



Integrating Wildfire into the Land Use Planning Process:

A Case Study on Summit County, Colorado:
Recommended Policies and Regulations to Reduce Community Wildfire Risk



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1. SUMMARY AND PROJECT OVERVIEW

Land use planning in the wildland-urban interface – a case study in Colorado

More than 72,000 communities across the U.S. are considered “communities at risk” to wildfire. Better land use planning methods can offer effective solutions to address this risk. The Headwaters Economics project team, funded by the LOR Foundation, worked closely with Summit County, Colorado to showcase the process of integrating wildfire risk reduction into the county’s key planning documents, such as the Comprehensive Plan and Land Use and Development Code. An in-depth study; “Summit County, Colorado: Recommendations for Policies and Regulations Related to Reducing Community Wildfire Risk” found a number of opportunities where wildfire risk can be more effectively addressed throughout the county. The full study, containing analysis and recommendations, can be found at: <http://headwaterseconomics.org/wildfire>

Introduction

Throughout the United States, wildfire risk is gaining increased attention due to recent trends that include rising fatalities and home losses, significant community and environmental impacts, and ballooning suppression costs. Many reasons are attributed to the cause of these wildfire concerns—one of the most prominent being that more development is occurring in areas prone to wildfires. Indeed, an estimated one-third of housing units and one-tenth of all land with housing is situated in an area commonly referred to as the “wildland-urban interface (WUI)” —the area where the built environment and natural or vegetated areas meet and often merge. The implications of development in wildfire prone areas are stark. According to a recent study by Headwaters Economic, the average number of structures burned from a wildfire has more than tripled since 1990, and recent years have seen as high as 5,000 structures burned.

A trend reversal is imperative, and effective solutions are required. Many national preparedness programs and local efforts are already in place to reduce community wildfire risk. Rarely, however, do these programs or initiatives include an in-depth application of land use planning tools to address the growing issues associated with development in wildfire prone areas. This absence may be due to a variety of reasons: land use planning is outside the scope of an existing wildfire mitigation program; a lack of wildfire technical expertise exists from within a community’s planning staff; capacity or political will is too low to initiate planning efforts aimed at wildfire risk reduction; or, a community believes that that wildfire is already adequately addressed in other community plans, such as the Comprehensive Emergency Management Plan, Community Wildfire Protection Plan, and/or the Multi-Hazard Mitigation Plan.

Although some communities have adopted a “wildland-urban interface ordinance,” very few (if any) communities have performed an in-depth analysis and application of land use planning concepts to address their wildfire risk throughout their key planning documents. Showcasing this type of community planning example was the primary objective of the recent study, “Summit County, Colorado: Recommendations for Policies and Regulations Related to Reducing Community Wildfire Risk” initiated by Headwaters Economics, in collaboration with Wildfire Planning International and Clarion Associates.

With generous funding from the LOR Foundation, the project team worked with policymakers, planning staff, and other stakeholders in Summit County, Colorado to review Summit County’s Countywide Comprehensive Plan, Basin Master Plans, Subbasin Master Plans, Land Use and Development Code, Community Wildfire Protection Plan and Multi-Hazard Mitigation Plan. Based on their analysis and review, the project team drafted recommendations for Summit County planners to consider that would strengthen their wildfire resilience efforts. Recommendations span a broad range of ideas—from improving programs and policies to developing new provisions in a regulatory

context. The recommendations are intended to complement the existing suite of wildfire mitigation programs and tools already in place throughout Summit County.

The study revealed that land use planning can provide meaningful ways for a community to strengthen its approach to addressing its wildfire risk.

Implications of this study reach beyond the boundaries of Summit County, and there are a number of lessons learned for other communities and policymakers to consider. This report is intended to capture highlights from the Summit County case study, and stimulate thinking around the potential of land use planning in reducing community wildfire risk.

What is Land Use Planning in a Wildfire Mitigation Context?

Policies, strategies, regulations, incentives, and other mechanisms that allow for growth and development to occur while improving the interaction between the built and natural environments.

Land use planning offers a unique opportunity to address a community's wildfire risk by providing policies and regulations aimed at mitigating or avoiding future wildfire disasters. For example, land use planning solutions could:

- Encourage protection of wildfire hazard areas by offering density bonuses or reduced fees in exchange for clustering development away from hazardous areas;
- Ensure a community's Comprehensive Plan (an underlying planning document that guides a community's future growth and development) contains policies that acknowledge the threat of wildfire hazard to applicable areas of the community;
- Provide consistent and enforceable language in a community's Land Use and Development Code that identifies high hazard areas subject to wildfire mitigation provisions;
- Reconcile differences between a community's values, such as preserving attractive view corridors while ensuring appropriate wildfire risk reduction activities are performed around properties; and
- Tie future land use mapping with the Community Wildfire Protection Plan to ensure development occurs in conjunction with a community's wildfire risk reduction efforts.

