

# Community Wildfire Protection Plans

## In Accordance with Title I of The Healthy Forests Restoration Act of 2003



Sponsored by:

Navajo County  
in cooperation with the  
U.S. Forest Service Southwest Region  
and the  
White Mountain Natural Resources Working Group

Prepared by:



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A HANDBOOK FOR DEVELOPING

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## Acronyms and Abbreviations

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ACWPP	Apache Communities Wildfire Protection Plan
A-S NFs	Apache-Sitgreaves National Forests
BA	basal area
BLM	United States Department of Interior Bureau of Land Management
CAGs	Community Action Groups
CE	Categorical Exclusion from additional Environmental Analysis
CEQ	Council on Environmental Quality
CWPP	Community Wildfire Protection Plan
DOI	United States Department of Interior
dbh	diameter at breast height
drc	diameter at root collar
ESA	Endangered Species Act
FMC	Forest Management Commission
FMZ	Forest Management Zone
FRCC	Fire Regime and Condition Class
FS	Forest Service
GIS	geographic information system
HFI	Healthy Forests Initiative
HFRA	Healthy Forests Restoration Act of 2003
IGA	Intergovernmental Agreement
ISO	Insurance Services Office
NEPA	National Environmental Policy Act
NFP	National Fire Plan
NRWG	White Mountains Natural Resource Working Group
SCWPP	Sitgreaves Communities' Wildfire Protection Plan
USDA	United States Department of Agriculture
FWS	United States Fish and Wildlife Service
WUI	Wildland-Urban Interface

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## Preface

It is the common understanding of foresters and fire fighters that the country's ponderosa pine forests have undergone fundamental structural changes over the last century. Today's forests are a product of managed disturbances that have shifted age classes of pine forests, increasing the density and distribution of forest types from their natural vegetative array across the landscape. A century of wildland fire suppression, grazing, recreation, and the inability to remove enough small-diameter trees and other managed disturbances have changed today's forest from experiencing a natural fire regime of frequent low-intensity ground fires that maintained rather than altered forest structure, to infrequent, high-severity, stand-replacing crown fires, fed by unnaturally high fuel loads and driven by a decade of drought. The small-tree-dominated forests are real threats to sustaining forest systems, wildlife, human lives, and property and maintaining a quality of life expected by those living and working in and near forest communities.

In the last two decades, forest and fire researchers have identified the need to restore the country's forests' health by implementing management practices designed to return forests to natural conditions (historical distribution of age class, tree density, and wildland fire occurrence). By the mid-1990s the severity of the problem of increased risk of catastrophic wildland fire in the West was compounded by long-term drought, expansion of the wildland-urban interface, the buildup of forest fuels, and changing forest composition. One of the more significant federal policies developed during this time was the *1995 Federal Wildland Fire Management Policy*. This represents the first single comprehensive federal policy for the Departments of Interior and Agriculture to use in addressing forest management practices to reduce the risk of catastrophic wildfires.

It was also during this time that public "working groups" began to form in forest communities. Groups such as the Quincy Library Group<sup>1</sup>, the Applegate Partnership<sup>2</sup>, and the White Mountain Natural Resources Working Group (NRWG), in Arizona, emerged as successful models of processes for open debate and common understanding and provided a forum for forging consensus on forest management philosophies and appropriate actions. These local communities assumed a responsibility to resolve forest management issues and to help create a political environment that could collaboratively facilitate the establishment and maintenance of local, regional, and national forest management practices that restore forest health and sustain local forest-related industries and recreational opportunities.

While the 1990s also saw continuing debate about the relative merits of various forest management approaches and practices, they also marked an increase in collaborative efforts at all political levels and

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<sup>1</sup> The Quincy Library Group was established in 1992 when a forester, a county supervisor, and a local environmental activist began meeting in the public library in Quincy, California to negotiate a way out of the so-called "timber wars." The timber wars, the longstanding dispute between foresters and environmentalists over management of National Forests in Northern California and the Pacific Northwest, had increasingly come to be viewed as an obstacle to both local economic stability and environmental quality. The QLG meetings eventually grew to include as many as 175 people, though fewer than 30 people have been regular participants in the meetings.

