



# Multihazard Planning Framework for Communities in the Wildland-Urban Interface



**American Planning Association**

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# Multihazard Planning Framework for Communities in the Wildland-Urban Interface—Executive Summary

This planning framework and the accompanying planning systems audit tool are designed for use by planners working in or with communities located in the wildland-urban interface (WUI). The framework provides a menu of planning tools that communities can use to address the range of natural hazards that communities in the WUI may face. The planning systems audit is designed to help communities assess how their current plans and policies address multihazard risk, as well as to evaluate alignment between plans, policies, and public investments.

## Addressing Challenges in the Wildland-Urban Interface

Over the last several decades, growth in the WUI has increased rapidly. The WUI now accounts for 10 percent of all land area in the conterminous U.S. One-third of homes are located in the WUI and nearly one-third of the U.S. population lives in the WUI. Large wildfires, such as those in Northern California in the fall of 2017, the Great Smoky Mountain wildfires in 2016, and the Waldo Canyon Fire in 2012, have increased awareness about WUI conditions and challenges related to wildfire.

While wildfire may be the primary hazard in some WUI communities, in other communities it is just one of the natural hazards that must be addressed. As a result, this planning framework presents a multihazards approach. This approach recognizes that communities are at risk for and, therefore, must plan for multiple hazards and the associated risks.

For communities in the WUI, proactively addressing hazard risk through plans, land-use and development regulations, and public investments can help mitigate these risks. It can also help build community awareness about risks and actions that home owners and business owners can take to help reduce them.

## The Planning Framework

This framework focuses on a holistic planning approach, which creates consistency across locally applicable plans, and the policies and public investment programs that are used to implement them. It focuses on planning interventions in three categories:

1. **Plans.** Plans identify priorities, set goals, and define actions to achieve those goals. The planning process

engages the public and allows for collaborative work with a range of community stakeholders. When it comes to addressing hazards, the planning process can be important to building community buy-in for action.

2. **Land-use and development regulations.** Land-use and development regulations, including the zoning ordinance and subdivision regulations, create the regulatory framework for development within a community. They are the primary tools for advancing the goals and policies in the comprehensive plan and other community plans. As a result, they are important tools for addressing and mitigating hazard risk.
3. **Public investments.** Public investments, which include capital improvements, financial incentives and direct financial assistance to home owners and businesses, technical assistance, and education and outreach programs, are important tools for advancing hazard mitigation goals.

For each of these categories, this framework defines specific planning tools and how they can be used to address and mitigate hazard risk. It further defines the hazards relevant to each tool.

The framework also addresses the scale of each planning intervention and denotes when an intervention may be applicable at multiple scales. The defined scales are:

- Regional: Multijurisdictional (e.g., city, county, fire district, flood control district)
- Community: A jurisdiction such as a city or county or a large area within a jurisdiction
- Neighborhood: Geographic subareas of the community, including residential neighborhoods and downtown areas
- Site: A parcel or combination of parcels

Not all of the tools outlined in this framework will be appropriate for all communities. It is important to consider community context, including local goals and priorities, when developing plans and related policies and public investments.

# Multihazard Planning Framework for Communities in the Wildland-Urban Interface

The wildland-urban interface (WUI) can be defined as the area where human development borders or intermingles with forests or other wildlands (e.g., grasslands). The WUI can be further defined as the “interface” and the “intermix.” The “interface” is an area where development is clustered adjacent to wildlands, whereas the “intermix” is an area where development is interspersed with wildlands. While the WUI can be spatially defined in terms of the relationship of developed land to wildlands, it can also be thought of as a set of conditions where the relationship between development and wildlands increases the risk of or exposure to wildfire.

## The Wildland-Urban Interface: Trends and Challenges

Over the last several decades, the pace of development in the WUI has accelerated. There are multiple drivers of growth in the WUI, including a desire to live in proximity to open spaces due to their recreational and scenic value. Between 1990 and 2010, the overall area of the WUI increased by 33 percent (from 581,000 to 770,000 km<sup>2</sup>), while the number of housing units in the WUI increased by 41 percent (from 30.8 million to 43.4 million homes). This accounts for 43 percent of new home construction over this period. The WUI occupies less than 10 percent of the land area in the conterminous U.S.; however, 33 percent of homes and 32 percent of the population are located in the WUI.<sup>1</sup>

These development patterns mean that more communities are located either partially or entirely in the WUI and must manage and plan for WUI development and the related natural resources management and natural hazard challenges. Development in the WUI increases the risks associated with community exposure to wildfire, as well as potential costs, including property damage and loss of life. As communities develop in the WUI, it brings people and structures into closer proximity with wildlands. This proximity to wildlands increases the likelihood of human-caused ignitions (which are responsible for 84 percent of wildfires and

are estimated to have tripled the length of the fire season)<sup>2</sup>, facilitates the movement of wildfire between structures, and increases the dangers and costs associated with firefighting.

## Planning for Wildfires and Other Hazards – A Multi-Hazard Framework

Wildfire is often thought of as a western issue; however, WUI environments exist across the country. In some WUI communities, wildfire may be the primary hazard that they face, while in others it may be just one of the natural hazard risks they must balance.

For communities in the WUI, proactively addressing wildfire risk through plans, land-use and development regulations, and public investments can help mitigate these risks. It can also help build community awareness about risks and actions that home owners and business owners can take to help reduce them.

## A Multihazard Approach for Communities in the WUI

While WUI development in fire-prone areas increases community exposure and risk related to wildfire, wildfires are not the only natural hazard that communities in the WUI face. This planning framework presents a multihazards approach, which recognizes that communities are at risk for and must plan for multiple hazards. Sometimes those hazards are interrelated, such as the increased risk of wildfire from drought. Sometimes they are unrelated, such as wildfires and hurricanes.

This planning framework is designed to provide planning tools to address the range of natural hazards that communities in the WUI may face. It focuses on three categories of planning interventions that communities can use to address natural hazard risk: 1) plans, 2) land-use and development regulations, and 3) public investments. It also addresses different scales of planning intervention—from the regional scale to the site scale. And it denotes which tools are relevant to which hazards.

**Table 1. Types of Hazards**

<b>Atmospheric Hazards</b>	<b>Geologic and Seismic Hazards</b>	<b>Hydrologic Hazards</b>	<b>Other Hazards</b>
Hurricanes Coastal storms Extreme heat Severe thunderstorms Severe winter storms Windstorms	Landslide Expansive soils Earthquakes	Flood Drought	Wildfire

*Types of Hazards*

Natural hazards primarily fall into four categories: atmospheric, geologic/seismic, hydrologic, and other. Atmospheric hazards are those related to atmospheric conditions, such as temperature, precipitation, and wind. Geologic and seismic hazards relate to changes of movements in the earth’s surface. Hydrologic hazards relate to the presence of water, whether that be too much or too little.

The hazards listed in the table above do not represent all natural hazards, and communities may face natural hazards not addressed in this framework (e.g., avalanche, tsunami, tornadoes, volcanoes).

*Relationships Between Natural Hazards*

Natural hazards have complex interrelationships. Impacts from one natural hazard event often have cascading effects, increasing the likelihood of other hazard events. For example, drought creates dry conditions that facilitate wildfire, while windstorms can make it spread faster and farther. Wildfires can damage watersheds and facilitate flood conditions, while severe thunderstorms cause heavy rainfall that leads to flooding. Flooding, in turn, increases the probability of landslides. As a result, it is important for communities to consider the multiple natural hazard risks that they face and their potential impacts and to develop a balanced approach to addressing and mitigating these hazards in a manner that meets the community’s needs.