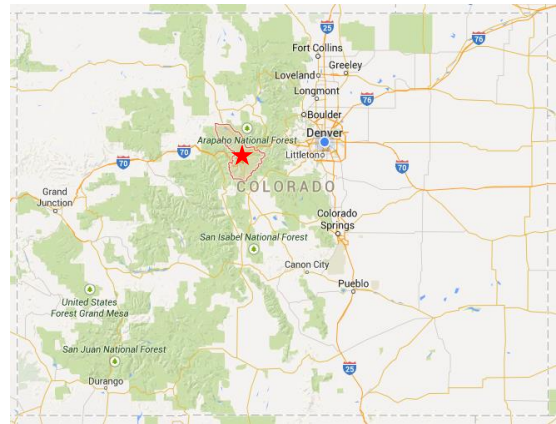
Tips for Working with Local Governments to Make Successful Recommendations

- *Participation should be voluntary and requested by the local governments.*
- *Local governments should be asked to submit a proposal and finalists should be selected based on fair criteria, such as community willingness, the risk of wildfire, staff capacity, and probability of success. (Example criteria used in Summit County are provided in Appendices.)*
- *The project team should recognize that any advice given to the community is applied under the authority of local government. Ultimately, it is up to the community to move forward with any number of recommendations.*
- *Assistance should be mostly limited to planning mechanisms that reduce risk from wildfires. Defining this narrower lens respects any concurrent efforts related to planning.*

Background

Summit County is located in the central mountains of Colorado and is host to several tourist attractions and resort communities including Breckenridge, Keystone, Frisco, Blue River, Dillon, and Silverthorne.

Approximately 80 percent of Summit County's land area is public land managed by the U.S. Forest Service and the



Bureau of Land Management. Elevations in the County range from 7,500 feet to 14,270 feet, with forests dominated by Lodgepole Pine, Englemann Spruce, and Subalpine Fir. The County is bisected by Interstate 70, making it accessible to the Denver metropolitan area within an hour. The County has experienced rapid growth over the decades, including permanent residents and secondary homeowners. According to the 2014 update of Summit County's CWPP, seasonal tourism can increase Summit County's population by 500 percent. As development pressures continue in Summit County, so do the pressures on development in and around the wildland urban interface.

Summit County is no stranger to wildfires. However, according to the 2013 Multi-Hazard Mitigation Plan, over 80 percent of the County's wildfires since 1980 were smaller than a quarter of an acre. Many of the larger fires in the County have been concentrated in areas near I-70 and Highway 6. The County does not have a recent history of large fires; however, the potential is there, and only exacerbated by recent drought conditions experienced in Colorado and the West. Summit County is considered an area leader when it comes to forest management and wildfire hazard mitigation, making the County an excellent case study.

At the outset of the project, the consulting team worked with Summit County to develop a Memorandum of Understanding (MOU). This MOU outlined the appropriate documents to be reviewed and evaluated by the consulting team, defined the purpose and intent of the project, and provided terms and conditions of the partnership between Summit County and the consulting team. The basic elements of that MOU are described in the Appendices to this report. Throughout the course of this project, the consulting team received significant support from the Board of County Commissioners, the Summit County Wildfire Council (SCWC), and Community Development Division staff who contributed knowledge, local expertise, and assistance providing important document information.

Because the County was so far ahead of the curve, the consulting team was presented with a unique challenge – provide meaningful recommendations for improving an already extraordinary foundation of planning tools that reduce community wildfire risk.

After formalizing a working relationship, the consulting team began reviewing the background information that would serve as the basis for the resulting recommendations. This included the Countywide Master Plan, several Basin and Subbasin Master Plans, pertinent sections of the Building Code, the Land Use and Development Code, the Community Wildfire Protection Plan, and the

Multi-Hazard Mitigation Plan. The initial review gave the consulting team a better understanding of the local policy and regulatory environment. In addition to their adopted regulations, the County was also underway drafting amendments to the Land Use and Development Code to further incorporate wildfire mitigation provisions into the rezoning, subdivision, transfer of development rights, and landscaping regulations. Because the County was so far ahead of the curve, the consulting team was presented with a unique challenge – provide meaningful recommendations for improving an already extraordinary foundation of planning tools that reduce community wildfire risk.

The consulting team met with Summit County staff and officials on several occasions, including informational meetings, a countywide tour focused on wildfire and development, and meetings with the Summit County Wildfire Council. Building in facetime with the community leaders was an essential component to a successful project. Rather than developing regulations based solely on the consulting team's intuition, they were informed by discussions with staff working on local wildfire programs and initiatives on a daily basis.