<sup>2</sup> Located in southwest Oregon and northern California, the Applegate watershed includes Forest Service, Bureau of Land Management (BLM), state, county, and private lands. The Applegate Partnership is a community-based project begun in 1992 and involving industry, conservation groups, natural resource agencies, and residents cooperating to encourage and facilitate the use of natural resource principles that promote ecosystem health and diversity.

among the grassroots citizenry to restore forest and rangeland health. Events and experience led to the *National Fire Plan* (NFP) being created and funded by Congress in 2001. The western states' governors, along with the Secretaries of Agriculture and Interior, developed *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy* (2001). The *1995 Federal Wildland Fire Management Policy* was reviewed and updated by the Interagency Federal Wildland Fire Policy Review Working Group in 2001. The Working Group found the 1995 policy to be sound and appropriate. The Working Group subsequently recommended changes and additions to the 1995 policy to address ecosystem sustainability, science, education, and communication and to provide for adequate program evaluation. The Wildland Fire Leadership Council was established through a 2002 Memorandum of Understanding between the Secretaries of Agriculture and Interior to support the NFP and the *1995 Federal Wildland Fire Management Policy*.

In response to the significant threat to communities and forest ecosystems from catastrophic wildfire, President Bush introduced the Healthy Forests Initiative (HFI) in 2002. Among other points this policy had a goal of minimizing administrative delays in approving federal projects for reducing hazardous wildland fuels.

Subsequently, in 2003, Congress passed the Healthy Forests Restoration Act (HFRA), which established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative process with the Departments of Interior and Agriculture. HFRA also provides direction to improve forest and rangeland health on federal, nonfederal, and tribal lands. When certain conditions are met, Title I of HFRA authorizes the Secretaries of Agriculture and Interior to expedite the development and implementation of hazardous fuel reduction projects on lands managed by the Forest Service or the Bureau of Land Management.

During the mid 1990's, as federal agencies addressed the declining health of the nation's forests, a national policy evolved centering on restoring natural forest ecosystems. This forest restoration management policy focuses on protecting all values, ranging from the community to interior forest habitats from catastrophic wildfires, diseases, and insect infestations. HFI and HFRA are aimed at implementing significant portions of the NFP. HFRA helped empower forest communities, and HFI streamlined federal agencies' efforts to collaboratively restore forests and protect forest communities from wildland fires.

This handbook is intended not only to provide communities with a basic guide for developing a Community Wildfire Protection Plan (CWPP), but also a discussion of the challenges facing forest communities as they undertake a consensus-driven CWPP process. It is our belief that the experience gained by Arizona White Mountain communities in creating the state's first CWPPs can prove to be a useful model for other communities in other regions wishing to create their own CWPP. This Arizona experience covers the essential tasks: setting up the core team of representatives, establishing priority recommendations and treatments, and determining the final approval process, one that can be simplified or expanded to meet the needs of each community.

## Preparing Your Plan

The overall goal of this handbook is to assist you in developing a CWPP that complies with HFRA. The handbook will help facilitate your developing the key components of your CWPP based on the interests and desires of your community. The following questions will help start your process.

### Why have a plan?

- ◆ provide for community-based decision making
- ◆ encourage communities and their local governments to determine the boundaries of the wildland-urban interface (WUI) that surrounds their communities.
- ◆ identify ways to reduce wildfire risk to communities, municipal water supplies, and other at-risk federal lands
- ◆ provide a mechanism to seek grants for further implementation of the plan
- ◆ promote systematic information gathering to address the goals of the CWPP

### What are the goals of a CWPP?

The goals listed in *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-year Comprehensive Strategy*, the purposes of HFRA, and the NFP should all be reviewed to assist in defining the core values of the community regarding wildland fire protection. These goals include:

- ◆ improve fire prevention and suppression
- ◆ reduce hazardous forest fuels
- ◆ restore forest health
- ◆ promote community involvement
- ◆ recommend measures to reduce structural ignitability in the CWPP area
- ◆ encourage economic development in the community

### When should a CWPP be developed?

Use the following two points to help answer this question:

- ◆ Is my community considered an “at-risk” community?
  - Title I, Section 101 (1) of HFRA defines at-risk communities as “(A)(i) ... ‘Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire’ issued by the Secretary of the Agriculture and the Secretary of the Interior in accordance with Title IV of the Department of Interior and Related Agencies Appropriations Act, 2001 (114 stat. 1009) (66 Fed Reg. 753, January 4, 2001); or (ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land; (B) in which conditions are conducive to a large-scale wildland fire event; and (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event; ...”