*Hazard Scale*

Natural hazards and the natural disasters that result often extend beyond jurisdictional boundaries. A wildfire, flood, drought, or hurricane can affect multiple communities spanning multiple jurisdictions, resulting

in impacts that are regional or interregional in scale. Just as natural hazard risks and hazard events can have impacts across jurisdictional boundaries, so too can local actions. For example, local development decisions that adversely impact wetlands can increase flood risk in neighboring jurisdictions. As a result, it is important to consider natural hazard risk and how local planning and development decisions may have impacts that extend beyond jurisdictional boundaries.

*Assessing Hazard Risk*

In order to plan for and select strategies to mitigate hazard risk, communities need to have a clear idea of what those risks are. Risks can be defined as the impacts on the community from a hazard event. The Federal Emergency Management Agency (FEMA) defines risk as the intersection of hazards (e.g., wildfire) and community assets, including the built environment, natural and open spaces, the local economy, and community members.



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FEMA outlines hazard risk assessment as a four-step process through which communities 1) define hazards, 2) identify community assets, 3) analyze risks, and 4) summarize vulnerability.

For the first step—defining hazards—communities identify what the natural hazard is, its location within the planning area, the extent (severity) of the hazard, and both past occurrences of the hazard and the future probability that it will occur within the planning area. For the second step—identifying community assets—communities identify those assets that are of value to the community and which of those assets may be vulnerable to natural hazard events. The third step—analyzing risks—looks at the potential overlap between defined natural hazards and vulnerable community assets and examines potential losses associated with those risks. The final step—summarizing vulnerability—communicates the risks in a way that community stakeholders and decision makers can understand.

Related Resources:

- [Local Mitigation Planning Handbook](#)
- [Hazard Identification and Risk Assessment](#)

## Data Sources for Defining Hazards

There are many tools and data sources that can be used to help define and map natural hazard risk. Below are several nationally available tools and datasets that can help communities assess and plan for natural hazard risk.

- [OpenFEMA](#). This FEMA Open Data Portal includes a number of datasets, including major disaster declarations, emergency declarations, fire management assistance declarations, and flood maps.
- [i-Tree Landscape](#). This tool allows users to explore data layers including tree canopy, land cover, wildfire potential, forest pests, and future climate conditions for different geographies.
- [SILVIS Lab–The Wildland Urban Interface](#). This data illustrates the location of the WUI and change over time in 1990, 2000, and 2010.
- [USGS Seismic Hazard Maps and Site-Specific Data](#) – This U.S. Geological Survey data includes seismicity data for the lower 48 states, Alaska, Hawaii, and U.S. Territories.

## Mapping Natural Hazard Risk

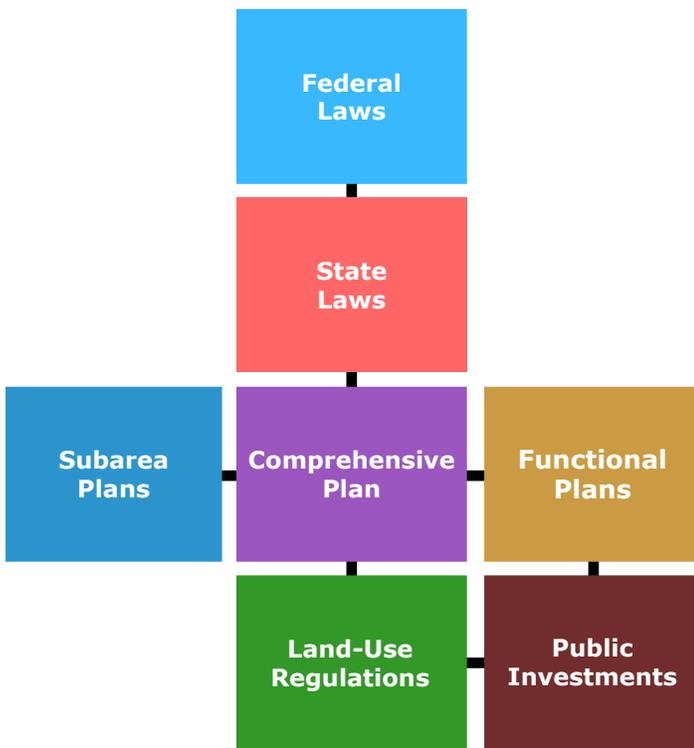
Maps are an effective tool for visualizing and communicating natural hazard risk and extent. They can be used at different scales to identify key areas for planning interventions and to communicate vulnerability to hazard risk to residents and decision makers. Mapping natural hazard risk can be used to create a visual analysis of the overlap between defined natural hazards and vulnerable community assets. Maps can also be used to help visualize changes over time, such as coastal areas that will be impacted by sea-level rise.

## Planning Framework

### A Holistic Planning Approach

This framework focuses on a holistic planning approach. A holistic planning approach creates consistency across locally applicable plans and the policies and public investment programs that implement them. It looks at the aggregate effects of locally adopted and applicable plans and ensures consistency between local plans and their associated implementation mechanisms, as well as consistency among plans and with applicable federal and state laws. Consistency among plans and between plans and related implementation mechanisms creates a clear policy direction for the local jurisdiction and facilitates successful implementation of plans and policies.

**Figure 1. A holistic planning approach**



### Consistency With Federal and State Laws and Regulations

Plans that address hazard mitigation should be consistent with all applicable federal and state laws. Relevant federal laws may include the Disaster Mitigation Act of 2000 and the Healthy Forests Restoration Act of

2003. Applicable state laws may include those related to comprehensive plan requirements, growth management, forest conservation, critical area protection, or watershed improvement, among others.

### Disaster Mitigation Act of 2000 and Healthy Forests Restoration Act of 2003

#### **The Disaster Mitigation Act of 2000**

The Disaster Mitigation Act (DMA) of 2000 amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act, which was passed in 1988. The DMA requires state and local governments to prepare multihazard mitigation plans as a precondition of receiving federal hazard mitigation funding, with the goal of reducing disaster losses and increasing the effectiveness of federally funded mitigation projects through planning. It also established a Pre-Disaster Mitigation program, which provides funding and technical assistance for pre-disaster mitigation activities.

#### **Healthy Forests Restoration Act of 2003**

The Healthy Forests Restoration Act (HFRA) aims to protect communities from wildfire by providing funding and guidance for forest management activities, including hazardous fuels reduction. The HFRA defines Community Wildfire Protection Plans (CWPPs) and requires federal land management agencies (e.g., the Bureau of Land Management, the U.S. Forest Service) to use CWPPs to prioritize funding for fuel-reduction projects on both federal and non-federal lands. The CWPP is voluntary, and must result from a collaborative process, prioritize areas for fuel reduction, and address treatments for structural ignitability. Adopting a CWPP also allows a community to locally define the boundaries of the WUI. (CWPPs are further addressed in the *Plans* section of this Framework.)

## *Consistency Among Plans*

The responsibility for different plans is often the purview of different departments or agencies. For example, the local planning department may oversee the preparation and adoption of the local comprehensive plan, while the Community Wildfire Protection Plan and Hazard Mitigation Plan may be within the scope of the emergency management agency. As a result, there may be gaps or inconsistencies across the plans adopted by a jurisdiction.

As communities in the WUI plan for wildfire and other hazards, it is important to look at consistency across relevant plans. Functional and subarea plans should advance the goals and policy recommendations articulated in the comprehensive plan. The comprehensive plan should, likewise, reference functional and subarea plans to support its goals and policy recommendations. Creating consistency among plans strengthens the goals and policy recommendations and can be important to removing conflicts that hinder successful implementation.

## *Consistency Among Plans, Land-Use and Development Regulations, and Public Investments*

A holistic planning approach also addresses the mechanisms used to implement plans—land-use and development regulations and public investments. Consistent implementation through local regulations

and public investments helps ensure effective implementation of plans; without this consistency, results may be at odds with stated policy goals. Plans should address local regulations and public investments in their implementation sections.