Summit County Staff describes site development conditions that led to successful suppression of an earlier wildfire in the County. Pictured from left to right is Alan Hanson (Summit County), Dan Schroder (CSU Extension), and Molly Mowery (Wildfire Planning International). Photo: T. Wafaie

2. SUMMARY OF RECOMMENDATIONS

A typical planning process that suggests revisions to key community documents (Community Wildfire Protection Plan, Comprehensive Plan, Land Use and Development Code, etc.) would occur with tremendous stakeholder and public input. The nature of this project was different from that process, and it was recognized at the project onset that the implementation of recommendations may require further discussion prior to their acceptance or dismissal. This was an important distinction given that the recommendations report is ultimately a public document.

Methodology and Organization

The consulting team's recommendations for Summit County were divided into three distinct areas of focus:

- Land Use and Development Code
- Comprehensive and Master Plans
- Summit County Community Wildfire Protection Plan

Each area of focus included narratives describing an issue prior to identifying specific recommendations for improvement. The following summary of recommendations captures the overall suggested direction for achieving increased wildfire risk reduction in Summit County through an improved land use planning approach:

Land Use and Development Code

- Improve development review procedures to consistently tie reviews and approvals to wildfire hazard;
- Enhance the Transfer of Development Rights (TDR) program by utilizing it as an opportunity to potentially direct future growth away from areas with medium to extreme wildfire hazard;
- Identify and define thresholds for when land use regulations apply to wildfire hazard areas (e.g., new development in a medium to extreme hazard area requires additional mitigation requirements);
- Consider updates to the landscaping regulations to address maintenance and mitigation for existing development; and
- Expand use-specific standards to ensure that uses such as gas stations, hospitals, or critical facilities are appropriately mitigated when located in or near areas designated with a medium to extreme wildfire hazard.

Planning Policy Documents

- Build on current policies in the Countywide Comprehensive Plan to better address wildfire;
- Emphasize the importance of wildfire mitigation in the Basin Master Plans and Subbasin Plans; and
- Integrate current planning policy documents into the Land Use and Development Code.



Community Wildfire Protection Plan

- Establish a new implementation section that includes land use planning activities to help guide future updates and ensure consistency between planning documents;
- Reinforce linkages with the Multi-Hazard Mitigation Plan;
- Enhance, summarize, and prioritize actions to better track progress and achievements over time;
- Clarify key terms used throughout the CWPP (e.g., WUI, wildfire risk, and wildfire hazard) and their applicability;
- Improve the CWPP's overall organization to streamline content; and
- Improve the CWPP's user-friendliness to make it generally more accessible to multiple audiences (including the public).


Each of these general recommendations are followed by specific recommendations for improving Summit County's planning documents.

For example, Summit County has already adopted and has been successful at implementing a Transfer of Development Rights (TDR) program that compensates landowners for the sale of development rights in exchange for conservation of natural, scenic, and environmentally sensitive areas. In a typical TDR program, lands are designated as either "sending areas" (areas intended for preservation and limited development) or "receiving areas" (areas suitable for additional development rights through increased density). The County had recently proposed changes to their TDR ordinance to prohibit the designation of medium to extreme wildfire hazard areas as "receiving areas." To build on those recent efforts, the consultant team provided additional recommendations such as clarifying whether exemptions to the program could apply to medium to extreme wildfire hazard areas, and including wildfire risk reduction in the purpose and intent section of the TDR program.

Following each broad category, the recommendations are summarized in a table, such as the example below from the TDR section. Recommendations identified as having a broader impact on reducing overall community wildfire risk are called out with a flame icon. This allows the reader to quickly browse the 65-page document for the "bigger ideas" suggested in the report.

TDR Program – Recommendations:	
	<p>Include wildfire risk reduction in the purpose and intent and list of issues that could be mitigated by use of the program in Section 3506.01 and 3506.02.</p> <ul style="list-style-type: none"> • Reconcile terminology when referring to hazard maps (e.g., moderate/severe vs. medium/extreme). • Clarify whether the exemptions could apply to areas within a medium to extreme hazard area.
	<p>Consider tying approval of receiving areas to hazard rating maps rather than focus areas.</p>

This table taken from the Summit County recommendations report summarizes the recommendations for improving the Summit County Transfer of Development Rights program as it relates to reducing community wildfire risk.

