazard or risk necessary to support the code official’s decision.
- The WUI Standards do not address new or existing structures located *outside* of the currently defined primary zone, or address these structures beyond the currently defined secondary zone (to the east of the primary zone and within 1,500 feet of the interface line).
- Finally, although the current WUI Standards includes the following statement “Should any provision within this chapter conflict with any other provision of the Wenatchee City Code, then this chapter shall control,” language in other Wenatchee codes and planning documents referring to the WUI Standards is either absent, or in conflict.

Strengthening Wenatchee’s WUI Standards and aligning them with other planning documents will enhance the City’s approach to WUI risk reduction by:

- Providing specific regulatory direction in structure mitigation beyond the currently defined WUI.
- Addressing the ignition vulnerability factors identified in the risk assessment process.
- Providing a defensible decision support tool for land use planners and code officials by linking the WUI Standards to a WUI definition and risk map that reflect the assessed risk.
- Minimizing conflicts throughout the Wenatchee planning and code enforcement system.
- Adding regulatory strength to wildfire policies and wildfire risk maps.

Implementation Guidance

Strengthen Current Wenatchee WUI Standards

Wenatchee WUI Standards should be updated to further address the following community and property vulnerabilities:

- General Community Features and Design: topography, vegetation, density and layout, open space, urban parks, water sources and trails, utilities, roads, bridges, access, and other community amenities.
- Structure Ignition Zone, Including the Structures: roof assembly, dormers, roof and soffit vents, gutters and downspout assembly, structure walls, windows, and vegetation management for zones extending out to 100 feet from both residential and commercial structure(s) in the primary and secondary zones.
- Other Structure Ignition Zone Features: decks, fences, attachments, outbuildings, setbacks, adjacent uses, and slopes on or adjacent to both residential and commercial properties.

The following table (Table 3.1) outlines specific recommended revisions and updates to sections within the Wenatchee Chapter 3.36 WUI Standards. These recommendations will better align Wenatchee's WUI Standards with national standards.

Table 3.1	
Section	Recommended Update
3.36.000 Scope and objective (1) Scope	<p>UPDATE the wildland-urban interface (WUI) boundary as defined by the exposed edge of developed property to unbroken tracts of natural vegetation that constitute the risk of wildland fires</p> <p>TO the wildland-urban interface is defined as any developed area where conditions affecting the combustibility of both wildland and built fuels allow for the ignition and spread of fire through the combined fuel complex.</p>
3.36.010 Wildland-urban interface zone designation	<p>UPDATE The determination shall be made based on the property's location and exposure to large tracts of natural vegetation.</p> <p>TO The determination shall be made based on the property's assessed risk as displayed on the risk map.</p> <p>UPDATE Property and structures immediately adjacent to undeveloped land with natural vegetation without fuel breaks establish the interface line or primary zone and are subject to all of the provisions of this chapter.</p> <p>TO Property and structures that are located within moderate or above wildland, intermix or interface risk zones establish the primary zone and are subject to all of the provisions of this chapter.</p> <p>UPDATE Property and structures located to the east, or the developed side, of the primary zone and within 1,500 feet of the interface line are included in the secondary zone.</p> <p>TO Property and structures within the City limits that are not located within the moderate or above wildland, intermix or interface risk zones are included in the secondary zone.</p>
3.36.020 Authority of code official	<p>UPDATE The chief of the Wenatchee fire department or his/her designee (hereinafter "code official") is hereby authorized to enforce the provisions of this code.</p> <p>TO The director of the department of community and economic development, or his or her designee (hereinafter "code official") is hereby authorized to enforce the provisions of this code.</p> <p>UPDATE ICC International Wildland-Urban Interface Code and NFPA 1144 Standard for Reducing Structural Ignition Hazards from Wildland Fire, 2008, or as later adopted.</p> <p>TO ICC International Wildland-Urban Interface Code, 2015, and NFPA 1144 Standard for Reducing Structural Ignition Hazards from Wildland Fire, 2013, or as later adopted.</p>