State law may require that zoning ordinances and other regulations related to development be consistent with the goals and policy statements in the comprehensive plan. In addition to creating consistency between plans and local land-use and development regulations, it is also important for communities to create consistency between public investments and the related policy recommendations and implementation actions outlined in local plans.

## *Note on Regional and Community Context*

This framework presents a menu of planning tools and interventions that communities in the WUI can use to address and mitigate multihazard risk. Not all tools will be appropriate for all communities, and considering community context when evaluating tools and developing plans and related policies and public investments is important to successfully advance local goals. This includes factors such as the balance of new development and existing development. It also includes community capacity for planning and development activities (e.g., staff capacity for planning and implementation, as well as code enforcement), community buy-in, the local regulatory environment, and financing.



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**Table 2. Planning Interventions Across Scales**

<b>Scale</b>	<b>Regional Scale</b>	<b>Community Scale</b>	<b>Neighborhood Scale</b>	<b>Site Scale</b>
<b>Planning Intervention</b>				
<b>Plans</b>	Regional Green Infrastructure Plan	Comprehensive Plan	Neighborhood Plan	Site Plan
	Watershed Management Plan	Community Wildfire Protection Plan		
		Hazard Mitigation Plan		
	Regional Growth Management Plan	Climate Adaptation Plan		
Parks and Open Space Plan				
<b>Land-Use/ Development Regulations</b>		Overlay zoning	Cluster subdivision	Landscape standards or guidelines
		Wildland-Urban Interface Code		Defensible space regulations
		Transfer of development rights	Open space requirements	Site plan review for high hazard areas
				Conditional use standards
<b>Public Investments</b>	Land acquisition		Neighborhood Risk Assessment	Financial assistance to home owners and businesses
		Public outreach and education programs		
			Firewise USA™ Recognition Program	

**The Framework – Scales and Categories of Planning Interventions**

This framework is designed around the scale of the planning intervention and the type of planning tools. Tools used at the regional scale can help identify areas of natural hazard risk and set priorities for the region as a whole; however, implementation of regional plans ultimately relies on local plans, policies, and investments. As a result, this framework addresses planning interventions across scales, from the regional to the site. It includes tools for examining, addressing, and planning for multihazard risk at the regional scale; it also addresses the plans, land-use and development regulations, and public investments that can be used to implement regional goals through local actions.

The scales are defined as regional, community, neighborhood, and site.

- Regional: Multijurisdictional (e.g., city, county, fire district, flood control district)

- Community: A jurisdiction such as a city or county or a large area within a jurisdiction
- Neighborhood: Geographic subareas of the community, including residential neighborhoods and downtown areas
- Site: A parcel or combination of parcels

Planning interventions are categorized as plans, land-use and development regulations, and public investments. Each tool is presented at the scale at which it is most often applied or most effective, though it may also be applicable at other scales. For example, hazard mitigation plans are often prepared and adopted by local governments, but can be regional in scale.

Not all planning tools and interventions address all hazards. For each tool, the hazards addressed are identified. In some cases, tools are addressed at multiple scales.

## Plans

Different types of plans are adopted at different scales. Plans identify priorities, set goals, and define actions to achieve those goals. The planning process engages the public and allows for collaborative work with a range of community stakeholders. When it comes to addressing hazards, the planning process can be important to building community buy-in for action.

**Table 3. Plans**

Scale	Regional Scale	Community Scale	Neighborhood Scale	Site Scale
Plan Type	Regional Green Infrastructure Plan	Comprehensive Plan	Neighborhood Plan	Site Plan
		Community Wildfire Protection Plan		
	Watershed Management Plan	Hazard Mitigation Plan		
	Regional Growth Management Plan	Climate Adaptation Plan		
		Parks and Open Space Plan		

### *Regional Green Infrastructure Plan*

Green infrastructure includes a set of practices that span from the regional to site scale, including conservation and protection of land, natural and nature-based systems (engineered systems, such as constructed wetlands, that replicate natural processes), and green stormwater infrastructure (e.g., bioswales, raingardens). Regional green infrastructure plans define regional green infrastructure priorities and networks. These plans span jurisdictional boundaries, which allows for a coordinated regional vision, a broad look at regional green infrastructure assets, and engagement of a wide range of stakeholders. It also creates the potential for resource efficiencies related to implementation.

Regional green infrastructure plans are multifunctional and multibenefit. They provide the opportunity to take a broader perspective and look at how systems connect across the region. They can also create synergies between green infrastructure and other goals and priorities, such as watershed management,

sustainability, and resiliency. They can include regionally coordinated goals and objectives for addressing and mitigating hazard risk. Green infrastructure networks at the regional scale can also contribute to shaping development patterns in a way that mitigates hazard risk.

Regional planning agencies, such as regional planning commissions, regional councils, or councils of government, are well positioned to take the lead role in coordinating regional green infrastructure planning efforts. Many already have established programs focused on related issues, including water conservation, natural resources, and open space preservation.

**Addressing Hazard Risk.** At the regional scale, green infrastructure plans allow communities to look at opportunities to mitigate hazard risk in concert with other priorities, including open space preservation, access to recreational opportunities, and economic development. Below are specific ways that green infrastructure plans can address hazard risk:

- Identify alignment between green infrastructure goals, priorities, and assets, and strategies for hazard mitigation goals, priorities, and strategies
- Reference local hazard mitigation plans
- Reference local comprehensive plans
- Address potential conflicts between green infrastructure and WUI conditions (such as an increase in hazardous fuels as part of a green infrastructure network)
- Identify clear responsibilities among local jurisdictions and stakeholders for implementation

**Hazards addressed:** hurricanes, coastal storms, severe thunderstorms, severe winter storms, landslides, expansive soils, floods, drought, wildfires

**Scale:** Regional

**Related Resources:** [Green Infrastructure: A Landscape Approach](#)



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Wasco County, OR, is currently updating its Comprehensive Plan and exploring how land use planning tools can reduce wildfire risk.

### *Watershed Management Plan*

Watershed management plans address the protection and restoration of water resources. They focus on identifying point and nonpoint sources of water pollution within the watershed boundary and developing strategies to address water quality challenges. Watershed management plans may be prepared by local agencies. However, entities such as watershed organizations or flood control districts, which represent multiple jurisdictions and stakeholders within the boundaries of a watershed, often take a leadership role in developing watershed management plans.

**Addressing Hazard Risk.** Strategies contained in watershed management plans that help restore or protect water resources can also mitigate other hazards, including floods, landslides, and wildfires. Below are specific ways that watershed management plans can address hazard risk:

- Identify alignment between watershed management, priorities, and hazard mitigation goals, priorities, and strategies
- Reference local hazard mitigation plans
- Reference local comprehensive plans
- Identify clear responsibilities among local jurisdictions and stakeholders for implementation

**Hazards Addressed:** hurricanes, coastal storms, severe thunderstorms, severe winter storms, landslides, expansive soils, drought, wildfires

**Scale:** Regional

**Related Resources:** [Handbook for Developing Watershed Plans to Restore and Protect Our Waters](#)

### *Regional Growth Management Plan*

A regional growth management plan or strategy is a coordinated approach to looking at growth at the regional scale. Regional growth management plans analyze population projections and patterns of growth. They include strategies for accommodating new growth, often in areas with existing development or designated growth areas, and address issues including transportation connections, access to jobs and services, and economic development. Regional growth management plans can be used to direct new growth away from high-risk or high-hazard areas and to protect and preserve areas of environmental or ecological significance.

