

USDA Forest Service

URBAN FOREST CONNECTIONS

webinar series

Second Wednesdays | 1:00 – 2:15 pm ET

www.fs.fed.us/research/urban-webinars



PLANNING IN THE WILDLAND-URBAN INTERFACE



Miranda Mockrin

Research Scientist

USDA Forest Service

miranda.h.mockrin@usda.gov



Joe DeAngelis

Senior Research Associate

American Planning Association

jdeangelis@planning.org



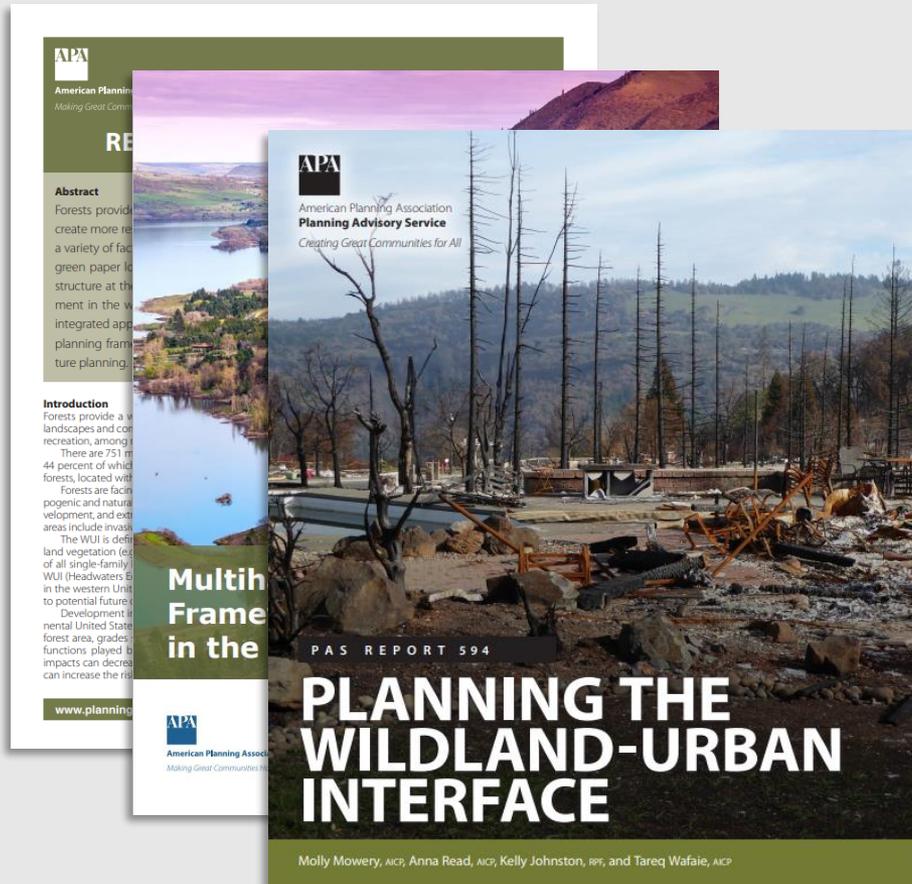
Molly Mowery

Founder

Wildfire Planning International

molly@wildfireplanning.com

Planning in the Wildland-Urban Interface: APA Resources



USFS Urban Forest Connections Webinar

June 12, 2019

Joe DeAngelis, AICP



American Planning Association

Making Great Communities Happen

APA Green Paper: Regional Green Infrastructure at the Landscape Scale



American Planning Association
Making Great Communities Happen

REGIONAL GREEN INFRASTRUCTURE AT THE LANDSCAPE SCALE

Abstract

Forests provide a wide range of benefits—environmental, economic, and social—which can create more resilient landscapes and communities. However, forests are facing challenges from a variety of factors including development pressure, invasive species, and climate change. This green paper looks at the needs and opportunities related to addressing regional green infrastructure at the landscape scale. In particular, it focuses on the challenges posed by development in the wildland-urban interface and opportunities for increasing resilience through an integrated approach to green infrastructure. The results of this paper will be used to develop a planning framework for addressing multi-hazard resilience through regional green infrastructure planning.

