

4) ***Fire Risk Mitigation Strategies*** – This section is divided into four areas of focus. Mitigation strategies are prioritized by zone, with the highest priority being the structure ignition zone and working outward to the Extended Wildland Urban Interface (WUI). There are numerous factors which contribute to homes and communities being at risk to loss from wildfires, including hazardous fuel conditions. Many factors are under the control of the resident, property owner, community, or County.

- **Mitigation strategies areas of focus:**

- A. Information, Education, and Planning**

- B. Reducing Structure Ignitability**

- C. Enhancing Suppression Capabilities and Public Safety**

- 1. Fire Protection

- 2. Access & Signage

- 3. Water Systems

- D. Hazardous Fuel Reduction**

- **Mitigation strategies prioritization by zone:**

- 1. Home Ignition Zone – 0-150 feet

- Home Zone 0-6 feet

- Yard Zone 6-30 feet

- Screen Zone 30-75 feet

- Forest Zone 75-150 feet

- 2. Community at Risk Zone – (Plumas County Communities at Risk map)

- 3. Adjacent Wildland Urban Interface (WUI) Zone - .5 mile around Community (Plumas County Communities Adjacent WUI map)

- 4. Extended Wildland Urban Interface (WUI) Zone- 1 mile around adjacent WUI. (Plumas County Extended WUI map)

The goal of this section is to:

- Identify situations and factors which place residences or communities at risk from wildfire, and suggest appropriate mitigation measure(s) to reduce that risk.

The objectives of this section are to:

- Identify mitigation measures by focus area and prioritize by zone. Focus is on public safety, firefighter safety, reducing structure ignitability, and reducing damage to other manmade and natural resources.
- Identify areas where collaborative efforts of local, state, and federal agencies can mitigate risks of structure ignitability, reduce hazardous fuels, and wildfire threats to communities.
- Support efforts of Plumas County, the County Fire Warden, county fire chiefs, county fire safe councils, California Department of Forestry & Fire Protection (CDF), US Forest Service, and other agencies to collaboratively implement mitigation measures and obtain funding assistance.

MITIGATION MEASURES BY FOCUS AREAS:

Focus areas are broken down into elements which contribute to the risk of homes and communities being lost to wildfire. A statement of the situation or issue has been presented, followed with a mitigation recommendation(s).

<i>Item</i>	<i>Focus Area</i>
A.	Information, Education, and Planning
	<i>Risk Condition:</i>
	<p>The Plumas County residents and communities have benefited from activities of fire safe councils, local fire departments, and local, state, and federal agencies. Funding for the councils has been provided by the National Fire Plan and the Secure Rural Schools and Community Self-Determination Act, Title II and Title III. With this funding there have been a number of successful programs to the benefit of county residents. Some examples are:</p> <ul style="list-style-type: none"> • Homeowner consultations • Evacuation planning • Elderly and disabled defensible space cleanup • Educational information and displays • Wildfire safety information provided and community meetings • Firewise workshops • Hazardous fuel reduction projects
Item	<i>Mitigation Measures:</i>
A. 1.	Fire Safe Council (FSC) growth - Continue to seek participation and funding to support fire safe council growth in Plumas County.
A. 2.	Expand information & education - residents - Fire safe councils, Plumas County, fire departments, and state and federal agencies should continue to provide and expand informational and educational programs for residents, property owners, and communities on what causes homes to ignite and burn in a wildland fire. Programs should also address: the need for safe access and signage, the importance of available water, adequate fire protection, and the critical role vegetation plays in wildland fire.
A.3.	Expand information & education - growth industry - Fire safe councils, Plumas County, fire departments, and state and federal agencies should provide educational information for developers, realtors, contractors, home builders, and building inspectors on methods to ensure structural and forest survival following a wildfire. Educational programs should focus on PRC 4290 and the State Fire Marshall WUI Standards, with focus on what causes homes to ignite and burn in a wildland fire. Programs should also address: the need for good home site location, safe access, and signage; and the importance of available water, adequate fire protection, and the critical role vegetation plays in wildland fire including how to make forests fire-resilient.
A. 4.	Evacuation planning - Many of the County’s communities have evacuation plans and identified evacuation assembly areas. Efforts by the County and fire safe councils should continue to work towards providing plans to those communities without one.