3.36.030 Special building construction regulations (1) Exceptions	REMOVE <i>Detached accessory structures not exceeding 200 square feet in floor area.</i>
3.36.100 Unenclosed under-floor protection in the primary zone (1) Exception	<p>UPDATE (Title) <i>Unenclosed under-floor protection in the primary zone</i> TO <i>Unenclosed under-floor protection in the primary zone and secondary zone</i></p> <p>UPDATE <i>Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour fire-resistance-rated construction or heavy timber construction.</i> TO <i>Complete enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour fire-resistance-rated construction or heavy timber construction and the surface below the under-floor area is a non-combustible surface which extends for 5 feet beyond the outer perimeter of the unenclosed floor space.</i></p>
3.36.110 Appendages and projections in the primary zone	<p>UPDATE (Title) <i>Appendages and projections in the primary zone</i> TO <i>Appendages and projections in the primary zone and secondary zone</i></p> <p>ADD <i>The surface below the under-floor area must be a non-combustible surface which extends for 5 feet beyond the outer perimeter of the unenclosed floor space.</i></p>
3.36.130 Vents in the primary zone	<p>UPDATE (Title) <i>Vents in the primary zone</i> TO <i>Vents in the primary and secondary zones</i></p> <p>UPDATE <i>Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed one-quarter inch (6.4 mm).</i> TO <i>Such vents shall be covered with noncombustible corrosion-resistant mesh with openings not to exceed one-eighth inch (3.2 mm).</i></p>
3.36.140 Detached accessory structures in the primary zone	<p>UPDATE (Title) <i>Detached accessory structures in the primary zone</i> TO <i>Detached accessory structures in the primary zone and secondary zone</i></p> <p>UPDATE <i>Detached accessory structures greater than 200 square feet in floor area located less than 50 feet (15,240 mm) from a building containing habitable space shall have exterior walls</i></p>

	<p><i>constructed with materials approved for a minimum of exterior one-hour fire-resistance-rated construction, heavy timber, log wall construction or constructed with approved noncombustible materials on the exterior side.</i></p> <p>TO <i>All Detached accessory structures located less than 50 feet (15,240 mm) from a building containing habitable space shall have exterior walls constructed with materials approved for a minimum of exterior one-hour fire-resistance-rated construction, heavy timber, log wall construction or constructed with approved noncombustible materials on the exterior side.</i></p> <p>UPDATE <i>(1) Exception. The enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour fire-resistance-rated construction or heavy-timber construction.</i></p> <p>TO <i>(1) Exception. The enclosure may be omitted where the underside of all exposed floors and all exposed structural columns, beams and supporting walls are protected as required for exterior one-hour fire-resistance-rated construction or heavy-timber construction and the surface below the under-floor area is a non-combustible surface which extends for 5 feet beyond the outer perimeter of the accessory structure.</i></p>
<p>3.36.160 Defensible space in primary zone.</p>	<p>UPDATE (Title) <i>Defensible space in primary zone</i></p> <p>TO <i>Defensible space in the primary zone and secondary zone</i></p> <p>UPDATE <i>All newly constructed structures in the primary zone shall be protected by a 30-foot defensible space from undeveloped land.</i></p> <p>TO <i>All newly constructed structures in the primary zone shall be protected by a 100-foot defensible space from undeveloped land, or to the property boundary, whichever is less. All newly constructed structures in the secondary zone shall be protected by a 30-foot defensible space, or to the property boundary, whichever is less. The defensible space shall be achieved through the submission of a vegetation mitigation plan approved by the code official.</i></p> <p>ADD <i>All undeveloped or vacant land shall protect adjacent newly constructed and existing structures with a 100-foot defensible space, or across the entire property, whichever is less. The defensible space shall be achieved through the submission of a vegetation mitigation plan approved by the code official.</i></p> <p>ADD <i>All newly constructed structures in the primary and secondary zones shall be protected by a 5-foot non-combustible surface extending from any exterior walls of the structure and the outer perimeter of any appendages and projections.</i></p>

	<i>ADD (1) Exception. The 5-foot non-combustible surface may be omitted where the exterior walls of the structure and the appendages are constructed with approved non-combustible materials.</i>
ADD Section Gutters in the primary zone and secondary zone	ADD Vinyl gutters are prohibited in primary and secondary zones.
ADD Section Exterior windows in the primary zone and secondary zone	ADD Exterior windows on all exposure sides shall be rated, tempered glass, multilayered glazed panels, glass block or have a fire protection rating of not less than 20 minutes.