Introduction

Forests provide a wide range of environmental, economic, and social benefits, which can create more resilient landscapes and communities. These include clean air and water, production of forest products, and open space for recreation, among many others.

There are 751 million acres of forest land in the United States, 56 percent of which are in private ownership and 44 percent of which are in public ownership (USFS 2008). More than 130 million acres are urban and community forests, located within urban areas.

Forests are facing challenges from a variety of trends. Urban forests face a unique set of challenges, both anthropogenic and natural, related to the urban environment. These include difficult growing conditions, pressure from development, and extreme weather (flooding, heat, etc.) (Nowak et al. 2010). Challenges to forest lands outside of urban areas include invasive species, climate change, and development in the wildland-urban interface (WUI).

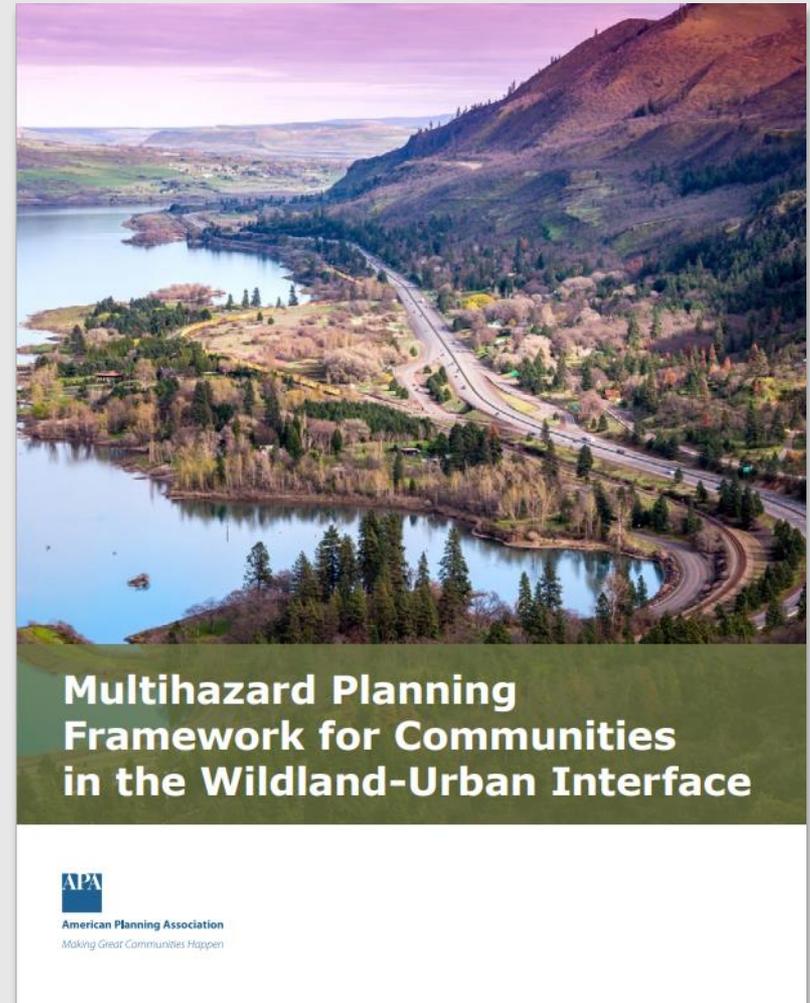
The WUI is defined as the area where human development meets and intermingles with undeveloped wildland vegetation (e.g., forests and grasslands). The WUI is facing increasing development pressure, with 40 percent of all single-family homes and 60 percent of homes built since 1990—nearly 45 million homes—located in the WUI (Headwaters Economics 2014; Radeloff et al. 2012). While the WUI has been undergoing rapid development, in the western United States, only 16 percent of the land in the WUI is developed, leaving a significant area open to potential future development (Headwaters Economics 2014).

Development in the WUI can fragment habitat, impact water quality, and strain water resources. In the continental United States, 53 percent of water originates on forest land (Mockrin et al. 2014). Development that clears forest area, grades soils, and increases impervious surface cover reduces the natural water capture and filtration functions played by forests and can increase erosion, sedimentation, and stormwater runoff. Together, these impacts can decrease water quality and reduce groundwater recharge. Additionally, development of forest lands can increase the risk of flooding and reduce resilience to other extreme weather events.