<p>A. 5.</p>	<p>Periodic updating of fire plan - Completion of the Community Fire Plan is only the first step in planning mitigation for wildland fire threat to homes and communities. This plan is a starting, not ending point. This plan should be considered a living document to be collaboratively reviewed and amended.</p>	
<p><i>Item</i></p>	<p><i>Focus Area</i></p>	
<p>B.</p>	<p>Reducing Structure Ignitability</p>	
	<p>Risk Condition:</p>	
	<p>First priority for mitigation actions are immediately around structures, the home ignition zone, usually up to 150 feet from the building. Research shows roofing, defensible space, and fire prevention measures within the home ignition zone play the largest role in home survival. This zone is critical to firefighter safety, as suppression resources may be providing structure protection to a residence in a wildland fire. The level of attention given to a residence in terms of its vulnerability to ignitions is controlled by the owners, often days, weeks, months & years before a fire event. Information & technology is available to keep homes in the wildland urban interface from igniting, burning up, and placing firefighters at risk. There is no need to wait until the fire occurs. In fact, history has shown that those who wait will lose.</p>	
<p>B.1.</p>	<p>Existing structures & attachments - Strengthen building standards for construction, replacement activities, and enforcement of compliance for existing residences and properties to make them less prone to loss from a wildfire due to embers, radiated heat, or surface fire spread.</p>	
<p><i>Item</i></p>	<p><i>Risk Condition:</i></p>	<p><i>Mitigation Measures:</i></p>
<p>B.1.a.</p>	<p>Roofing - Efforts should be made to eliminate all wood shake roofs in Plumas County. Shake roofs are a leading cause of home loss in wildfires. Presently homeowners in Plumas County are allowed to replace up to 50% (as repair) of an existing roof per year. This has allowed a continuation of wood shake roofs in the county.</p> <p>Research show that homes with non-combustible roofs and clearance of at least 30-60 feet have a 95% chance of survival in a wildfire.</p> <p>Currently county & city codes do not allow wood shake roof for new construction.</p>	<p>1) Educate resident on importance of replacing wood shake roofs - Educational efforts should be made to eliminate shake roofing.</p> <p>2) Consider modifying county & city code measures which may include, but not be limited to:</p> <p>a) Limit replacement of shake roofs - It may be possible to stop this practice by reducing replacement standards (e.g. from 50% to not exceed 10-15%).</p> <p>b) “Reduced or No Fee” permits for replacement of shake roofs - investigate a “reduced or no fee” permit for residents that change from a wood shake to a non-combustible roof.</p> <p>c) Replacement of shake roofs upon sale of a home - Expedite the elimination of wood shake roofs by requiring replacement upon sale.</p>

		3) Financial assistance program for wood shake roof replacement - Continue Plumas County's financial assistance program for wood shake roof replacement through Plumas County Housing Authority and Community Development Commission for qualifying individuals.
Item	Risk Condition:	Mitigation Measures:
B.1.b.	Vent openings - Provided adequate defensible space is maintained, screening of vent openings with steel screens will prevent embers (during the ember blizzard that comes with a wildfire) from entering into attics and crawl spaces. Currently standards exist in the county and city for new construction, but not older structures.	1) Educate resident on importance of steel vent screening - Educational efforts should be made to insure steel screening of all vent openings. 2) Explore incentives for screening - Explore incentives for homeowners to encourage steel screening of vent openings. 3) Consider modifying county & city code measures which may include, but not be limited to, requiring steel screening of vent openings upon sale - Expedite the replacement by requiring steel vent screening upon sale.
B.1.c.	Decks - Provided adequate defensible space is maintained, most solid wood siding is fire resistant enough to withstand the short term heat load. Then next greatest threat from decks is firefighter safety. Many new materials (synthetics) ignite more easily than wood and have a rapid structural collapse when subjected to high heat loads, creating a situation where firefighters could fall through. Currently no standard exists in the county or city.	1) Educate resident on importance of fire safe decking - Educational efforts of the need for use of safe decking materials. 2) Consider modifying county & city code measures which may include, but not be limited to, prohibiting unsafe synthetic decking - Prohibit synthetic decking which has a significantly higher flammability, and significantly lower structural rating, than wood of comparable dimension.
B.1.d.	Outbuildings - Structures (e.g. storage, wood & tool sheds) with less than 30-foot separation from outbuildings place homes at a high risk of loss.	1) Educate residents on need for separation of heat loads - Efforts should be made to educate residents on the need to have separation of heat loads from their residence. 2) Enforce clearance requirements - Enforce clearing of at least 100 feet