Align WUI Standards with City Regulations and Policies

Updates to the Wenatchee WUI Standards will require further alignment and reconciliation with existing and future City codes and plans. This includes updates in *Title 10. Zoning* where existing references to wildfire mitigation are required (e.g., development standards for land use districts, such as Residential Foothills Low) and *Title 11. Subdivisions* (e.g., updated design standards for fire protection). Other examples include:

- **City Code Chapter 3.12 Storage of Combustible Material** provides direction for the storage of *empty wooden boxes, bins, pallets, cartons and/or trays kept within the city limits which are not stored inside a building.*

Recommendation: Update Chapter 3.12 Storage of Combustible Material with incorporated WUI structure and defensible space standards to regulate structure hardening and distances of stored combustibles from the main structures.

- **City Code Chapter 3.20 Flammable Materials** provides direction for mitigating the presence of *any dry weeds, grass or other vegetation or any other debris capable of burning or other material constituting a fire hazard* on a property.

Recommendation: Update Chapter 3.20 Flammable Materials to align with WUI Standards for defensible space to regulate the presence of flammable materials on a property.

- **City Code Chapter 10.62 Landscaping and Screening** provides requirements to enhance *aesthetics and environmental benefits, improve land use compatibilities through separation and screening, and increase public safety.*

Recommendation: Update Chapter 10.62 Landscaping and Screening to include wildfire risk reduction as a stated objective and include references to WUI Standards for defensible space, similar to references contained elsewhere (e.g., Chapter 11.20 Subdivision Design Standards).

In addition, Wenatchee should review the Comprehensive Plan, Wenatchee Foothills Trail Plan, and Wenatchee Habitat Plan to determine applicable sections to include references to their WUI Standards. For example, the Wenatchee Habitat Plan should be updated to link ecosystem-based fire management policies with defensible space requirements in areas adjacent to developments for an integrated approach at reducing risk while addressing ecosystem objectives. The Wenatchee Foothills Trails Plan should be updated to link policies to the WUI Standards so that the full spectrum of defensible space requirements can be met where lands directed by this plan are adjacent to WUI primary and secondary zones. See *Recommendation 4. Update Comprehensive Plan to Address Wildfire* for more information on linkages with the Comprehensive Plan.

Identify Conditional Uses in the WUI

The current WUI designation connects the WUI with residential areas. Other City Code Chapters specifically address combustible and flammable materials. However, as the definition and applicability of the WUI changes to reflect a more comprehensive understanding of risk, additional uses may be subject to WUI mitigation standards. The City should also develop a list of uses that pose a safety threat if permitted within specified WUI areas, such as large congregations or assemblies of people (e.g., places of worship, clubs, government offices, community centers, schools). For those additional uses that may contribute to WUI risk, require WUI mitigation standards as a condition of approval.

Tips and Additional Support

Outreach & Communication

Creating an effective outreach and communication strategy can further enhance public buy-in. Highlighting existing development examples can be useful to illustrate what wildfire mitigation looks like (e.g., the Broadview post fire re-build development, other design elements within existing neighborhoods that use fire-resistant building construction or vegetation management). As the City establishes a Wildfire Council, or CWPP Steering Committee, this group can help promote and disseminate information. Following adoption of any new materials the city should prepare explanatory materials for applicants which summarize how the new policies and regulations are administered.

Coordinate Among City, County and other Agencies

Other City departments will be critical to developing policies and initiatives with wildfire in mind. For example, working with the Wenatchee Parks, Recreation and Cultural Services department to develop common and coordinated policies and language to WUI risk and mitigation will ensure the city's approach to open space is comprehensive and includes wildfire along with other management objectives. The City can consider a checklist for all agencies to refer to when initiating new plans or projects that may be affected by, or have an impact, on community wildfire risk. In addition, coordinating with County efforts will help avoid future scenarios where adjacent neighborhoods take drastically different approaches to WUI risk reduction.

Utilize Technical Resources

Technical resources are frequently updated, and references within the Wenatchee WUI Standards should reflect the latest guidance available (see Additional Resources below).

Additional Resources

International Code Council Wildland-Urban Interface Code

The International Code Council Wildland-Urban Interface Code 2015 is available for [viewing and purchase online](#).

NFPA Technical Standards for the Wildland-Urban Interface

Technical standards are also available through the National Fire Protection Association:

- [1141: Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas](#) (standards focus more on subdivision);
- [1142: Standard on Water Supply for Suburban and Rural Firefighting](#) (standards focus on water supply)
- [1144: Standard for Reducing Structure Ignition Hazards from Wildland Fire](#) (standards focus more on building ignitions).