- ◆ Has the community been predetermined as at-risk and listed in the Federal Register (FR) or *The Arizona Wildland Urban Interface Assessment* (2004)?

If you answered “yes” to either of these questions, you should consider developing a CWPP.

## How do I start a plan?

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This handbook is designed to assist in the development of your own CWPP. The first step, however, is understanding where the information and guidelines needed to build your own CWPP come from. The documents listed below provide that information and form the foundation upon which the CWPP is developed:

- ◆ Healthy Forest Restoration Act of 2003 (P.L. 108-148)
- ◆ *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee, Society of American Foresters, National Association of Counties, National Association of State Foresters 2004) (*Foresters' Handbook*)
- ◆ *The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide* (USDA Forest Service and Bureau of Land Management 2004) (*Field Guide*)
- ◆ Healthy Forests Initiative, 2002

These documents are provided on the enclosed CD for your reference and review.

## Who needs to be part of preparing your plan?

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Guidance from the *Foresters' Handbook* on community involvement states that at a minimum, a CWPP must:

- ◆ be collaborative (joint planning effort by all interested parties)
- ◆ be agreed to by the State Forester, local governments, and community fire chiefs
- ◆ be developed in consultation with the appropriate federal agencies and interested parties

With respect to community involvement, HFRA states that a CWPP (§ 101.1.3. A.)

- ◆ be developed in the context of the collaborative agreements and the guidance established by the Wildland Leadership Council
- ◆ be agreed to by the applicable local government, local fire department, and state agency responsible for forest management, in consultation with interested parties and the federal land management agency managing land in the vicinity of the at-risk community

It is important to solicit special interest groups to be a part of the planning process. This will help reduce potential issues when agreement and implementation of the plan begins.

## How is this handbook laid out?

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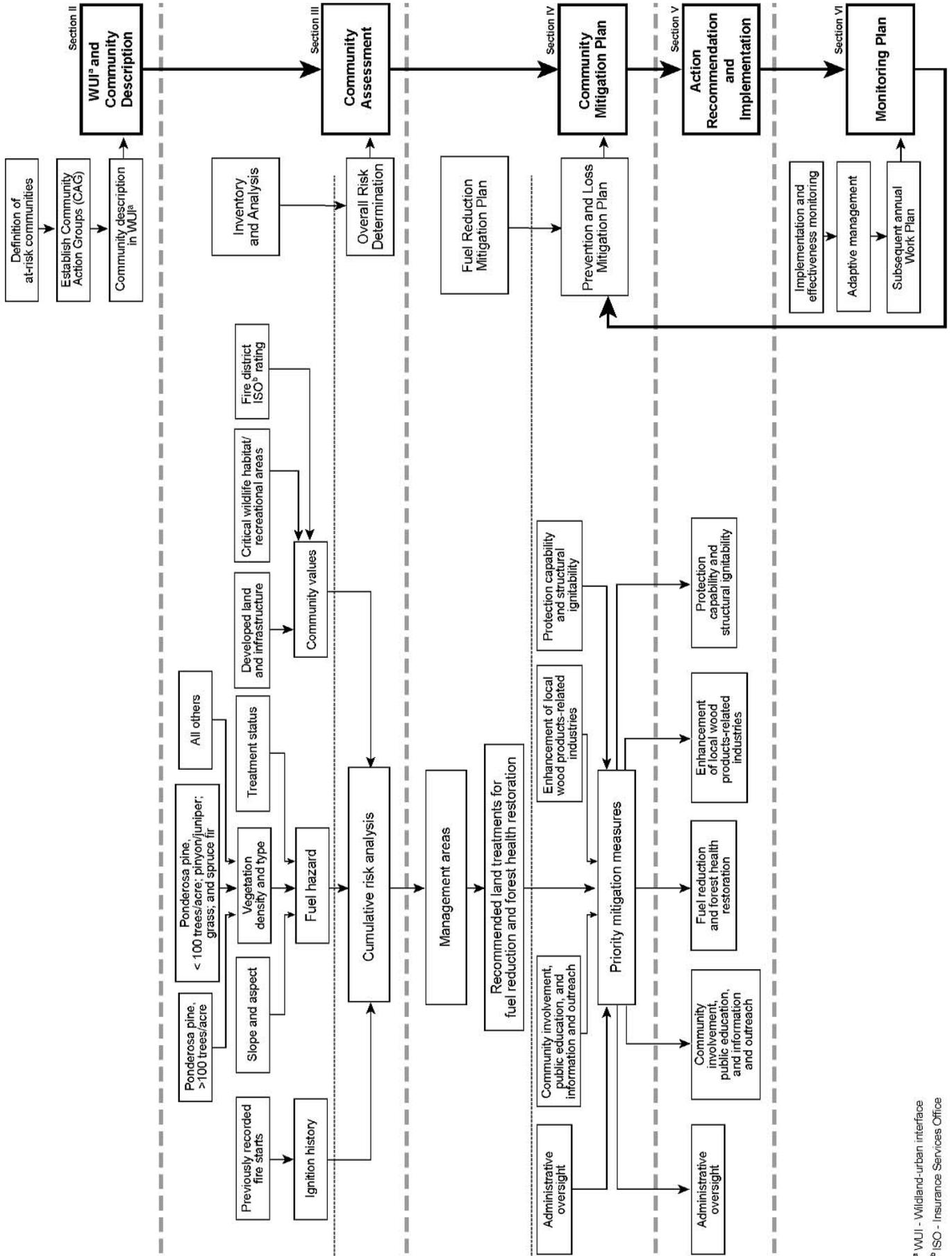
This handbook is organized to help you step-by-step in the preparation of a CWPP. It is based on two CWPPs completed in 2004 for the Arizona White Mountain communities adjacent to the Apache-Sitgreaves National Forests. Those two plans (Apache Communities' Wildfire Protection Plan [ACWPP] and the Sitgreaves Communities' Wildfire Protection Plan [SCWPP]) were organized into seven sections:

- ◆ Section I Introduction
- ◆ Section II Wildland-Urban Interface and Community Description
- ◆ Section III Community Assessment
- ◆ Section IV Community Mitigation
- ◆ Section V CWPP Priorities: Action Recommendations and Implementation
- ◆ Section VI Monitoring Plan
- ◆ Section VII Declaration of Agreement and Concurrence

As part of the process in developing the CWPPs, a flow chart that demonstrates the process for developing a plan that complies with Title I of HFRA was prepared (see Figure 1.1).

As you work through this handbook, you will see three levels of information displayed. Level I focuses on each of the seven sections as reflected in the flow chart. Each section is outlined, with the key components being addressed in each section. Level II focuses on some of the key issues and successes faced by the White Mountain communities during plan development. That information is labeled Case Study and is in italic text. The third level of information labeled Things To Remember and placed in bold text indicates important information to remember as you build your own CWPP.

This format was developed by the White Mountain CWPP Community Action Groups (CAGs), based on the information they chose to include. The format is flexible. The only requirement in preparing a CWPP is that the plan comply with Title I of HFRA.



<sup>a</sup> WUI - Wildland-urban interface  
<sup>b</sup> ISO - Insurance Services Office

Figure 1.1

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## Case Study: Apache and Sitgreaves Community Wildfire Protection Plans

To help guide you through the process of creating a CWPP, the experience of some small forest communities in northeast Arizona provides some lessons. The communities described here prepared the first two approved CWPPs in the state. Catalyzing these communities to take the initiative to form a collaborative group to address their local wildfire concerns was the combination of:

- ◆ accumulated forest fuels
- ◆ expansion into the surrounding forests by the communities through growth and second-home and retirement developments
- ◆ compromised health of the surrounding forests because of disease and insect infestations
- ◆ multiyear drought
- ◆ several catastrophic wildfires
- ◆ availability of federal assistance in the form of professional advice, expedited procedures, funding for fuel-reduction treatments, and stimuli for local forest product industries