Language Plan and Land Use and Development Code Land Use and Development Code	
<p>partnering agencies. The end result is a series of maps that define boundaries of areas where community resources should be focused to reduce potential impacts from wildfire. Specific hazard management recommendations are also established within focus areas to further reduce the risk of wildfire. The County could make greater use of the CWPP maps in the decision-making process for future development.</p> <p>Recent proposed amendments to the TDR program include specific language related to the focus areas. For example, Section 3506.02.03.01 suggests that sending or receiving properties within a focus area shall not be eligible for a TDR map amendment to become a receiving area. This is a substantial improvement to the program because it directly limits the pattern of development in a defined area. As these proposed amendments move forward, the reference to medium/extreme hazard potential should be reconciled with moderate/severe hazard potential as proposed in the subdivision regulations.⁷</p> <p>The TDR program could be further improved as follows:</p> <ul style="list-style-type: none"> • Section 3506.01, Purpose and Intent, should include implementation of the CWPP in the bulleted list. The CWPP is an excellent bridge from comprehensive planning policies to land development regulations, and this section of the existing regulations is the perfect opportunity to make that statement. • Section 3506.02.03.01 Exemptions, could exclude areas identified as medium to extreme wildfire hazard, or within a CWPP focus area. As written, these exemptions may be in conflict with recently proposed language to prevent mapping receiving areas in identified focus areas. For example, is a community facility or institutional use exempt from being subject to focus areas? Perhaps the exemption clause could include a statement such as "except for areas identified as medium to extreme wildfire hazard rating or included in a focus area as defined by the CWPP." • Additionally, the language in the exemptions section could be misinterpreted. It currently states that "the following types of development: TDR focus areas, and Planned Unit Developments (PUDs) are exempt from the provisions of these regulations." The language should be clarified to specify exactly which provisions certain types of development are exempt from. 	
	<p>Include wildfire risk reduction in the purpose and intent and list of issues that could be mitigated by use of the program in Section 3506.01 and 3506.02.</p> <ul style="list-style-type: none"> • Reconcile terminology when referring to hazard maps (e.g., moderate/severe vs. medium/extreme). • Clarify whether the exemptions could apply to areas within a medium to extreme hazard area.
<p>⁷As previously mentioned, a better approach for development decisions might be to use the hazard rating map rather than the focus area maps. Given that some focus areas may be suitable for development with more limited fuel treatment or other mitigation.</p> <p>Summit County Policy and Regulations, revised 11/20/2015</p>	

Following the recommendations section of the report, a detailed matrix provides a section-by-section analysis of each of the documents reviewed. That section-by-section analysis includes specific recommendations for enhancing the various planning documents – ranging from minor comments related to improving the readability of a section, to suggestions for amending ordinances such as revisions to development approval criteria.

Below are a few examples of some of the more far-reaching recommendations included in the section-by-section analysis of Summit County’s current planning documents.

- **In the CWPP community base map section, consider adding an additional map that includes land use, as indicated in Master Plans.** This recommendation encourages the county to more distinctly draw the connections between planning for wildfire mitigation (in the CWPP) and planning for growth and development (in the future land use map of the comprehensive plan).
- **In the Environment element of the Countywide Comprehensive Plan, insert a paragraph or two on the importance of wildfire protection.** This recommendation would include wildfire as one of the major issues facing the natural environment. When certain elements of a long-range planning document are silent on an issue, it can be more difficult to develop effective solutions through regulations or incentives in the future.
- **In the rezoning policies section of the Land Use and Development Code, use the word “shall” instead of “may” when referring to a fuels reduction plan or a defensible space plan to make them requirements instead of optional.** This recommendation suggests changing some aspirational code language to mandated code language, thus allowing staff and other decision makers to have a better understanding of the wildfire risk on developable properties.
- **For site plan reviews, as stated in the Land Use and Development Code, add a provision to require site plan review for any development or modification in medium to extreme wildfire hazard areas, regardless of whether a building permit is required.** This recommendation would allow the County to review new *and* expanding development for potential impacts related to community wildfire risk on a case-by-case basis.

The draft version of the recommendations report was presented to staff and the Summit County Wildfire Council for review and comment. A final version of the recommendations report was then distributed to staff. Initial feedback from the County indicates that a large percentage of the recommendations will likely be implemented by the Community Development Division staff and the Summit County Wildfire Council as they amend their plans and Land Use and Development Code.

Other Example Recommendations

Land Use and Development Code

Require Additional Information with Application Submittals

The report recommends that Summit County require submittal of fuel hazard reduction plans, forest management plans, and other measures to reduce wildfire hazard for new development in known hazard areas. The County could apply a two-way switch where these additional plans are encouraged or discretionary in medium hazard areas but are required for applications in high or extreme hazard areas.