Recommendation 4: Update Comprehensive Plan to Address Wildfire

Update the City of Wenatchee Comprehensive Plan to include wildfire information, goals and policies that acknowledge and plan for wildfire's potential impacts on the City's natural environment, built environment, social resilience, and economy.

Why this Recommendation Matters

Overview

A comprehensive approach to addressing wildfire's role in the natural environment, built environment, social resilience, and economy allows the City to make informed planning decisions. It also ensures that the City defines its values and risk tolerance, which signals to the public, industry professionals, and other stakeholders, what is appropriate to guide future development and environmental management objectives.

The City of Wenatchee's current Comprehensive Plan includes only minimal references to wildfire, and does not reflect recent wildfire events which are influencing community-based planning decisions. Incorporating appropriate language on wildfire, including new goals, policies, and references will guide future decisions to ensure environmental, social and economic goals are met. This will also strengthen ties to existing and future wildland-urban interface (WUI) regulations.

Implementation Guidance

The following sub recommendations are based on the current organization of the Comprehensive Plan and do not reflect a prioritization of revisions. Multiple elements are addressed below to accomplish a thorough integration of wildfire into the Comprehensive Plan update. As an alternative, staff may choose to cluster *all* wildfire goals and policies into one element, and add references to that element throughout the Comprehensive Plan. Staff may also wish to further expand the scope and detail of each policy suggestion below.

1. Update Land Use/ Urban Growth Area Element to Include Wildfire Risk Map

Developing goals and policies that consider wildfire risk as part of future growth areas and land use decisions will promote community resilience, and pave the way for additional wildfire regulations. Policies should address:

- **Update the Wildland-Urban Interface (WUI) Code to incorporate data from the wildfire risk map and revised definition of the WUI.** This policy reflects *Recommendation 2 Redefine the wildland-urban interface (WUI) and implement a WUI risk assessment program*, which redefines and expands the city's current approach to the geographic location of the wildland-urban interface (WUI). The WUI currently has regulatory authority through the City's Municipal Code, which is implemented as new projects are developed. The forthcoming risk map stratifies areas of wildfire hazard based

on topography, fuels and historical weather influences, and includes areas within ember zones. The city must also establish specific thresholds which determine when mitigation is required and/or land uses are restricted, such as:

- Identify and restrict areas with a risk rating of very high from future development. Ensure this information is linked to the Future Land Use Map (FLUM) to determine which areas are targeted for development, and any additional constraints that exist. For areas where new growth will occur, but subject to WUI Standards (e.g., of moderate risk or above), consider density limitations, clustered development patterns, and/or the ability to transfer development rights to areas with lower risk. These planning decisions should ultimately be based on the City's determination of an acceptable level of risk.
 - Identify areas where infill and redevelopment will occur and require mitigation, based on the criteria set forth in the WUI Standards.
 - Identify and require existing properties based on criteria set forth in the WUI Standards to perform mitigation when undergoing renovations, retrofits, or other improvements that trigger a permit. Mitigation standards should be consistent with those required for new development in the WUI Standards.
 - Require mitigation on land uses that contribute to WUI risk, such as the storage of combustible materials, in areas based on the criteria identified in the WUI standards.
 - Ensure ember zones are also considered as a factor in the mitigation requirement identification process.
- **Incorporate future risk modeling efforts into WUI planning activities.** This policy supports future risk assessment efforts to enhance and expand the scope of wildland-urban interface (WUI) standards for development, and should continue to inform the land use planning process. See Recommendation 2 for further detail.
 - **Include wildfire activities as part of Coordinated Planning.** Future activities such as the development of a Community Wildfire Protection Plan or other wildfire planning activities that require additional stakeholders, such as Fire Districts and Chelan County, should be added to any Coordinate Planning or similar sections (e.g., Comprehensive Plan, page 12 subsection on Coordinate Planning). This policy encourages coordination among those agencies with influence over cross-jurisdictional WUI outcomes. This policy also supports the development of a future City-specific Community Wildfire Protection Plan (see Recommendation 1).