**Addressing Hazard Risk.** Strategies contained in regional growth management strategies can help direct growth away from high-hazard areas. Below are specific ways that regional growth management plans can address hazard risk:

- Identify alignment between the regional growth management strategy and hazard mitigation goals, priorities, and strategies
- Prioritize growth and development outside of high-hazard areas, including floodplains and high wildfire hazard areas
- Limit infrastructure extensions (roads, water, sewer) that would promote growth in high-hazard areas
- Reference local comprehensive plans
- Identify clear responsibilities among local jurisdictions and stakeholders for implementation

**Hazards Addressed:** All

**Scale:** Regional

**Related Resources:** [Emerging Trends in Regional Planning](#)



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### *Comprehensive Plan*

The comprehensive plan, also called a general plan or master plan, is the foundational local policy document. The comprehensive plan has a 20- to 30-year planning horizon and a broad scope. It looks at existing conditions within the community and analyzes trends. It defines a vision for the community, and includes goals, objectives, and policy statements to address future growth and change.

Every state has enabling legislation that either allows or requires local governments to adopt comprehensive plans. The prescriptiveness of comprehensive planning enabling legislation varies; as a result, comprehensive planning is more prevalent in some states than in others.

Comprehensive plans are generally arranged around elements, or thematic chapters. Traditional elements include land use, transportation, housing, economic development, natural resources, and community facilities. Increasingly, comprehensive plans are organized around themes that cut across these elements, while expanding to include additional elements such as intergovernmental cooperation, sustainability, and natural hazards.

**Addressing Hazard Risk.** The comprehensive plan provides a long-term outlook at a broad range of interrelated community issues. It offers the opportunity to look at where community goals and priorities may come into conflict with each other and to set long-term priorities, supported by goals, objectives, and policy statements. Below are specific ways that communities can use the comprehensive plan to address hazard risk:

- Include a Natural Hazards or Hazard Mitigation element in the plan
- Incorporate specific goals, objectives, and policy statements related to local hazard mitigation throughout the plan
- Include identified hazard risks on the Future Land-Use Map
- Map future land-use scenarios that account for local hazard risks
- Limit infrastructure extensions (roads, water, sewer) that would promote growth in high-hazard areas
- Ensure alignment between the comprehensive plan and other local plans addressing hazard risk (e.g., Community Wildfire Protection Plan, Hazard Mitigation Plan).

**Hazards Addressed:** All

**Scale:** Community

**Related Resources:** [Sustaining Places: Best Practices for Comprehensive Plans](#)

### *Community Wildfire Protection Plan*

Congress passed the HFRA in 2003 with the goal of reducing wildfire risk. The Act defines and authorizes communities to adopt CWPPs. CWPPs are voluntary, collaboratively developed plans that allow communities to address their local risk for wildfire. CWPPs may be prepared at various scales, including city, neighborhood, subdivision/home owners association, or fire district. They are often prepared at the county level.

CWPPs must meet three minimum requirements, as defined by the HFRA (16 U.S.C. §6511):

- Collaboration. CWPPs need to be collaboratively developed by local and state government agencies with input from stakeholders, including representatives of federal agencies and other interested parties (e.g., home owners associations, water districts, environmental organizations).
- Prioritized Fuel Reduction. CWPPs are required to both identify and prioritize areas for hazardous fuel

reduction treatments. They must also recommend types of treatment (e.g., thinning trees, removing underbrush).

- Treatment of Structure Ignitability. CWPPs must recommend actions that community members and home owners can take to reduce the risk of structures igniting within the plan’s area.

The final plan must be agreed upon by the local government entity, the local fire department, and the state forestry agency. Once the plan has been adopted, federal land management agencies, such as the Bureau of Land Management and the U.S. Forest Service, must use CWPPs to prioritize funding for fuel-reduction projects on both federal and non-federal lands.

Adopting a CWPP can also have other benefits for communities. They allow communities to locally define the boundaries of the WUI, which are otherwise defined by the HFRA. They bring together a range of stakeholders, which can lead to open discussion about fire management needs and challenges and how these relate to other community priorities, and may lead to greater community buy-in and success in implementing the goals of the plan.

**Hazard Addressed:** Wildfire

**Scale:** Community, Neighborhood

**Related Resources:** [Community Guide to Preparing and Implementing a Community Wildfire Protection Plan](#)

[Best Management Practices for Creating a Community Wildfire Protection Plan](#)



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### *Hazard Mitigation Plan*

Hazard mitigation plans, sometimes referred to as multihazard mitigation plans, allow communities to take action before a disaster strikes. Mitigation planning focuses on developing long-term strategies that help communities minimize the risks associated with hazards.

Through the preparation of a hazard mitigation plan, communities identify, assess, and understand risks and develop strategies that will mitigate the impact of those risks on the community. Effective hazard mitigation planning can help reduce the impacts from a natural disaster by protecting public health and safety, reducing costs associated with property damage, and reducing the costs of disaster response. It can also be used to achieve other community goals—for example, investment in green infrastructure may mitigate flood risk while preserving open space, increasing recreational opportunities, and improving air and water quality.

Based on Section 322 of the Disaster Mitigation Act of 2000, hazard mitigation plans approved by FEMA are required in order to receive nonemergency federal disaster assistance, which includes funding for mitigation projects. Communities are required to update and resubmit their Hazard Mitigation plans to FEMA every five years to remain eligible for mitigation funding.

**Hazard Addressed:** All

**Scale:** Community

**Related Resources:** [Local Mitigation Planning Handbook](#)

[Integrating Disaster Data into Hazard Mitigation Planning](#)

[Hazard Mitigation: Integrating Best Practices into Planning](#)



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### *Climate Adaptation Plan*

Climate Adaptation or Climate Action Plans are a type of functional plan that communities adopt to address climate change-related challenges. These plans identify local impacts from climate change and related risks and vulnerabilities. They are focused on strategies and actions to reduce greenhouse gas emissions, such as increasing energy efficiency of municipal buildings or the community's reliance on renewable energy. They may also include strategies for adapting to the risks and adverse impacts associated with climate change, such as investing in green infrastructure to improve stormwater management and mitigate flooding.

**Hazard Addressed:** Hurricanes, coastal storms, extreme heat, severe thunderstorms, severe winter storms, windstorms, flood, drought, wildfire

**Scale:** Community

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### *Parks and Open Space Plan*

Parks and open space plans are a type of functional plan that address the provision of parks and open spaces within a community. Parks and open space planning takes place at different scales, including state and regional, but is often locally focused. These plans generally look at parks and open spaces as multifunctional—that is, areas that may provide important environmental or ecological functions while serving as places for recreation and community gatherings, and providing economic development potential.

Parks and open space plans advance parks and open space goals outlined in the comprehensive plan and provide an opportunity to define what constitutes a park; to address the benefits related to the provision of parks and open space, including protecting environmental and cultural resources, public health, and potential economic benefits to surrounding businesses; and to define locally appropriate level of service standards for the quantity of open space within a jurisdiction, as well as proximity and accessibility of parks for residents.

**Hazard Addressed:** Hurricanes, coastal storms, severe thunderstorms, severe winter storms, landslides, expansive soils, floods, drought, wildfires

**Scale:** Community

**Related Resources:** [From Recreation to Re-creation: New Directions in Parks and Open Space System Planning](#)

### *Neighborhood Plan*

Neighborhood plans are used to plan for specific subareas of a community. The further advance and develop the goals and policies in the comprehensive plan. They provide a greater level of granularity and often focus on shorter planning horizons than the comprehensive plan. They also focus on specific needs or problems facing a specific neighborhood area and may be used to address specific hazard mitigation strategies within the defined subarea. For example, if a neighborhood faces frequent flooding, a neighborhood plan may include specific goals, objectives, and implementation actions, such as the installation of green stormwater infrastructure at identified sites, to mitigate the hazard risk.