- Focuses on the challenges posed by development in the wildland-urban interface
- Identifies opportunities for increasing resilience through an integrated approach to green infrastructure
- Summarizes findings from a scan of federal programs, a series of interviews, and an APA-hosted Regional Green Infrastructure Symposium
- Available at: <https://www.planning.org/nationalcenters/green/regionalgreen/>

Multihazard Planning Framework for Communities in the Wildland-Urban Interface

- Discusses risk to WUI communities from a wide range of natural hazards (including wildfire)
- Identifies a range of interventions including plans, land development regulations, and public investments
- Provides guidance at the site, neighborhood, community, and regional scales



Multihazard Planning Framework for Communities in the Wildland-Urban Interface

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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

2. **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?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
a. Does your jurisdiction have a locally adopted watershed management plan?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

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)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
a. Does your capital improvements program or annual operating budget include allocation for the following?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
i. Fee-simple land acquisition of land in natural hazard areas or environmentally sensitive areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
ii. Purchase of development rights of land in natural hazard areas or environmentally sensitive areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
iii. Vegetation management on public land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
iv. Direct financial assistance for conservation of private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
v. Direct financial assistance for vegetation management on private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
vi. Financial incentives for conservation activities on private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
vii. Financial incentives for vegetation management on private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
viii. Technical assistance for conservation activities on private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
ix. Technical assistance for vegetation management on private land	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	

Audit your plans and processes!

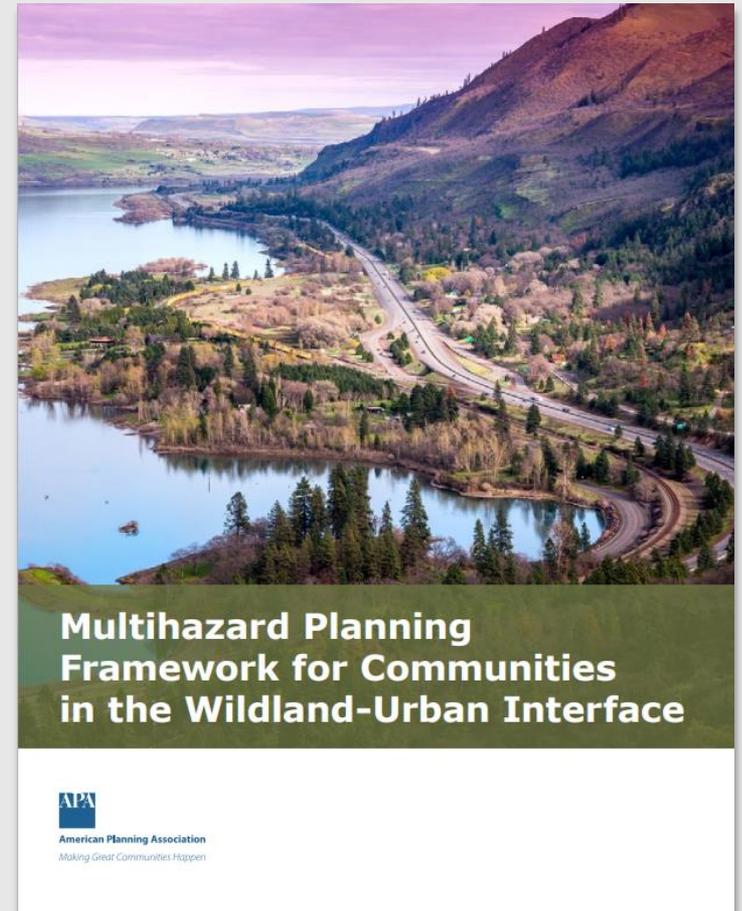
Planning systems audit tool can be used to identify strengths, gaps, and potential areas of improvement in a jurisdiction's planning systems (plans, codes, public investment, etc) as they relate to multihazard risk.

Multihazard Planning Framework for Communities in the Wildland-Urban Interface

Free and open for all!