These communities, located in Arizona's White Mountains, compose the wildland-urban interface (WUI) of the Sitgreaves and Apache CWPPs adjacent to or surrounded by the Apache-Sitgreaves National Forests and the Fort Apache Indian Reservation. They include Forest Lakes, the only Coconino County community in the Sitgreaves National Forest; the Navajo County communities of Pinetop/Lakeside, Show Low, Linden, Clay Springs, Pinedale, Heber/Overgaard, and Aripine; and Vernon, in Apache County. These nine communities around the Sitgreaves National Forest support a year-round population of over 17,000 residents and over 65,000 seasonal residents, both in the communities and in associated county developments. Only the City of Show Low and the Town of Pinetop/Lakeside are incorporated. The six communities associated with Apache County of the Apache National Forest are the Hideaways area, Greer, South Fork, Eagar, Nutrioso, and Alpine. Collectively these communities support a year-round population of over 8,000 residents, with fire departments providing protection for over 15,000 seasonal residents in addition to recreational visitors in developed campgrounds near the communities. The Towns of Eagar and Springerville are the only incorporated Apache County communities in the Apache National Forest. The two communities in the Fort Apache Indian Reservation are McNary and Hon Dah. They maintain a year-round population of over 350 residents and also experience a seasonal influx of recreational visitors during the summer months. The majority of the communities listed above were founded during the Mormon settlement years of the late 1800s in association within timber and livestock industries. These White Mountain communities currently maintain a small mountain village atmosphere with economies shifting from extraction to a service industry base. Growth in the communities has been steady, averaging 1,300 to 1,500 new Navopache Electric Cooperative customers annually. Community development includes encouraging open space, single family residences, resort uses, and convenience and retail services for residents and visitors. Additionally, the communities are encouraging timber-related industries. There are two major power plants in the vicinity of these communities that have also enabled significant additions to the local economy.

During the mid-1990s and specifically after the Cottonwood fire of 1996 that threatened the community of Pinedale, county and town governments, in concert with the Fort Apache Indian Reservation and Apache-Sitgreaves National Forests began a campaign to educate property owners and visitors about the potential of wildland fire in and adjacent to these communities. The White Mountain Natural Resources

Working Group (NRQG) was formalized in 1997 by an intergovernmental agreement among federal, state, and county governments and was chartered to create a collaborative process for open debate of innovative approaches to ecosystem health, including the role of fire in the ecosystem. Although progress in education and wildland hazardous fuel treatments was being made, the 2002 fire season shocked these communities as well as other forest communities in the western United States. The 500,000-acre Rodeo-Chediski Fire in that year—largest in Arizona’s recorded history—resulted in the evacuation of over 30,000 residents from nine White Mountain communities. The loss of homes, forest resources, and community revenues; the expense of fighting an uncontrolled catastrophic wildland fire; and the prior passage and funding of the National Fire Plan in 2001 created both opportunity and initiative for local governments and residents to take serious measures to reduce hazardous wildland fuels in and adjacent to the communities. The White Mountain communities were, therefore, aware of and enthusiastic supporters of both the Healthy Forest Initiative and the Healthy Forests Restoration Act when passed by Congress and signed by the president in December 2003.

Specifically, the collaborative process for developing the Sitgreaves (SCWPP) and Apache (ACWPP) Community Wildfire Protection Plans had roots in the NRWG. After the 2003 fire season, a subgroup of the NRWG focused on reviewing the 25,000-acre Kinishba fire and addressing which specific issues the communities of McNary, Hon Dah, Pinetop-Lakeside, and Show Low would face if a fire similar to Kinishba would reach their communities. The subgroup evaluated where and what type of land treatments could be applied to the WUI to mitigate the fire potential. Subsequent to Congressional approval of HFRA, the NRWG subgroup focused on developing a CWPP as a means of describing the WUI and the components of wildland fire risk and determine how to mitigate risk in the WUI.

The White Mountain communities had an advantage of the existence of a well-formed and long-term collaborative working group. The NRWG has stayed together over the years and expanded its membership to include industry and environmental groups, as well as interested citizens and federal, tribal, state, and local government representatives. Over time, a degree of mutual respect and trust has developed within the NRWG as well as a basic understanding of governmental processes at all levels. If such a long-standing collaborative working group exists within a community, it seems only prudent that it be included in the public involvement process that is essential to developing a CWPP that will be broadly acceptable.

The official initiation of the CWPP planning process on the Sitgreaves and Apache National Forests occurred in March 2004 when the Boards of Supervisors from Apache, Coconino, and Navajo Counties; the City of Show Low; and the Town of Pinetop-Lakeside approved a Scope of Work authorizing participation in a working group chartered to complete a CWPP for all of the communities at risk from catastrophic wildfire in the Sitgreaves National Forest, adjacent areas of the Fort Apache Indian Reservation, and the Apache National Forest in Apache County.