**Hazard Addressed:** Hurricanes, coastal storms, floods, drought, wildfires

**Scale:** Neighborhood

**Related Resources:** [Neighborhood Planning](#)

### *Site Plan*

Site plans are scaled drawings that show the location of development on a parcel or set of parcels. Components of the proposed development on the parcel(s) include configuration of buildings and location of open space, parking, street access, etc. The intent of site plans is to lead to engineered drawings and, ultimately, construction on the site. Site plans are an opportunity to address site scale conditions (e.g., steep slopes).

Site design standards and site plan review in high hazard areas in the development regulations can further require special review of site plans in high hazard areas. These are further discussed in the Land Use and Development Regulations section.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, floods, drought, wildfires

**Scale:** Site

## Land Use and Development Regulations

Land-use and development regulations, including the zoning ordinance and subdivision regulations, create the regulatory framework for development within a community. They are the primary tools for advancing the goals and policies in the comprehensive plan and other community plans. As a result, they are important tools for addressing and mitigating hazard risk.

**Table 4. Land Use and Developmental Regulations**

Scale	Regional Scale	Community Scale	Neighborhood Scale	Site Scale
Land-Use/ Development Regulation Type		Overlay zoning	Subdivision regulations	Landscape standards or guidelines
			Cluster Subdivision	
		Wildland-Urban Interface Code		Defensible space regulations
		Transfer of development rights		Site plan review for high-hazard areas
				Conditional use standards

### Overlay Zoning

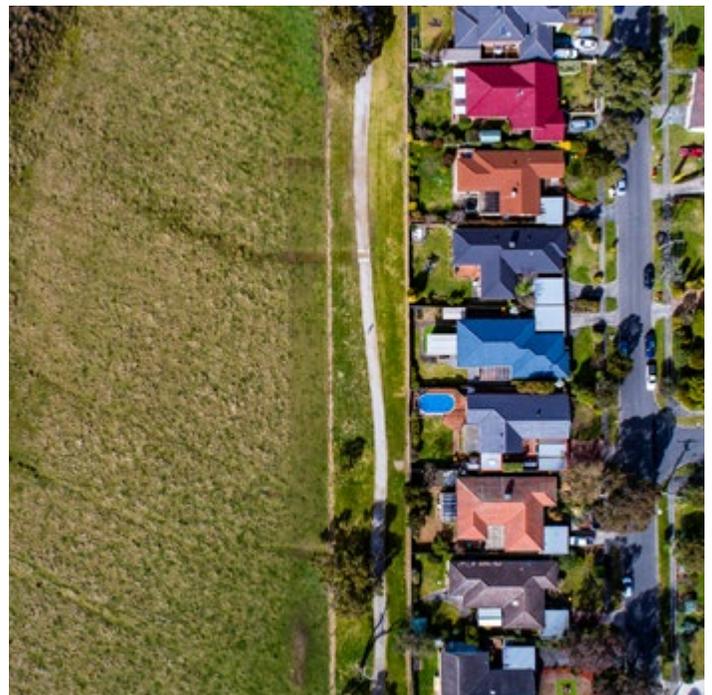
Overlay zoning is used to apply additional standards that address a designated purpose. Overlay zones are applied as a supplemental designation that modifies the base zoning provisions of the zoning district, creating area-specific standards. Overlay zones are used for a wide variety of purposes, from historic preservation to environmental protection.

**Addressing Hazard Risk.** Multiple types of overlay zones may be appropriate for addressing community hazard risk. These include natural resource, conservation, floodplain, open space, and wildland-urban interface overlay zoning districts.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, wildfires

Scale: Community

**Related Resources:** [Making Use of Overlay Zones](#)



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### *Wildland-Urban Interface Code*

A WUI code is intended to promote safer building and development within the wildland-urban interface in order to address protection of life and property from wildfire by preventing wildland fire from spreading to structures and structural fires from spreading to surrounding wildlands. It establishes minimum regulations related to the density and location of structures, allowable building materials, and vegetation management, as well as emergency vehicle access and water supply. The WUI code generally supplements local building and fire codes. It is intended to supplement local building and fire codes.

The International WUI Code provides a model.

**Hazard Addressed:** Wildfire

**Scale:** Community

**Related Resources:** [Wildland-Urban Interface Toolkit: Codes and Standards](#)

[International Wildland-Urban Interface Code 2015](#)

### *Transfer of Development Rights*

Transfer of Development Rights (TDR) programs permanently preserve and protect open space or other ecologically important areas in exchange for higher density development in other areas of the community. To achieve this, TDR programs designate “sending areas,” or areas for conservation, and “receiving areas,” or areas where development is encouraged. These areas may be identified either in the zoning ordinance or through overlay zones.

Through TDR programs, landowners in sending areas are able to sell the development rights to their properties. The development rights are then legally severed from that land and made available for purchase within the receiving area. Developers are able to purchase development rights, which are often administered through a TDR bank but may also be purchased directly from landowners, and apply the transferred value. This may take the form of additional density on the site.

**Addressing Hazard Risk.** TDR programs are designed to permanently protect open space and ecologically sensitive areas, which can include areas of high hazard risk. When setting up a TDR program and drawing the boundaries of the sending area, communities should consider protecting both areas that are of hazard risk (e.g., flood plains) and areas that play a role in mitigating hazard risk (e.g., wetlands).

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, flood, wildfires

**Scale:** Community

**Related Resources:** [Transfer of Development Rights](#)

## Subdivision Regulations

Subdivision regulations control the division of a parcel of land into lots for building and development. Subdivision regulations address a range of conditions on the parcel, including access (ingress/egress), roads, water and sewer infrastructure, landscaping, and street signage. They also define the allowable density of development on the parcel and may enumerate requirements for open space within the development. The subdivision review process allows local planning officials to evaluate subdivision proposals for conformance with the local comprehensive plan and applicable zoning regulations. Subdivision regulations may address clustering of buildings on the site (cluster subdivisions), which are further elaborated on below.

**Addressing hazard risk.** A locality may use subdivision regulations to prohibit or limit development in hazard-prone areas, including floodplains and high wildfire hazard areas. Subdivision regulations can also address specific actions that mitigate natural hazards, such as stabilization of steep slopes, and to facilitate response to hazards, such as provision of water supply for wildfires.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, floods, drought, wildfires

**Scale:** Neighborhood

**Related Resources:**

[An Introduction to Subdivision Regulations](#)

[Subdivision Design and Flood Hazard Areas](#)



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Homes in the wildland-urban interface require additional mitigation considerations when located near slopes, such as this community in San Diego, CA.

## Cluster Subdivision Standards

Cluster subdivisions, also referred to as conservation subdivisions, group buildings and structures together on the site and preserve the remaining land as open space. The design of cluster subdivisions, which is implemented through a community's subdivision regulations, generally does not increase the overall density on the site, but instead places the buildings in a clustered form on smaller lots. Clustering allows for the preservation of natural and open spaces with value for recreation and conservation, the protection of ecologically important or environmentally sensitive areas, and the efficient provision of services.

**Addressing Hazard Risk.** Clustering development can preserve valuable open space and reduce risk related to placing homes or other structures in proximity to ecologically sensitive or high-hazard areas. It can be used to limit development in floodplains or in flood-prone areas and to create fuel breaks and defensible space around residential development. It is important for communities to clearly articulate the goals of cluster subdivision design, whether that be limiting development in high-hazard areas or protecting open space as a community amenity.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, floods, wildfires

**Scale:** Neighborhood

**Related Resources:** [Cluster Development: Modern Application of Old Town Form](#)

### *Landscape Standards or Guidelines*

Landscape standards address the landscaping on a site, specifying the types of plants allowable, the amount and location of landscaping, and required maintenance. While they are often focused the aesthetic dimensions of landscaping, these standards can also be used to promote the use of native plants or fire-resistant plants.