Search “Multihazards WUI Framework”

Or visit planning.org/nationalcenters/green/regionalgreen/



PAS Report 594: Planning the Wildland-Urban Interface



- Many factors make the existence of the WUI inevitable
- Planners can play a critical role in reducing wildfire hazard and mitigating consequences to the natural and built environment
- This report explores the intersection between land-use decisions and wildfire and provides a holistic approach to planning the WUI.
- Focus on **practical guidance**

PAS Report 594: Planning the Wildland-Urban Interface

REGIONAL AND STATE WILDFIRE ASSESSMENTS

Many regions and states across the United States have conducted wildfire assessments. These resources have been developed and managed by fire agencies and are available as web-based tools or downloadable maps (Figure 4.6). Some provide advanced features and detailed reports.

It is important for planners to be aware of these resources to avoid using outdated information. Localities can hire consultants to help them adopt the science and best practices included in the roundtable discussions of this chapter of the plan.

DEADWOOD, SOUTH DAKOTA: COMMUNITY ENGAGEMENT FOR WUI PLANNING

During the start of Deadwood, South Dakota's comprehensive plan update in 2017, the city developed a survey to help identify planning challenges and priorities: housing, city services, facilities, special events, parking, transportation, and general hazards, including wildfire. The survey questions included in public comments they added in public comments.

However, city planners identified this topic due to the city's past history with wildfire and the severity of the hazard that the city faces. The city applied for assistance from the Community Planning Assistance for Wildfire program, a national program by the USDA Forest Service that offers volunteer assistance to communities interested in wildfire planning. CPWA consultants worked closely with the city's comprehensive plan committee, which includes citizens and business representatives to develop principles and strategies related to wildfire. This content was included into the plan draft and the public had the opportunity to comment on this section during two opportunities (Figure 6.1). Residents prioritized to attract and retain firefighters and develop a city evacuation plan (Zeller 2018).

The approach taken by Deadwood shows that opportunities to educate and engage the public on the WUI topic can still occur even if it initially did not come to the fore during the comprehensive plan development process.

TABLE 7.2. TYPICAL BUILDING COMPONENTS AND CODE REQUIREMENTS FOR THE WUI

Building Component	Typical Code Requirements
Roofs	Require Class A fire-rated roof assemblies on any structure in a wildfire hazard area.
Eaves, overhangs, soffits	Use noncombustible material, ignition-resistant materials, application of gypsum sheathing, or one-hour fire resistance rating on exterior wall assembly applied to the underside of rafter tail, soffit, or roof deck in areas exposed to radiant or convective fire.

TABLE 7.1. LAND-USE AND COMMUNITY DEVELOPMENT FEATURES ADDRESSED BY WUI REGULATIONS

WUI Regulatory Tools (by type)

Land-Use or Community Development Feature	Subdivision Regulations	Zoning/Land Development Code	Building Code	Fire Code	WUI Code
Community Scale					
Areas of refuge (external)	X	X		X	X
Hazardous land uses or development activities		X		X	X
Land uses with dense population/mass gatherings		X		X	X
Safe growth (directing growth towards low-hazard areas)	X	X			
Sensitive area protection	X	X			
Public open space, parks, and trails	X	X		X	X
Neighborhood/Subdivision Scale					
Buffering/screening	X	X			X
Roads and bridges	X			X	X
Secondary access	X			X	X
Setbacks	X	X			X
Vegetation management	X	X			X
Water supply (neighborhood scale)	X			X	X
Building/Lot Scale					
Building materials and construction		X	X	X	X
Building numbering (addressing)	X		X		X
Building siting	X	X		X	X
Decks and attachments		X	X		X
Driveways	X	X		X	X
Landscaping		X			X
Water storage (on-site)	X			X	X

Source: Molly Mowery and Tareq Wafiq

- Essential concepts related to the WUI, wildfire management, and understanding hazards and risk
- The evolution of the WUI, fire science for planners, and how to identify and assess wildfire risk at the community level
- A framework for meeting the challenge of planning in WUI communities
- **Focus on specifics:** Procedures, regulations (building and fire codes), how to discuss the WUI concept and wildfire risk in engagement processes, and how to integrate wildfire and WUI planning into comprehensive, functional, and area plans

PAS Report 594: Planning the Wildland-Urban Interface



Free and open for all!

Search "PAS Report 594" or visit planning.org/pas/reports



American Planning Association

Making Great Communities Happen

Joe DeAngelis, AICP
Senior Research Associate
American Planning Association
jdeangelis@planning.org