		around structures, a requirement of PRC 4291.
Item	Risk Condition:	Mitigation Measures:
B.1.e.	Woodpiles - Woodpiles with less than 30 feet separation from outbuildings often place homes at a high risk of loss.	1) Educate residents on need for separation of heat loads - Efforts should be made to educate residents on the need to have separation of firewood piles from their residence.
B.1.f.	Propane tanks - Tanks with less than 10 feet of clearance may place homes at a risk of loss.	1) Educate residents on need for separation of heat loads - Efforts should be made to educate residents on the need to have vegetative & flammable material clearance around propane tanks near their residence.
B.1.g.	Immediate structure landscaping - (0-6') Certain plants (e.g. junipers) immediately adjacent to a structure can increase a home's susceptibility to ignition if they burn freely.	1) Information and education on fire safe landscaping - Continue to provide information and education to residents on creating fire resistant landscaping adjacent to structures. Emphasis should be on vegetation and landscaping materials that do not readily accept embers and perpetuate fire spread. 2) Explore incentives for fire safe landscaping - Explore incentives for homeowners to make firesafe landscapes adjacent to homes.
B.1.h.	Defensible space clearance zone - (6-30') Enforcement of PRC 4291 (Defensible Space) in communities and the county is often difficult to obtain. While Public Resources Code 4291 requires that residents maintain at least 100 feet of defensible space, there are no mechanisms in place for uniform inspection obtaining compliance.	1) Enforce clearance requirements - Develop processes to aid communities, fire districts, or other agencies in the enforcement of PRC 4291. 2) Consider encouraging development of fire safe clearance standards in the City of Portola. - City of Portola to work on developing clearance standards. 3) Explore incentives for fire safe landscaping - Explore incentives for homeowners to make firesafe landscapes adjacent to homes.
Item	Focus Area	
C.	Enhancing Suppression Capabilities and Public Safety	
	Risk Condition:	Mitigation Measures:
C.1	Fire protection - Approximately 20% of the privately held lands in the county outside of a fire district. For those	Fire districts and consolidation - Plumas County should consider developing a fire district for all

	<p>communities within fire districts most are having severe budget problems.</p> <p>Additionally, for developments zoned with a minimum 3-acre parcel size (S-3) there is no requirement for fire protection regardless of the projected number of homes to be developed.</p>	<p>communities and proposed subdivisions presently without local fire protection. It may also be advantageous in the future if adjacent departments pooled their energies and resources to be more effective and efficient. Efforts should be made to adequately fund fire protection in the county.</p> <p>2) Consider modification of the County General Plan to require less dense zones have fire protection - Residential zoning should consider the expected density and number of homes in addition to the parcel size when requiring fire protection.</p>
Item	Risk Condition:	Mitigation Measures:
C.2.	<p>Signage - This factor is critical to agencies providing emergency services, not only for wildland fire purposes, but all emergency vehicle access. Plumas County should strive to have all residences and communities meet Fire Safe Standards (PRC 4290) for road and address signage. Currently a standard exists in the county & city for new construction, but not older structures.</p>	<p>1) Explore incentives for fire safe house signing - Explore incentives for homeowners to meet Fire Safe Standards (PRC 4290) for signing of their homes.</p> <p>2) Consider modifying county & city codes measures which may include, but not be limited to, requiring proper signage upon sale - Expedite house and road signage by requiring it upon sale.</p> <p>3) Enforce signage requirements - Enforce road and address signage similar to what is required for new development.</p>
C.3.	<p>Driveways and private roads - This factor is critical to agencies providing emergency services, not only for wildland fire purposes, but all emergency vehicle access.</p>	
C.3.a.	<p>Driveway length - While many current driveways are less than 150 feet of line sight distance from a road, the driving distance exceeds 150 feet with no way to turn apparatus around or allow for passing of vehicles.</p>	<p>1) Revise Plumas County's fire safe driveway standards interpretation - Revising Plumas County's fire safe driveway standards could go a long way in resolving this issue. By requiring all new driveways greater than 150 feet in driving distance length (not line of sight distance from the road to the corner of the structure) conform to Fire Safe Standards (PRC 4290).</p>