2. Update Transportation Element to Promote Access and Evacuation Routes

Wildfire is briefly mentioned in the Transportation Element in relation to the Foothills and Canyons (Comprehensive Plan, page 28), but could be further expanded to identify and promote emergency access and egress routes throughout the City. Increasing access improves emergency response capabilities, and improves public safety by providing the opportunity for residents to move away from harm while avoiding conflict with responding resources. Additionally, alternative access can be strategically leveraged to optimize risk reduction (e.g., designing access

points to work as fire breaks, or control lines and emergency access routes). Policies should address:

- **Update of the Circulation Map to improve access and egress routes.** The circulation map should be updated to address the following:
 - Identify secondary access to ensure there is adequate access and egress in neighborhoods located within moderate wildfire risk areas. This applies to both current and future areas of development (this policy should reference the wildfire risk map).
 - Improve road design standards for safe access and egress. This policy should focus on adequate standards required for resident and fire fighter safety, including road width, grade, and type. These standards should conform to NFPA 1141, ICC WUI code, or similar fire protection standards for road design.
- **Explore other alternatives to improve emergency access and response.** Explore how existing and future access routes, including trails, can be appropriately leveraged for emergency response, such as control lines or strategic fuel breaks. Use right of entry agreements for emergency access with large property owners to identify temporary emergency evacuation routes. Identify areas of public refuge in the event that emergency routes are temporarily unavailable.

3. Update Housing Element to Promote Wildfire-Resilient Housing Stock

Safe and resilient housing stock is a key component of any community. Recent fires have resulted in home losses and threatened neighborhoods throughout the City, underscoring the importance of utilizing fire-resistant construction methods—both for future *and* existing development. Policies should address:

- **Link fire-resistant housing construction to WUI risk.** Utilize the wildfire hazard map to determine where fire-resistant construction standards are required for existing housing stock (i.e., through a renovation, expansion or retrofit permit process) and new home construction.
- **Include wildfire risk as a criterion for housing density decisions.** Compact housing and cluster development in primary and secondary interface zones should comply with WUI Standards. Conversely, lower density (or large lot) development in primary and secondary interface zones should comply with WUI Standards.
- **Consider additional structures at risk.** The Housing Element focuses on residential structures. In this or another appropriate element, the City must also address other structures in the primary and secondary WUI zones, such as commercial properties. These structures should also adhere to the same mitigation WUI Standards requirements for residential (based on the criteria in the WUI Standards). See #1 above.

4. Update Parks, Recreation, and Open Space Element to Include Multiple Management Objectives

This element should consider two facets in the planning and management of parks, recreation and open space: the ecological role of wildland fire, and the risk of wildfire to parks, recreation, open space values and adjacent uses. Policies should include:

- **Coordinate with other land management agencies.** This will include stakeholders such as land trusts, open space, county stakeholders, fire districts—many of which will likely be identified through the City’s future CWPP.
- **Promote the alignment of ecological restoration and ecological-based fire management with wildfire mitigation strategies to manage parks and open spaces.** Supporting wildfire mitigation strategies can raise awareness of wildfire’s role and impacts on local parks.

5. Update Natural Environment Element to Include Wildfire Narrative, Goals and Policies

The Natural Environment element is the most logical placeholder for adding wildfire content that includes wildfire history and wildfire risks. This language does not need to be extensive, rather it should acknowledge fire’s natural role in the area, local wildfire history and risk, and references to other plans such as the County’s Multi-Hazard Mitigation Plan and any existing or future Community Wildfire Protection Plans (CWPPs). Policies should address:

- **Promote ecosystem-based wildland fire planning and wildfire risk reduction policies for critical/environmentally sensitive areas.** Similar to the Parks, Recreation and Open Space Element, this element should consider ecosystem-based fire management strategies to protect critical areas. This may include encouraging prescribed fire to manage natural areas, ecological functions, and habitats/species which are dependent on “good” fire.

6. Update Utilities Element to Recognize Adequate Fire Flow Needs

The Chelan PUD and the City provide water service in the Wenatchee Urban Growth Area, providing fire protection for both commercial and residential areas of the city. The City and PUD have worked diligently since the 1992 Castlerock fires to improve fire flow and fire flow storage by adding reservoirs, upgrading transmission mains, and developing water system interconnects for backup. These improvements proved to be effective during the 2015 Sleepy Hollow fire, where fire flow was sustained throughout the entire event at levels beyond their design capacity. Policies should address:

- **Continue to coordinate between the City, County, and PUD to ensure adequate fire flow and fire storage is available in the WUI.** Development typically installs fire hydrants and water mains consistent with fire flow standards as the city expands. The PUD is considering some additional storage and transmission improvements in the Number 2 Canyon area to bolster fire protection capacity, but in general, the backbone infrastructure throughout the urban area is sized appropriately to serve fire response needs.