Require Special Assessments for Wildfire Mitigation

The report also suggests that the County (depending on available resources) require site-specific assessments as part of the development application process. The assessment would be conducted by a trained wildfire specialist such as a forester or fire behavior analyst. The consulting team suggested establishing the following minimum thresholds for when a special assessment would be required:

- The property (even for Class 1 development proposals) is identified as a medium to extreme hazard rating, or is located within a focus area in the CWPP;
- Wildland vegetation areas beyond 30 feet from structures are to remain after development within or surrounding proposed development areas;
- Development proposed on slopes greater than 15 percent; and
- Development proposed in areas where structures will be built within less than 100 feet from high or extreme hazard fuel areas that are not in the control of the developer.

Establish Use-Specific Standards to Reduce Wildfire Risk

The report makes several recommendations related to use-specific standards for uses that either attract large congregations of people or could potentially fuel a wildfire. The recommendations are to require further scrutiny of these land uses when they are located in wildfire hazard areas compared to more urbanized areas of the County. Specifically, the report suggests:



Add use-specific standards for requiring conditional use permit approval for the following uses in medium to extreme hazard areas:

- Health care facilities;
- Lumber yards;
- Community centers;
- Auto service stations;
- Propane storage facilities;
- Firewood splitting/storage facilities;
- Recreation facilities;
- Churches; and
- Educational facilities.



Add use-specific standards to apply minimum distance requirements from forested areas for the following uses:

- Special events;
- Lumber yards;
- Auto service stations;
- Propane and bulk storage facilities; and
- Firewood splitting/storage facilities.

Revisit Applicability Thresholds

One of the biggest issues in Summit County is reducing wildfire risk for existing development. The report includes several recommendations for when Summit County might apply special assessments, landscaping regulations, or building code requirements. One recommendation was to require compliance with Chapter 45 of the Summit County Building Code (that includes defensible space provisions) when an applicant seeks a permit to expand existing development by a substantial amount. For example, if the expansion is greater than 50 percent of the current floor area, it should be subject to Chapter 45. That percentage can be reduced to 25 percent for development in medium to extreme wildfire hazard areas.

Explore Incentives

Another way to reduce wildfire risk in already developed areas is to offer incentives. The report recommends that the County consider offering waived fees or reduced processing times for those developers willing to sign agreements to maintain defensible space features over time, thus reducing the immediate wildfire risk for that property or subdivision.

Many other recommendations were made throughout the report that generally fall within the categories of improving policy, improving regulations, or offering incentives.

Planning Policy Documents

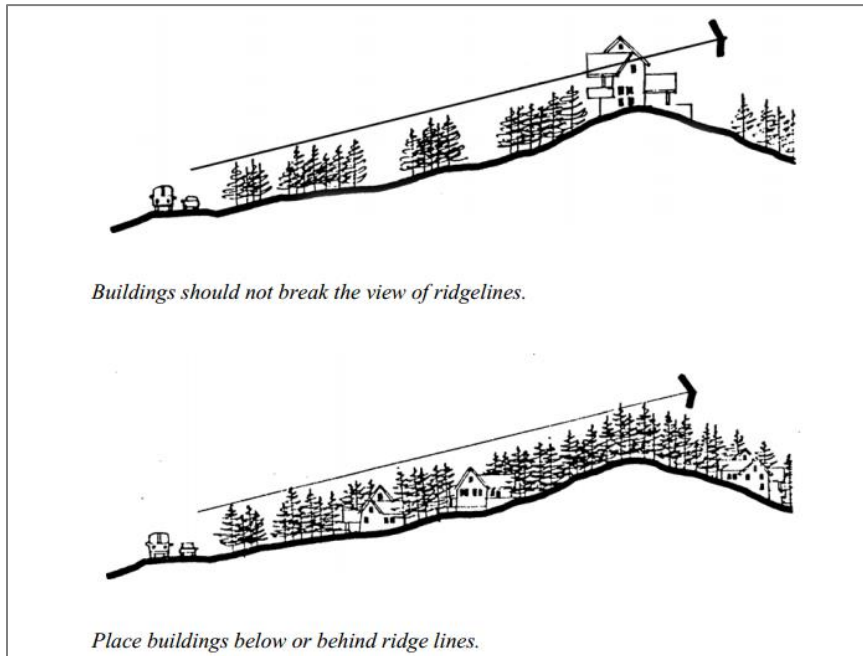
Incorporate References to Wildfire in Open Space Element of Countywide Master Plan

The current Master Plan does not include any reference to wildfire. Open space can increase wildfire risk to communities if vegetation in open spaces has not been managed properly. Linking open space policies to include wildfire risk reduction through vegetation management (where applicable) can better support the County's wildfire mitigation efforts.