The working group went through a decision process to ensure that the direction it wished to pursue complied with HFRA and that the projects and programs developed would complement the Apache-Sitgreaves National Forests’ (A-S NFs) federal land planning and implementation of authorized projects. In addition, the communities looked for resources to assist in defraying the costs of fuel modification treatments in the towns, to enhance outreach for community planning, to develop WUI fire codes and ordinances, and to support local forest product-based small businesses.

## Section I. Introduction

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◆ State the need for a CWPP.</li> <li>◆ Give a brief recap of HFI and HFRA.</li> <li>◆ Describe how the CWPP will meet the intent of HFRA.</li> </ul>
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Applicable federal guidance and regulations identified.</li> <li>◆ Collaborative process established, (Steps 1–3 of the <i>Foresters' Handbook</i>).</li> <li>◆ “At-risk” communities identified.</li> <li>◆ Planning area boundary established.</li> <li>◆ Fire regime and Condition Class of the WUI determined.</li> <li>◆ Desired future conditions of the WUI stated.</li> <li>◆ Relevant fire policies identified.</li> <li>◆ Need, goals, and planning for the CWPP discussed.</li> </ul>
<b>Things To Remember</b>	<b>Section I is designed so the reader has no doubt that the CWPP complies with the intent and conditions of HFRA.</b>

### 1.1 Applicable Federal Guidance and Regulations

<b>Objectives</b>	Identify applicable federal guidance and regulations that build on existing efforts to restore healthy forest conditions in the WUI by authorizing expedited environmental assessment, administrative appeal, and legal review for qualifying projects on federal land.
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ HFI <ul style="list-style-type: none"> <li>● Provides federal agencies a way to reduce administrative delays in hazardous fuel reduction and ecosystem restoration projects on federal lands. HFI puts into practice several core components of the National Fire Plan’s 10-Year Comprehensive Strategy and Implementation Plan. The principal components of HFI include: <ul style="list-style-type: none"> <li>▶ NEPA Categorical Exclusions (see FR vol. 68, No. 108, June 5, 2003, pp. 33814–24).</li> <li>▶ New guidance from the Council of Environmental Quality (CEQ) for conducting environmental assessments for fuel reduction projects.</li> <li>▶ Forest Service Appeals amendments.</li> <li>▶ Department of the Interior Bureau of Land Management (DOI BLM) Full Force and Effect Regulations for expedited wildland fire management decisions and administrative review of these decisions and administrative NEPA improvements.</li> <li>▶ Endangered Species Act procedures (see the October 11, 2002, and December 10, 2002, memoranda from the Director, US Fish and Wildlife Service).</li> <li>▶ Stewardship Contracting</li> </ul> </li> </ul> </li> </ul>

**Case Study**

*The White Mountain Stewardship Contract issued in August 2004 allows for fuel reduction treatments on 150,000 acres over a 10-year period and is the largest stewardship contract issued by the Forest Service. This contract will ensure fuel reduction treatments in the A-S NFs, including fuel reduction treatments identified in the WUI by the CWPP.*

## ◆ HFRA

- Passed by Congress to reduce statutory delays in hazardous fuel reduction and forest health programs on specific federal lands; also contains assistance for states, tribes, and private landowners for forest restoration programs on nonfederal lands. The major components of HFRA include:
  - ▶ Title I – Hazardous fuel reductions on federal land
  - ▶ Title II – Biomass
  - ▶ Title III – Watershed forestry assistance
  - ▶ Title IV - Insect infestations and related diseases
  - ▶ Title V – Healthy Forest Reserve Program
  - ▶ Title VI – Miscellaneous (monitoring and early warning system for catastrophic environmental threats to forests)

The development of a CWPP will focus on Title I.

**Case Study**

*Early in the process, the communities reviewed the intent of HFRA and the compatibility of HFRA with the community values and needs. They asked direct questions, including:*

*Do we intend to (purposes of HFRA):*

- ◆ *reduce wildfire risk to communities, municipal water supplies, and other at-risk federal lands*
  - *through collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects?*
- ◆ *request grants to improve commercial value of biomass?*
- ◆ *enhance watershed health and address threats to forest and rangeland health, including catastrophic wildfire across the landscape?*
- ◆ *promote systematic information gathering to address impacts of insect and disease infestations and other damaging agents on forest and rangeland health?*
- ◆ *improve the capacity to detect insect and disease infestations at an early stage?*
- ◆ *protect, restore, and enhance forest ecosystems:*
  - *to promote the recovery of threatened and endangered species?*
  - *to improve biological diversity?*
  - *to enhance productivity and carbon sequestration?*