**Hazard Addressed:** Floods, drought, wildfires

**Scale:** Site

**Related Resources:** [Fire Resistant Landscaping \(Cal Fire\)](#)

### *Defensible Space Regulations*

Defensible space regulations are focused on creating a buffer between structures and wildlands in order to reduce the likelihood of structural damage from flames and increase the likelihood that the structure will withstand a wildfire. Defensible space regulations define zones for the removal of vegetation and debris around the structure, and vegetation spacing and treatments to create a buffer between the structure and the surrounding wildlands.

**Hazard Addressed:** Wildfire

**Scale:** Site

**Related Resources:** [The Basics of Defensible Space and the "Home Ignition Zone"](#)

### *Site Plan Review for High Hazard Areas*

Site plan review is the process through which site plans are reviewed to ensure compliance with the zoning ordinance and consistency with the comprehensive plan, as well as discretionary review criteria related to both on- and off-site conditions. Site plan review may be required to determine compliance with zoning regulations in order to issue zoning permits; to determine whether a variance should be granted; and to determine whether a proposed use is appropriate to the site's context. In the case of discretionary review, the reviewing authority may impose reasonable conditions related to the proposed land use and the characteristics

of the site. It can also consider specific issues, including retention of natural amenities on site, and the placement of buildings and their relationship to their surroundings.

**Addressing Hazard Risk.** The development code can require site plan review for any new development, redevelopment, or modifications to existing development in hazard areas. The community can determine the level of hazard that triggers review (i.e., any site plan within a medium or high fire-hazard area). This allows the reviewing authority to undertake discretionary review of site plans in hazard areas, which provides an avenue to address hazard risk for new development, as well as modifications to existing development.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, floods, wildfires

**Scale:** Site

**Related Resources:** [Site Plan Review](#)

### *Conditional Use Standards*

Conditional uses, also referred to as special uses, special exception uses, and special permits, are uses that are permitted by the zoning ordinance subject to a supplemental set of conditions or regulations. Conditional uses are subject to discretionary review to determine whether or not the proposed use complies with the specific conditions. Conditional use standards can provide flexibility to the uses allowed in the underlying zoning district, while also minimizing potential conflicts between uses. They can also be used to address hazard risk by adding additional conditions to certain land uses, for example by prohibiting a fuel storage facility in a wildfire overlay zone.

**Hazard Addressed:** Hurricanes, coastal storms, landslides, earthquakes, floods, wildfires

**Scale:** Site

**Related Resources:** [Conditional Uses](#)

## Public Investments

Public investments, which include capital improvements, financial incentives and direct financial assistance to home owners and businesses, technical assistance, and education and outreach programs, are an important tool for advancing hazard mitigation goals.

**Table 5. Public Investments**

Scale	Regional Scale	Community Scale	Neighborhood Scale	Site Scale
<i>Public Investment Type</i>	Land acquisition		Neighborhood risk assessment	Financial assistance to home owners and businesses
			Firewise USA™ Recognition Program	
			Public outreach and education programs	

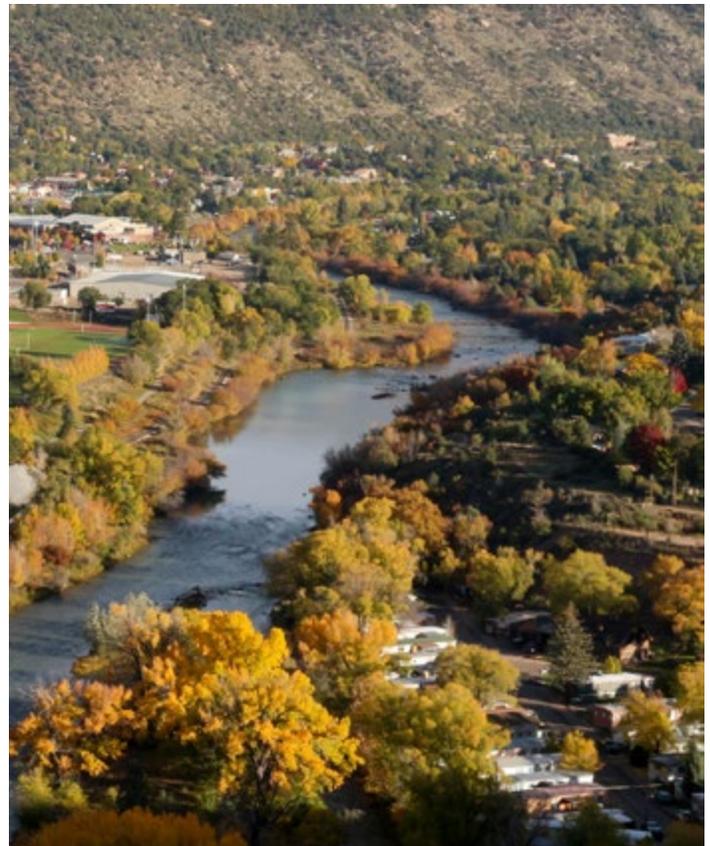
### Land Acquisition

Fee-simple acquisition of land, or the acquisition of land through either purchase or donation by a local, state, or federal agency, is one of the most effective tools to protect and conserve an area. Land acquisition can be used for a variety of purposes, including protecting habitats, watersheds, or areas of community or historic significance. It can provide multiple benefits to the community, including access to recreational opportunities. Land acquisition can also be used as a tool for hazard mitigation, protecting steep slopes, floodplains, and other areas of hazard risk.

Land acquisition can be funded through the Capital Improvements Program, which is a three- to six-year itemized schedule of capital projects— major, nonrecurring expenditures on capital items (i.e., construction and purchases related to community facilities and infrastructure).

**Hazard Addressed:** Hurricanes, coastal storms, landslides, expansive soils, floods, wildfires

**Scale:** Regional, Community



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### *Neighborhood Risk Assessment Programs*

Neighborhood risk assessment programs analyze vulnerability to natural hazard risk at the neighborhood scale. These programs provide a finer level of analysis than regional- or community-scale risk assessment and can be important to helping neighborhood residents understand risks to their home or property.

**Hazard Addressed:** All

**Scale:** Neighborhood

### *Firewise USA™ Recognition Program*

Firewise USA is a program administered by the National Fire Protection Association with support from the U.S. Forest Service, the U.S. Department of the Interior, and the National Association of State Foresters. The program focuses on actions that can be taken by home owners and community members to address wildfire risk across property boundaries in order to help make neighborhoods more resilient to wildfire. The program engages home owners, community leaders, planners, developers, and firefighters and is focused on assessing and addressing fire risk and addressing ignition hazards, particularly those within the home ignition zone. Communities can receive Firewise recognition through a five-step process, which includes obtaining a wildfire risk assessment from a state forestry agency or fire department, creating a local action plan, holding an annual wildfire risk reduction educational event, and investing in wildfire risk reduction activities (a minimum of \$24.14 per dwelling unit, which can be achieved through volunteer hours).

**Hazard Addressed:** Wildfire

**Scale:** Neighborhood

**Related Resources:** [Firewise Toolkit](#)

[Safer from the Start: Guide to Developing Firewise-Friendly Communities](#)

### *Public Outreach and Education Programs*

Public outreach and education programs build awareness about hazard risk within the community. Outreach and education efforts should inform residents about the hazards that the community faces, the risks, and the potential impacts. These efforts should include information on specific actions that residents can take to address hazard risks. They should also include information on resources, such as financial incentives, that available to home owners and residents in order to help them take action to mitigate hazard risk on their properties.