The Design and Visual Resources Element Should be Reconciled with Defensible Space Standards

True of many resort communities, protection of scenic views and the design of buildings to blend in with its surroundings is an important factor in protecting the visual resources that make those resort communities special. In Summit County, many of the suggested policies and regulations related to scenic views conflict with defensible space standards. For example, the image on the next page taken from the Snake River Master Plan (a Subbasin Master Plan within Summit County) illustrates how development should incorporate visual quality and design standards. The "yes" image for blending in on a ridgeline could be

conversely considered a “no” image for managing defensible space because of the close proximity of the structure to the trees.



The image above from the Snake River Master Plan indicates a preference for protecting views of ridgelines; however, the drawing unintentionally illustrates a scenario without adequate wildfire mitigation.

The recommendations include a discussion related to the need for Summit County to strike a delicate balance between forest management, wildfire mitigation, and visual resources when considering factors related to development on steep slopes.



The image above shows where an exceptionally large number of trees were placed close to the structure in order to comply with minimum landscaping standards.

Sound land use planning often means striking a balance between competing interests. For example, local elected officials might have to delicately balance protecting significant visual resources and requiring site design that acts to defend homes from wildfire.

Community Wildfire Protection Plan

Set Target Thresholds for Fuel Hazard Reduction

The current Summit County CWPP does not have language surrounding target thresholds for fuel hazard reduction (e.g., medium, low) based on an acceptable fire behavior using their model. The report suggests that a target threshold could provide the County with a measurable benchmark when reviewing development permit applications specific to those areas requiring any type of special assessment. Over time, the County should be able to achieve appropriate fuel hazard reduction within their CWPP's designated focus areas based on the target thresholds.

Create a Summary Table of Actions

The CWPP contains strategies and specific actions throughout the individual sections; however, there is no comprehensive table or list summarizing those strategies and actions. This somewhat simple solution can go a long way in mobilizing advocates and assigning responsibility for implementation. The consulting team recommended to Summit County that the action table include the following elements:

- Location of treatment or geographic area impacted, its relationship to focus areas and/or WUI, and scale (e.g., countywide, basin-specific, neighborhood, etc.);
- Lead agency and point of contact responsible for implementing each action;
- Additional agencies that will play a participating/supporting role in the action's implementation;
- Timeframe required for implementation, including a target start and end date if applicable;
- Funding and resource requirements for successful implementation;
- Potential sources of funds and resources available for successful implementation;
- Anticipated measurable outcomes (e.g., number of acres treated, number of homeowners engaged, improved access, etc.); and
- Prioritization of actions based on agreed upon criteria.

Reinforce Linkages with the Multi-Hazard Mitigation Plan

Because both the Multi-Hazard Mitigation Plan and the CWPP share a similar purpose in reducing long-term risk to natural hazards, the two should be consistent wherever possible. The report suggests establishing a mechanism by which any amendments to either document would include cross-checking language from the other plan to ensure consistent terminology, strategies, and priorities are achieved. This is a relatively low-effort and low-cost recommendation that can go a long way in addressing wildfire risk reduction.

3. LESSONS LEARNED

For Other Communities

In many ways, the Summit County case study recommendations are unique to Summit County. Local conditions, planning policies, and wildfire risk will vary among communities. This can make it challenging to transfer specific recommendations to other contexts. There are, however, lessons learned for other communities to consider in their own wildfire planning review and analysis. The following questions synthesize learning from the project team’s process in Summit County:

- **Is wildfire included in your Comprehensive Plan and other applicable master plans?** Do a simple diagnosis to determine if and where wildfire is mentioned in key documents. Make note of areas where the term is noticeably absent. For example, the project team found that several of Summit County’s planning sections could benefit from adding wildfire references, such as in the Comprehensive Plan’s Open Space and Environment elements.
- **If wildfire is already adequately addressed in your planning policies, does this translate into your Development Code to create an enforceable set of regulations that will mitigate future risk?** Summit County had excellent code language already, but the team found additional opportunities to creatively include wildfire—such as using high wildfire hazard as an additional criterion in the TDR program.
- **How well does your Comprehensive Plan and Development Code link to the CWPP?** The process revealed in some instances where Summit County’s plans required reconciliation and coordination between wildfire and other community topics. For example, wildfire mitigation efforts in Summit County (reduce fuels) could be at odds with the Design and Visual Resources element (hide buildings behind vegetation) unless revisions accommodate both development in forested areas and mitigation practices.
- **How user-friendly are your planning documents when it comes to wildfire?** Wildfire can be a complex subject, yet communities expect and rely on residents to understand their role in mitigation. Adding illustrations, diagrams, and local resources to planning documents can help readers better understand technical requirements. Summit County was no exception, and many recommendations suggest ways to improve reader understanding through graphics or re-organized content.