<i>Item</i>	<i>Risk Condition:</i>	<i>Mitigation Measures:</i>
C.3.b.	Gates - Emergency responders have come across either narrow gates, or gates that don't open during power outages.	<p>1) Consider modification of county and city codes to require gates open without power - Require that roads and driveways with gates meet Fire Safe Standards (PRC 4290) for width, and allow emergency vehicle access even during power outages.</p> <p>2) Educate resident on importance of emergency access through gates - Educational efforts should be made to insure all gates conform to Fire Safe Standards (PRC 4290) and open during power outages.</p> <p>3) Explore incentives for fire safe gates - Explore incentives for homeowners to make their gates conform to Fire Safe Standards (PRC 4290).</p>
C.3.c.	Vegetative clearances - Emergency responders have come across existing private roads and driveways too overgrown for their apparatus. Fire Safe Standards (PRC 4290) currently require that vegetation be cleared for 10 feet in width and 15 feet in height along driveways.	<p>1) Enforce vegetative clearance standard - Enforce driveway vegetative clearance requirements for Fire Safe Standards (PRC 4290).</p> <p>2) Explore incentives for fire safe driveways, vegetation - Explore incentives for homeowners to make their driveways conform to Fire Safe Standards (PRC 4290) for vegetation clearances.</p> <p>3) Consider modification of county and local codes to require non-compliant driveways conform to current standards when receiving any new building permit - Require residential driveways and roads that are out of compliance with vegetation clearances be corrected to current Fire Safe Standards (PRC 4290) as a condition of any new building permit, and before being able to proceed with construction.</p>
C.3.d.	Excessive slopes - Emergency responders have come across driveways too steep for their	1) Insure compliance of Fire Safe Standards for driveways during the building development & inspection -

	apparatus.	Have building inspectors sign off compliance with Fire Safe Standards (PRC 4290) during construction of new residences.
Item	Risk Condition:	Mitigation Measures:
C.3.e.	Exempted turnarounds - Emergency responders have come across private roads with limited space for turning around their apparatus.	1) Insure compliance of fire safe standards for driveways during the building inspection phase. - Have building inspectors sign off compliance with Fire Safe Standards (PRC 4290) for roads and driveways during construction of new residences.
C.3.f.	Bridges - Emergency responders have often had to make decisions on whether or not their apparatus could squeeze through an allowed single lane bridge.	1) Consider modification of county and local codes to require bridges be designed and built 4 feet wider than fire apparatus - Building wider single-lane bridges could lessen risks of damage & access for emergency personnel and their vehicles.
C.4.	Access for evacuations in and out of the community in the wildland urban interface (WUI) - A number of existing “at risk” communities in Plumas County presently only have one way in and out of their community.	Explore development of alternate community escape routes - There may be opportunities to develop alternate access in the Wildland Urban Interface. Communities, industrial landowners, along with local, state, and federal agencies should work collaboratively to identify and pursue funding to improve access for evacuations for communities with one way in and out, or roads.
C.5.	Water systems - Water is a premium commodity in the suppression of both structural and wildland fires.	
C.5.a.	Existing communities - Many existing Plumas County communities lack sufficient water storage, handling, or delivery systems, placing properties at a higher risk for loss to fire.	1) Enhance storage and delivery of water - Development and enhancement of delivery should be a priority. Communities and the County should work collaboratively to increase water storage and delivery capacity in all Plumas County communities. 2) Explore incentives for enhancing water storage & delivery - Explore incentives for existing homeowners to meet Fire Safe Standards (PRC 4290) for water for fire suppression on their properties.