**Hazard Addressed:** All

**Scale:** Community, Neighborhood

### *Financial Assistance to Home Owners and Businesses*

Direct financial assistance to home owners and businesses can take the form of rebates, grants, or loans. Programs that provide financial assistance to home owners and businesses within the community can incentivize action. These programs may be used support the use of rain barrels, tree planting, installation of green stormwater infrastructure, or maintenance of defensible space.

**Hazard Addressed:** All

**Scale:** Site

## Summary

This framework contains a menu of planning tools, designed around the scale of the planning intervention and the type of tools and hazards addressed, that communities in the WUI can use to address and mitigate multihazard risk. It focuses on a holistic planning approach, which creates consistency across locally applicable plans, and the policies and public investment programs that implement them. This approach looks at the cumulative effects of adopted and applicable plans and ensure consistency between plans and their associated implementation mechanisms, as well as consistency among plans and with applicable federal and state laws.

Within this framework, not all tools will be appropriate for all contexts and it is important to consider the balance of regional and local priorities, as well as community capacity for planning and development

activities, community buy-in, the local regulatory environment, and financing. Additionally, considerations of scale are important: planning at the regional scale can bring together a wide range of stakeholders, help identify areas of natural hazard risk, and coordinate priorities for the entire region. Implementation of these regional plans depends on local actions.

## Endnotes

1. Radeloff, V. C., D. Helmers, A. Kramer, M. H. Mockrin, P. Alexandre, A. Bar Massada, V. Butsic, T. J. Hawbaker, S. Martinuzzi, A. D. Syphard, and S. I. Stewart. In review. "Rapid growth of the U.S. Wildland Urban Interface exacerbates wildfire problems". Proceedings of the National Academy of Sciences.
2. Balch, et al. "Human-started wildfires expand the fire niche across the United States." Proceedings of the National Academy of Sciences 114 (11), March 2017: 2946–2951.



Some communities, such as Santa Fe, NM, take active planning steps to balance protecting viewsheds on hillsides with vegetation removal near homes in the wildland-urban interface.

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## Multihazard Planning for Communities in the Wildland-Urban Interface: Planning Systems Audit

This planning systems audit tool is designed to help localities in the wildland-urban interface examine how their plans, land-use and development regulations, and public investments address multihazard risk, and the consistency and alignment between them. This audit is intended to be used in conjunction with the “Multi-Hazards Framework for Communities in the Wildland-Urban Interface.” This audit is designed in three sections. The first section focuses on plans, including the local comprehensive plan, functional plans, and subarea plans. The second section covers land-use and development regulations, and the final section has questions on public investments focused on hazard mitigation.

**Instructions:** Complete the audit for local plans, land-use and development regulations, and public investments. Use the comments section to note where in the plan or regulations the issue is addressed, as well as to add any additional specificity or clarifying information. If completing for a region, complete one audit for each local jurisdiction within the region.



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**Comprehensive Plan.** The comprehensive plan, also called the general plan or the master plan, is the foundational local policy document. The comprehensive plan has a 20- to 30-year planning horizon and a broad scope. It looks at existing conditions within the community and analyzes trends. It defines a vision for the community, and includes goals, objectives, and policy statements to address future growth and change.

Audit Questions	Yes	No	NA	Comments
1. Does your jurisdiction have a locally adopted comprehensive plan? (If "no" or "NA" skip to Functional Plans Section)				
2. Does this plan address natural hazards or hazard mitigation? (If "no" or "NA" skip to Functional Plans Section)				
a. Does the plan include a Natural Hazards or Hazard Mitigation element?				
b. Does this plan include any of the following policy recommendations?				
i. Discourages development in areas of natural hazard risk (e.g. high wildfire hazard, floodplains)				
ii. Incentivizes development outside of hazard risk area				
iii. Discourages development in environmentally sensitive areas (e.g. steep slopes, highly erodible soils)				
iv. Limits or discourages extension on infrastructure (e.g. roads, water, sewer) in high-hazard areas				
v. Protects or enhances natural systems (e.g. floodplains, wetlands, forests)				
vi. Limits or discourages construction of public facilities in high-hazard areas (e.g. schools, police and fire stations)				
vii. Addresses transportation routes for evacuation during a disaster event				
c. Does the plan include any of the following maps?				
i. Observed natural hazard events				
ii. Areas of natural hazard risk				
iii. Areas of natural hazard risk on the Future Land Use Map				
iv. Future land use scenarios and how they overlap with natural hazard risks				
v. Environmentally sensitive areas				
vi. Green infrastructure assets or networks				
d. Are policy recommendations in the plan linked to the capital improvements program?				
e. Has your jurisdiction adopted the Community Wildfire Protection Plan or Hazard Mitigation plan by amendment to the comprehensive plan?				

**Functional Plans.** Functional plans, which include green infrastructure, hazard mitigation, community wildfire protection, and climate action plans, address special topics that have spatial planning implications but are not rooted in a single subarea of a local jurisdiction. Localities typically develop these plans independently from the local comprehensive plan, and they may or may not adopt these plans as comprehensive plan amendments.

Audit Questions	Yes	No	NA	Comments
1. Does your jurisdiction have a locally relevant green infrastructure plan?				
a. Does the plan include any of the following policy recommendations?				
i. Encourages green infrastructure as a strategy for hazard mitigation				
ii. Encourages protection or preservation of open space and natural habitat (e.g., conservation easements)				
iii. Encourages the protection or restoration of natural systems (e.g., forest management, stream restoration, wetland protection)				
iv. Encourages the development of multibenefit greenways and trails				
v. Balances potential conflicts between green infrastructure assets and WUI conditions				
c. Does the plan include a map of any of the following?				
i. Regional green infrastructure network				
ii. Regional green infrastructure assets				
iii. Priority areas for protection or preservation				
iv. Natural hazard risks in relation to green infrastructure assets				
d. Does the plan reference the following plans?				
• Local comprehensive plan				
• Hazard mitigation plan				
e. Does the plan clearly define responsibilities for implementation?				
2. Does your jurisdiction have a locally adopted hazard mitigation plan?				
a. Does the hazard mitigation plan include any of the following policy recommendations?				
i. Discourages growth in areas of natural hazard risk (e.g. high wildfire hazard, floodplains)				
ii. Incentivizes development outside of hazard risk area				
iii. Limits or discourages extension on infrastructure (e.g., roads, water, sewer) in high hazard areas				

Audit Questions	Yes	No	NA	Comments
iv. Encourages protection or preservation of open space (e.g. conservation easements)				
v. Encourages the protection or restoration of natural systems (e.g., forest management, stream restoration, wetland protection)				
vi. Limits or discourages construction of public facilities in high hazard areas (e.g. schools, police and fire stations)				
vii. Identifies transportation routes for evacuation during a disaster event				
c. Does the plan include any of the following maps?				
i. Observed natural hazard events				
ii. Areas of natural hazard risk (location/ extent)				
iii. Community assets in relation to areas of natural hazard risk				
iv. Natural hazard risks in relation to green infrastructure assets				
c. Does the plan reference the local comprehensive plan?				
3. Does your jurisdiction have a locally adopted Community Wildfire Protection Plan?				
a. Does the plan locally define boundaries of the WUI?				
b. Does the plan reference the following plans?				
• Local comprehensive plan				
• Hazard mitigation plan				
c. Does the plan clearly define responsibilities for implementation?				
4. Does your jurisdiction have a locally adopted climate adaptation plan?				
a. Does the plan address the relationship between climate adaptation planning and hazard mitigation?				
b. Does the climate adaptation plan include any of the following policy recommendations?				
i. Encourages protection or preservation of open space and natural habitat (e.g., conservation easements)				
ii. Encourages the protection or restoration of natural systems (e.g., forest management, stream restoration, wetland protection)				
c. Does the plan reference the following plans?				