Strong political support and a collaborative environment were also important success factors. Summit County stakeholders—including the Board of County Commissioners, planning staff, and members of the Summit County Wildfire Council—encouraged the project team to “reach for the sky” in making

recommendations. In other words, much credit was given to local leadership and staff in their openness toward feedback to improve their local planning documents. This also underscored the importance of communication among project team members and staff: dialogue was an essential part of the process to clarify technical recommendations. Although the consulting team did not prioritize recommendations, it was helpful to highlight the most impactful recommendations for staff.

The Summit County case study should give the planning profession confidence that there are many opportunities for land use planners to engage in wildfire risk reduction practices. More community examples are needed to learn from, but this study provides a meaningful foundation. In addition to the questions above, the box below provides helpful resources for planners to dive deeper into the topic.

Wildfire Resources for Land Use Planners

Community Wildfire Safety Through Regulation: A Best Practices Guide for Planners and Regulators (2013). This manual helps communities evaluate their wildfire safety needs and choose appropriate planning tools. It also provides planners and public officials with sound technical and legal justifications for adoption of wildfire regulations and tips to improve the adoption process. This resource is available for free from the National Fire Protection Association at www.nfpa.org/safety-information/for-consumers/outdoors/wildland-fires/reports-case-studies-and-guides.

Planning for Post-Disaster Recovery: Next Generation (2015). Produced by the American Planning Association's Hazards Planning Center in partnership with the Federal Emergency Management Agency, this comprehensive manual offers information on the opportunities, benefits and limitations of planning for unpredictable events. This manual is available at www.planning.org/research/postdisaster/, along with other post-disaster recovery resources.

State/Local Resources. Look to your state's forest service (sometimes under the responsibility of the department of natural resources, or similar agency) to provide excellent local information and guidance on wildfire mitigation, plant selection, and vegetation management. Your state's resources are also helpful when listing references to mitigation standards or guidance in your planning documents.

For Policy Makers

The idea of helping communities minimize the risk from wildfire through improved land use planning has received significant attention at the national level. In 2014 numerous federal agencies, including the U.S. Forest Service and Department of the Interior, finalized the National Cohesive Wildland Fire Management Strategy. The **Cohesive Strategy**, as it is called, has three goals: restore and maintain landscapes; fire-adapted communities; and wildfire response.

The term **fire adapted communities** means “human populations and infrastructure can withstand a wildfire without the loss of life and property.” The National Action Plan, which is the framework for implementing the Cohesive Strategy, makes frequent mention of planning ideas such as “pursue municipal, county, and state building and zoning codes and ordinances that mitigate fire risk,” and “adapt and implement planning and zoning measures.” Yet there is little detail in these national guidance documents to explain what “planning” means. With the Summit County case study, we hope to have answered that question: land use planning – in a wildfire context – consists of an artful mix of community-supported policies, regulations, and incentives that increase a community’s ability to withstand wildfire.

Success on the ground may look something like this: A fire breaks out and is allowed to burn because of the ecological benefits. Because of a variety of risk reduction and mitigation efforts, including land use planning mechanisms, the fire burns around the community and no houses are destroyed. Incentives for community features that reduce wildfire risk, such as fuel breaks, cluster development, landscape treatments, development and design standards, subdivision regulations and other planning tools, are successfully applied where appropriate. No expensive air tanker planes are needed, and no one is injured or killed. As a result of good planning, wildland fire has played its role in reducing fuels, and agency funds are now used for landscape restoration projects rather than defense of homes. Developers have been rewarded, through density bonuses, expedited processing time and other incentives, for producing subdivisions that are fire-adapted. As a result of safer residential developments, home values have increased and insurance rates have declined.

Lessons learned:

- Land use planning does not mean telling people what not to do; rather it consists of incentives intermixed with regulations and policies to reward communities to be fire-adapted.
- Assistance should be provided to communities – on a voluntary basis – in the form of grants that can be used to hire land use planning consultants with expertise in minimizing wildfire risk. Even well-staffed communities can often use extra help.
- Which rules, regulations, and incentives are applied will always be determined entirely by local elected officials and their planning departments.
- Leadership support at all levels can inspire local planning and wildfire mitigation staff to go beyond routine practices and explore innovative land use planning solutions for wildfire risk reduction.