		3) Explore options to increase community storage & delivery – Plumas County Fire Safe Council, special districts, Community Development Commission, and the County should work collaboratively to obtain funding for enhancement of water storage and delivery systems.
Item	Risk Condition:	Mitigation Measures:
C.5.b.	Proposed residential developments - Communities may be allowed to develop in the county which have unacceptable water flow and/or storage for firefighting, once they achieve their full development (housing density).	Consider modification of the County General Plan zoning standards to require less dense zones have an acceptable firefighting water system as a requirement of new developments - Residential zoning should consider the expected density and number of homes in addition to the parcel size when requiring a firefighting water system.
C.5.c.	Development in the WUI - Lack of accessible water sources for wild fire suppression in Plumas County.	Enhance storage of water in WUI - Communities and local agencies should work collaboratively at the local, state, and federal level to identify opportunities to improve water storage, access, and development for firefighting on public and private lands.
Item	Focus Area	
D.	Hazardous Fuel Reduction	
	Risk Condition:	Mitigation Measures:
D.1.	Vegetation on developed lots - An excess of hazardous fuel around structures places many homes at risk. Structures are required to have at least 100 feet of defensible space (PRC 4291). More clearance may be necessary depending on fuels, slope aspect, and a property’s position on the slope. Obtaining compliance with PRC 4291 is currently mostly voluntary and often difficult to obtain.	1) Educate residents on need for creating structure survivable space - Efforts should be made to educate residents on the need to comply with PRC 4291 by removing vegetation around their residence. 2) Explore incentives to increase compliance with PRC 4291 - Explore incentives for existing homeowners to meet fire safe standards for defensible and structure survivable space on their properties. 3) Enforcement of PRC 4291 - Developing process to aid communities, fire districts, or local agencies in enforcing PRC 4291.

<p>D.2.</p>	<p>Vegetation on adjacent vacant lots - Presently in Plumas County, many parcels adjacent to homes are undeveloped with extensive fuel loading, placing homes at risk.</p>	<p>1) Educate residents on need for reducing hazardous fuels - Efforts should be made to educate residents of vacant lots of the need to thin and manage excessive vegetation.</p> <p>2) Explore incentives to increase vacant lot cleanup - Explore incentives for existing property owners to perform hazardous fuel reduction on their vacant lots.</p> <p>2) Consider modification of county and city codes to require vacant lots conform to a fire safe standard - Require property owners of vacant properties clear a minimum of 100 feet from other structures, or for a minimum of 30 feet along property lines.</p> <p>3) Explore options to increase fuel reduction on vacant lots – Plumas County Fire Safe Council, special districts, and Plumas County should work collaboratively to obtain funding for hazardous fuel reduction.</p>
<p>Item</p>	<p>Risk Condition:</p>	<p>Mitigation Measures:</p>
<p>D.3.</p>	<p>Vegetation in and around the community - While many communities have begun to develop hazardous fuel reduction projects, there is much untreated land between structures and in common areas throughout the county. Projects include fuel breaks around, or fuel reduction within, the community.</p>	<p>1) Encourage collaborative community based HFR projects - Encourage property owners, homeowner associations, community services districts, and communities to identify through collaborative efforts strategic areas to perform hazardous fuel reduction (HFR) to eliminate catastrophic stand-replacing fire in their communities (between structures).</p> <p>2) Implement recommended HFR projects - Implement fuel treatment measures within and around communities which are described in Appendix B of the Plumas County Hazardous Fuel Assessment and Strategy, produced for PC FSC by Wildland Rx, 2/2005.</p> <p>3) Continue to pursue HFR funding for communities - County efforts</p>