Audit Questions	Yes	No	NA	Comments
• Local comprehensive plan				
• Hazard mitigation plan				
• Green infrastructure plan				
d. Does the plan clearly define responsibilities for implementation?				
5. Does your jurisdiction have a locally adopted parks and open space plan?				
a. Does the parks and open space plan include any of the following policy recommendations?				
i. Encourages protection or preservation of open space and natural habitat (e.g. conservation easements)				
ii. Encourages the protection or restoration of natural systems (e.g. forest management, stream restoration, wetland protection)				
iii. Encourages the development of multi-benefit greenways and trails				
iv. Designates areas of natural hazard risk for passive recreational activity				
b. Does the plan reference the following plans?				
• Local comprehensive plan				
• Hazard mitigation plan				
• Green infrastructure plan				
c. Does the plan clearly define responsibilities for implementation?				

**Subarea plans.** Subarea plans include policy recommendations for a discrete subarea of a local jurisdiction. These plans may cover a wide range of topics relevant to the plan area, or they may be more strategic in nature, focusing on a subset of high-priority topics. Types of subarea plans include neighborhood and watershed plans.

Audit Questions	Yes	No	NA	Comments
1. Does your jurisdiction have any locally adopted subarea plans?				
a. Does your jurisdiction have a locally adopted watershed management plan?				
i. Does the watershed management plan include policy recommendations that address hazard mitigation?				
ii. Does the plan reference the following plans?				
• Local comprehensive plan				
• Hazard mitigation plan				
iii. Does the plan clearly define responsibilities for implementation?				
b. Does your jurisdiction have locally adopted neighborhood plan(s)?				
i. Do the neighborhood plans include policy recommendations related to hazard mitigation?				
• Discourages development in environmentally sensitive areas (e.g. steep slopes, highly erodible soils)				
• Encourages green infrastructure strategies to reduce risk within the neighborhood subarea				
ii. Do the neighborhood plans include maps of natural hazard risks within the defined planning area?				

**Land-Use and Development Regulation.** Land-use and development regulations, including the zoning ordinance and subdivision regulations, create the regulatory framework for development within a community. They are the primary tools for advancing the goals and policies in the comprehensive plan and other community plans. As a result, they are important tools for addressing and mitigating hazard risk.

Audit Questions	Yes	No	NA	Comments
1. Does your jurisdiction have an adopted zoning code or unified development ordinance? (if "no", proceed to question 2)				
a. Does the zoning code have any of the following provisions?				
i. Limits or prohibits development in areas of natural hazard risk (e.g. floodplains, high wildfire risk)				
ii. Limits or prohibits development in environmentally sensitive areas?				
iii. Addresses natural hazard risk in rezoning procedures?				
b. Does the zoning code include overlay zones that set conditions for land use within those zones for the following?				
i. Natural hazards				
• Wildfire				
• Floodplain				
• Hurricane/coastal zone				
• Geologic hazards (e.g., landslides)				
ii. Other				
• Wildland-urban interface				
• Conservation				
• Open space				
• Natural resource				
c. Do(es) this overlay district(s) have any of the following characteristics?				
i. Prohibits by-right residential development				
ii. Addresses placement of roads for evacuation and public safety access				
iii. Addresses placement of critical public facilities for a hazard event				
iv. Addresses provision of emergency water sources for fighting wildfire				
v. Requires submittal of a wildfire mitigation plan or vegetation management plan				
d. Does your code include discretionary site plan review in areas of natural hazard risk for the following?				
i. New development				

Audit Questions	Yes	No	NA	Comments
ii. Modifications to existing development				
iii. Redevelopment				
e. Does your code include conditional use standards related to the following?				
i. Storage of hazardous materials in areas of natural hazard risk				
ii. Location of public facilities in areas of natural hazard risk				
iii. Creation of buffer zones between areas of natural hazard risk and residential development				
f. Do your code address transfer of development rights?				
i. Do these regulations specifically address the following?				
<ul style="list-style-type: none"> <li>• Define hazard areas as sending zones</li> </ul>				
<ul style="list-style-type: none"> <li>• Incentivizes TDR for protection of environmentally sensitive areas</li> </ul>				
<ul style="list-style-type: none"> <li>• Incentivizes TDR for natural resource conservation</li> </ul>				
2. Does your jurisdiction have a wildland-urban interface code?				
3. Do your jurisdiction's subdivision regulations address the following?				
a. Restricts the subdivision of land in natural hazard areas?				
b. Restricts the subdivision of land adjacent to natural hazard areas?				
c. Addresses placement of roads for evacuation and public safety access				
d. Addresses placement of critical public facilities for a hazard event				
e. Addresses provision of emergency water sources for fighting wildfire				
f. Requires or incentivizes the provision of open space				
g. Allows for/incentivizes cluster subdivisions				
i. Do cluster subdivision requirements address the following?				
<ul style="list-style-type: none"> <li>• Limiting development in areas of natural hazard risk (e.g. floodplains, high wildfire hazard)</li> </ul>				
<ul style="list-style-type: none"> <li>• Protecting environmentally sensitive areas</li> </ul>				
<ul style="list-style-type: none"> <li>• Creating fuel breaks between forestland and residential development</li> </ul>				

Audit Questions	Yes	No	NA	Comments
4. Does your jurisdiction have landscape standards or guidelines that address the following?				
a. Use of native plants				
b. Use of drought resistant plants				
c. Use of fire-resistant plants				
d. Maintenance or thinning of plants/vegetation				
5. Has your jurisdiction adopted defensible space regulations?				

**Public Investment.** Public investments, which include capital improvements, financial incentives and direct financial assistance to home owners and businesses, technical assistance, education and outreach programs, are an important tool for advancing hazard mitigation goals.

Audit Questions	Yes	No	NA	Comments
1. Does your jurisdiction’s capital improvement program or annual operating budget address land acquisition, conservation, and management? (If “no” or “NA” skip to question 2)				
a. Does your capital improvements program or annual operating budget include allocation for the following?				
i. Fee-simple land acquisition of land in natural hazard areas or environmentally sensitive areas				
ii. Purchase of development rights of land in natural hazard areas or environmentally sensitive areas				
iii. Vegetation management on public land				
iv. Direct financial assistance for conservation of private land				
v. Direct financial assistance for vegetation management on private land				
vi. Financial incentives for conservation activities on private land				
vii. Financial incentives for vegetation management on private land				
viii. Technical assistance for conservation activities on private land				
ix. Technical assistance for vegetation management on private land				
2. Does your jurisdiction’s annual operating budget include funding for public outreach and education related to natural hazard risk? (if “no” or “NA” skip to question 3).				
a. Do these outreach and education programs do the following?				
i. Educational/informational materials for community members about hazard risk (e.g. print or web-based)				
ii. Educational/informational materials for community members about mitigation strategies for their homes or businesses (e.g. print or web-based)				
3. Does your jurisdiction’s annual operating budget include funding for financial assistance to home owners and businessowners related to natural hazard risk? (if “no” or “NA” skip to question 4).				
a. Do these programs do the following?				
i. Provide direct financial assistance to home owners for mitigation strategies (e.g., rebates, grants, loans)				

Audit Questions	Yes	No	NA	Comments
ii. Provide direct financial assistance to businesses for mitigation strategies (e.g., rebates, grants, loans)				
iii. Provide financial incentives to home owners for mitigation strategies (e.g., tax incentives)				
iv. Provide financial incentives to businesses for mitigation strategies (e.g., tax incentives)				
v. Provide technical assistance to home owners for mitigation strategies (e.g., installation assistance)				
vi. Provide technical assistance to businesses for mitigation strategies (e.g., installation assistance)				
4. Has your jurisdiction or a subarea of your jurisdiction been recognized as a Firewise USA™ Community?				