4. WILDFIRE MITIGATION RESOURCES FOR COMMUNITY PLANNING

Land Use Planning and Post-Disaster Recovery

- American Planning Association
www.planning.org/research/postdisaster/
- Federal Emergency Management Agency
<http://www.fema.gov/plan-prepare-mitigate>
- National Fire Protection Association
www.nfpa.org/safety-information/for-consumers/outdoors/wildland-fires/reports-case-studies-and-guides

Fire Adapted Communities/ Wildland-Urban Interface

- Fire Adapted Communities
http://www.fs.fed.us/fire/prev_ed/fac/
- Fire Adapted Communities Learning Network
www.facnetwork.org
- Firewise Communities Program
www.firewise.org
- National Cohesive Wildland Fire Management Strategy
<http://www.forestsandrangelands.gov/strategy/>
- Ready Set Go! Program
www.wildlandfirersg.org

Community Wildfire Protection Plan Guidance

- Best Management Practices for Creating a Community Wildfire Protection Plan:
http://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs89.pdf
- Community Wildfire Protection Plan Evaluation Guide (August 2008): Prepared by Resource Innovations, Institute for a Sustainable Environment, University of Oregon http://csfs.colostate.edu/pdfs/eval_9-8-08_web.pdf
- Engaging Socially Vulnerable Populations in Community Wildfire Protection Plans:
http://www.forestguild.org/publications/research/2008/socially_vulnerable_pop_in_CWPP.pdf
- Measuring Community Capacity for Protection from Wildfire:
http://www.forestguild.org/publications/research/2007/community_capacity_wildfire.pdf
- Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities:
<http://www.cafiresafecouncil.org/wp-content/uploads/2011/07/CWPP-Preparing-a-CWPP.pdf>

APPENDICES

Community Selection Criteria

Relationship to Wildfire Hazard

Potential Candidates

- High to moderate fire risk
- Experience dealing with wildfires in or near the community
- Recently dealt with big fire
- Broad interest and support for developing a more thorough wildfire risk analysis in the WUI.
- Known WUI problem with moderate to heavy development pressure
- Completed more detailed local mapping and analysis of wildfire risk (beyond high-level)

Land Use Policy and Regulation

Potential Candidates

- Recent or planned updates to land use regulations (subdivision and/or zoning)
- Recent or planned updates or initial development of Comprehensive Plan, Community Wildfire Protection Plan (CWPP), or Local Hazards Mitigation Plan (LHMP)
- Current policies and/or regulatory documents in place with a focus on environmental protection, sustainable community development, natural resources, and/or wildfire or other natural hazards
- Development review process is viewed as fair and consistent

Administrative Capacity and Commitment

Potential Candidates

- Community has received state or federal assistance recently related to a wildfire
- Current staff has the capacity necessary to maintain or administer the program/policy/regulation following this project [NOTE: Under-staffed communities could also benefit from this technical assistance]
- Strong support from the community to develop policies or regulations that address the WUI and/or wildfires
- Strong support from elected/appointed officials to develop policies or regulations that address the WUI and/or wildfires
- Programs in place that illustrate community commitment to addressing WUI risk
- Planning staff and emergency management staff have solid history of effective collaboration
- Dedicated WUI or hazard specialist (e.g., mitigation officer, wildfire planner, etc.)
- No known organized major opposition exists related to land use planning or wildfire policy/regulation development
- Local advocate groups and/or individuals (outside of local government staff) willing to champion the project

Memorandum of Understanding (MOU) Template

The following components were addressed in a Memorandum of Understanding (MOU) for working with Summit County on recommendations for policies and recommendations to reduce community risk to wildfire.

Article 1 – Intent and Purpose

Section 1.1 Intent and Purpose of Memorandum

This section includes background information, including basic goals and objectives for the project.

Section 1.2 Implementation of Memorandum

This section establishes the basic intent of the MOU, including any project limitations.

Article 2 – Project

Section 2.1 Local Government Responsibilities

This section describes what the participating local government responsibilities, including provisions for general oversight and direction, access to background materials, expectations for feedback, and meeting logistics.

Section 2.2 Consultant Responsibilities

This section establishes the general scope of work for the consulting team, describing the research and analysis to be conducted and the level of recommendations expected from the team.

Section 2.4 Contact Persons

This section identifies key contacts for both the local government and the consulting team.

Article 3 – General Provisions

Section 3.1 Insurance and Indemnification

This section including provisions for indemnification should claims or damages arise as a result of the project.

Section 3.2 Termination

This section establishes a mechanism for terminating the MOU between the team and the local government.

Section 3.3 Notices

This section provides specifics for any required notices as part of the project.

Section 3.4 Amendment

This section establishes the process for amending the MOU.

Section 3.5 Applicable Law

This section includes a statement regarding the MOU being in accordance with state law.

Section 3.6 Legal Effect of Memorandum

This section identifies legal limitations of the MOU and establishes the framework for the consulting services.

Signature Blocks

The MOU includes signature blocks for each member of the consulting team and the chair of the elected body.