7. Update Additional Elements to Increase Community Wildfire Resilience

While several key elements throughout the Comprehensive Plan will require wildfire specific policies, (as described above), other current and future elements could also benefit from references to wildfire. For example:

- **Economic Development:** Acknowledge the potential economic impacts of wildfire on the City, promote engagement of local businesses in public education and outreach, pre-disaster planning, and post-disaster recovery activities.
- **Cultural and Historic Resources:** Evaluate unique housing stock, such as historic properties, in terms of wildfire risk. Inventory and assess any historic structures that may require special mitigation to promote resilience during a wildfire event.
- **Community Design:** Ensure architectural and place making features (e.g., combustible wooden attachments, landscaping and signage, street furniture) in high wildfire risk areas promote a reduction in the likelihood of structural ignition.
- **Public Facilities and Services:** Require new developments in moderate or above WUI risk zones to include the design and layout of public facilities (e.g., schools, parking, community facilities, sports fields) as public refuge areas with multiple access and egress routes. Incorporate WUI risk reduction as a criterion for future capital facility investments in pre-identified WUI risk zones subject to WUI Standards.
- **Social Resilience:** Acknowledge the potential social impacts of wildfire on the City, such as post-traumatic stress disorders, acute and chronic health issues, community fragmentation through negative impacts on key individuals (community leaders, police, doctors, teachers, etc.) and promote engagement of local businesses in public education and outreach, pre-disaster planning, and post-disaster recovery activities.

Tips and Additional Support

Identify Mechanisms to Fund and Maintain Mitigation Efforts

Mitigation can be costly and often requires long term maintenance, particularly when planning activities related to constructing and maintaining access routes, or performing vegetation management in open space and near utilities. The City should identify potential mechanisms to fund and maintain mitigation efforts. This may include expanding the impact fee ordinance to include any new development which requires secondary access for emergency response, and development agreements to ensure hazardous vegetation is managed over time. This would be applicable to: Transportation, Parks and Open Space, Utilities and Public Facilities and Services.

Consider Incremental Improvements

Consider incremental improvements when necessary. For example, where new access may be desired or required in the future, allowing for incremental improvements that eventually meet the desired standard may be the best immediate alternative based on financing options (i.e., consider adding a secondary gravel road for emergency access that meets minimum standards for fire apparatus access and public evacuation prior to funds becoming available for a paved road). All incremental alternatives should be discussed in consultation with other departments, such as engineering and fire.

CPAW Definitions

The following list of definitions is intended to aid understanding of terms associated with CPAW recommendations.

Built Fuels- Man-made structures (buildings and infrastructure).

Burn Probability- The probability or effect of a wildland fire event or incident, usually evaluated with respect to objectives.

Burn Severity- A qualitative assessment of the heat pulse directed toward the ground during a fire. Burn severity relates to soil heating, large fuel and duff consumption, consumption of the litter and organic layer beneath trees and isolated shrubs, and mortality of buried plant parts.

Combined Fuel Complex- the mixed horizontal or vertical fuel structure of both wildland fuels and built fuels within an area of interest.

Community Based Ecosystem Management- With an emphasis on local stakeholder participation, allowing the local community to manage their ecosystem based on the unique characteristics of an area.

Community Wildfire Protection Plan (CWPP)-Established by the 2002 Healthy Forest and Restoration Act, A CWPP is a plan that identifies and prioritizes areas for hazardous fuel reduction treatments on Federal and non-Federal land that will protect one or more at-risk communities and essential infrastructure and recommends measures to reduce structural ignitability throughout the at-risk community. A CWPP may address issues such as wildfire response, hazard mitigation, community preparedness, and structure protection.

Convection Heat- The movement caused through the rising of a heated gas or liquid.

Conduction Heat- Transfer of heat through direct contact of material.

Critical Facilities- FEMA defines critical facilities as “facilities/infrastructure that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police, fire stations, and hospitals”. In addition, CPAW recognizes emergency water pumping stations, egress routes, communication facilities, and backup power supplies as critical facilities.

Ecosystem Based Fire Management- The incorporation of the natural or desired ecological role of fire into the management and regulation of community’s natural areas.