		<p>should be made to continue to pursue funding for community HFR activities.</p> <p>4) Explore incentives for landowners to reduce hazardous fuels - Explore incentives for existing large landowners to meet HFR standards on their properties.</p>
D.4.a.	<p>Treating hazardous fuels in planned subdivisions - Many proposed subdivisions in Plumas County have hazardous fuel conditions before and after their division. Upon parcel sale, it transfers the problem to multiple landowners.</p>	<p>Consider modification of county codes to require HFR on proposed developments prior to recordation of final map - To expedite fuel reduction countywide, manage fuels in an economy of scale, and insure completion it may be prudent to require hazardous fuel reduction which is compatible with other environmental attributes on all forested lands prior to recordation of the final subdivision map. Hazardous fuel reduction should create a fire-resilient stand, which would not contribute to initiating or sustaining a crown fire, and potential surface fuel flame lengths would be 4 feet or less.</p>
D.4.b.	<p>Maintenance of treated hazardous fuels in planned subdivisions – Hazardous fuel treatment must be part of an on-going strategy in order to maintain a fire resistant condition into the future. Once planned subdivisions are treated to a fire resilient condition, there need to be a written strategy to maintain that condition and an assignment of responsibility should be required,</p>	<p>Consider modification of county codes to require a plan for the maintenance of treated fuelbeds on proposed developments prior to recordation of final map - To maintain the investment, desired fuel condition, and provide for community safety, in upcoming developments. It is prudent to require a hazardous fuel reduction maintenance plan that can assign either the Homeowners Association or Communities Service District the responsibility to provide for future fiscal and enforcement responsibilities to maintain fuelbeds fire resistant condition.</p> <p>Maintenance activities should be compatible with other environmental attributes and maintain a fire-resilient stand, which would not contribute to</p>

		initiating or sustaining a crown fire, and potential surface fuel flame lengths would be 4 feet or less.
Item	Risk Condition:	Mitigation Measures:
D.5.	Treating hazardous fuels on public lands within communities at risk - There are approximately 30,000 acres of public lands within the boundaries of Plumas County’s communities at risk.	Treat all public lands within community at risk boundary - Through collaborative efforts, all public lands within communities at risk should be assessed for treatment. Available lands should be to a standard which will create a fire-resilient stand, which would not contribute to initiating or sustaining a crown fire, and potential surface fuel flame lengths would be 4 feet or less
D.6.	Treating hazardous fuels in the adjacent WUI zone - Up to ½ mile around the “Community At Risk” boundary to the outer edge of the WUI is the area where collaborative community based hazardous fuel reduction efforts should occur so that fires approaching or leaving a community will be less intense, generate fewer embers for spot fires, and provide for defensible actions by suppression resources. These fuel reduction projects would focus on reductions in surface, ladder, and canopy fuels on public and private lands.	<p>1) Complete QLG network on public lands - Complete all proposed Quincy Library Group (QLG) projects, and seek opportunities to expand the proposed QLG network into communities. There are corresponding QLG maps and associated acres in table format. (Section 3. Page 48)</p> <p>2) Explore incentives for landowners to reduce hazardous fuels - Explore incentives for existing large landowners to meet HFR standards on their properties.</p>
D.7.	Extended WUI zone - Up to a mile around the adjacent WUI zone (for a total WUI of 1.5 miles). In this area, community based hazardous fuel reduction efforts should occur to compliment work within the adjacent WUI, providing additional community protection. This would reduce potential wildland fire impacts so that they will be less intense, generate fewer embers for spotfires into the community, provide protection to surrounding natural values, and provide for safer and more efficient firefighting.	<p>1) Continue mitigation measures into extended WUI - Mitigation measures in the extended WUI would be the same or similar to those in the adjacent WUI zone, but be second priority for WUI work.</p> <p>2) Complete QLG network on public lands - Complete all proposed Quincy Library Group (QLG) projects, and seek opportunities to expand the proposed QLG network into communities. There are corresponding QLG maps and associated acres in table format. (Section 3. Page 48)</p>

	<p>These fuel reduction projects would focus on reductions in surface, ladder, and canopy fuels on public and private lands.</p>	<p>3) Explore incentives for landowners to reduce hazardous fuels - Explore incentives (e.g. tax breaks, waive yield taxes, and THP exemptions) for existing large landowners to meet HFR standards on their properties.</p>
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APPENDIX