Defensible Space- the area around a structure where flammable vegetation and objects are managed to increase the chance a structure will survive a wildfire with or without active protection. This space is wide enough to prevent direct flame impingement and reduce the amount of radiant heat reaching the structure. The defensible space for each structure varies, depending on the type of vegetation and topography.

Effects- The anticipated benefits and losses associated with exposure to a hazard or event, in this case fire.

Embers- A small piece of burning material that can be thrown into the air due to the convective heating forces of a wildfire. Larger embers and flammable materials have the ability to sustain ignition through transport.

Exposure- The contact of an entity, asset, resource, system, or geographic area with a potential hazard. Note: In incident response, fire responder exposure can be characterized by the type of activity.

Fire Adapted Communities -A group of partners committed to helping people and communities in the wildland urban interface adapt to living with wildfire and reduce their risk for damage, without compromising firefighter or civilian safety.

Fire Effects - The physical, biological, and ecological impacts of fire on the environment.

Fire Intensity- Commonly referred to as fire line intensity, this is the amount of heat energy that is generated by burning materials.

Firewise – Program teaches people how to adapt to living with wildfire and encourages neighbors to work together and take action to prevent losses. The program encourages local solutions for wildfire safety by involving homeowners and others in reducing wildfire risks by fostering defensible space and resilient structures for homes and communities.

Frequency- The number of occurrences of an event per a specified period of time.

Hazard - Any real or potential condition that can cause damage, loss, or harm to people, infrastructure, equipment, natural resources, or property.

Hazard Reduction- Coordinated activities and methods directed to reduce or eliminate conditions that can cause damage, loss, or harm from real or potential hazards.

Home Ignition Zone- The characteristics of a home and immediate surrounding area when referring to ignition potential during a fire event.

Infrastructure- the basic physical structures and facilities (e.g., buildings, roads, and power supplies) needed for the operation of a community.

Prescribed Fire- A planned controlled wildland fire that is used to meet a variety of objectives for land managers.

Radiation Heat- Transmission of heat through waves or particles.

Residual Risk – Risk that remains after risk control measures have been implemented.

Resilience- The ability to recover from undesirable outcomes, both individually and organizationally.

Risk- A measure of the probability and consequence of uncertain future events.

Risk Acceptance- A strategy that involves an explicit or implicit decision not to take an action that would affect all or part of a particular risk.

Risk Assessment- A product or process that collects information and assigns values (relative, qualitative, quantitative) to risks for the purpose of informing priorities, developing or comparing courses of action, and informing decision making.

Risk Avoidance- A strategy that uses actions or measures to effectively remove exposure to a risk.

Risk Based Decision Making- A decision making process that relies on the identification, analysis, assessment, and communication of wildland fire risk as the principal factors in determining a course of action to improve the likelihood of achieving objectives.

Risk Communication- An exchange of information with the goal of improving the understanding of risk, affecting risk perception, or equipping people or groups to act appropriately in response to an identified risk.

Risk Management- A comprehensive set of coordinated processes and activities that identify, monitor, assess, prioritize, and control risks that an organization faces.

Risk Mitigation- The application of measure to alter the likelihood of an event or its consequences.

Risk Perception- Subjective judgment about the characteristics and magnitude of consequences associated with a risk.

Risk Reduction- A decrease in risk through risk avoidance, risk control, or risk transfer.

Risk Transfer- A strategy that uses actions to manage risk by shifting some or all of the risk to another entity, asset, resources, system, or geographic area.

Values-At- Risk- Those ecological, social, and economic assets and resources that could be impacted by fire or fire management actions.

Vulnerability- The physical feature or attribute that renders values susceptible to a given hazard.

Wildfires- Unplanned wildland fires resulting in a negative impact.

Wildland Fire- Wildland Fire - Any non-structure fire that occurs in vegetation or natural fuels. Wildland fire includes prescribed fire and wildfire.

Wildland Fuels- All vegetation (natural and cultivated).

Wildland Urban Interface (WUI)- Any developed area where conditions affecting the combustibility of both wildland and built fuels allow for the ignition and spread of fire through the combined fuel complex.

Wildland Urban Interface Hazard- Combustibility of the wildland or built fuels, fuel type or fuel complex.

Wildland Urban Interface Risk- the WUI hazard accounting for factors that contribute to the probability and consequences of a WUI fire.

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