**Things To Remember**

**HFRA and HFRA need to be addressed in Section I of your CWPP since they provide the guidance and information needed to become the foundation upon which the CWPP is developed.**

## 1.2 Collaborative Process

- Objectives** ◆ Develop a core group of individuals who will assist in the development of the CWPP.
- Key Components** ◆ With respect to community involvement, HFRA states that a CWPP (§ 101.1.3. A.) must:
- Be developed in the context of the collaborative agreements and guidance established by the Wildland Leadership Council.
  - Be agreed to by the applicable local government, local fire department, and state agency responsible for forest management, in consultation with interested parties and the federal land management agency managing land in the vicinity of the at-risk community.
- Things To Remember** **At a minimum, local governments, fire chiefs from affected areas, and the State Forester must agree to the CWPP.**
- Case Study** *The Collaborative Group (Community Action Group [CAG]) for the two CWPPs included but were not limited to these key members:*
- ◆ *Local governments (from Town government: the Community Development Director, and from the Counties: the County Manager, County Emergency Services representative, and County Planning and Zoning representative)*
  - ◆ *Appropriate Forest Service district personnel*
  - ◆ *Since we had eight fire chiefs in the SCWPP, they agreed to have a representative in each CAG: the Show Low Chief in the East CAG and the Heber/Overgaard Chief in the West CAG.*
  - ◆ *Arizona State Forester*
  - ◆ *Additional members included University of Arizona Cooperative Extension, Northland Pioneer College, The Nature Conservancy, White Mountain Conservation League, Natural Resource Conservation District, Trees for the Rim, Life in the Forests, Rancher/Resort Owner, and some neighborhood and homeowners' association representatives. Formal and informal community leaders who have a historical knowledge of the CWPP analysis area.*
- The communities did initiate a completely open public process for developing the CWPP. All interested citizens were encouraged to attend, and many made only a one-time appearance rather than commit themselves to consistent involvement. The communities also decided to conduct a short-duration, high-intensity planning process that would develop the CWPP in 60 days rather than create an extended planning exercise. The core group and CAGs were asked to commit time weekly, initially, and then biweekly as the process went from planning to analysis and document preparation.*

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### 1.3 Planning Area and “At- Risk” Communities

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- Objectives**
- ◆ Establish the planning area by determining the boundary of the WUI.
  - ◆ Identify “at-risk” communities.
- Key Components**
- ◆ To have your community included into the WUI, it needs to be identified as an “at-risk” community in the FR and/or in your state assessment if one has been prepared, or meet the definition below:
 

Title I, Section 101 (1) of HFRA defines at-risk communities as “(A)(i) ... ‘Wildland Urban Interface Communities Within the Vicinity of Federal Lands That Are at High Risk from Wildfire’ issued by the Secretary of the Agriculture and the Secretary of the Interior in accordance with title IV of the Department of Interior and Related Agencies Appropriations Act, 2001 (114 stat. 1009) (66 Fed Reg. 753, January 4, 2001); or (ii) a group of homes and other structures with basic infrastructure and services (such as utilities and collectively maintained transportation routes) within or adjacent to Federal land; (B) in which conditions are conducive to a large-scale wildland fire event; and (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event; ...”
- Things To Remember** **The Forest Service (FS) has established WUIs around communities in the vicinity of federal lands. In this portion of Section I, the CAGs are able to evaluate and accept or expand the WUI based on the community values that will be identified and discussed in Section III.**
- Case Study**
- The CAGs reviewed the FR and the Arizona Wildland Urban Interface Assessment (2004) for the listing of communities in the Sitgreaves and Apache National Forests and the Fort Apache Indian Reservation. The CAGs found all communities in the analysis area were listed as at-risk in one or both of these documents. In the CWPPs, communities were connected through significant private lands, escape routes, or other infrastructure. Descriptions of specific WUI areas included some disjunct communities, but were all considered to be within the WUI of the federal or tribal forest lands. There were recreational areas and private land holdings reviewed but not included in the community definition, such as “single ranch homes with associated structures.”*

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## 1.4 Fire Regime and Condition Class:

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<b>Objective</b>	◆ Evaluate federal lands in the WUI for fire regime and current Condition Class.
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ Fire regime: <ul style="list-style-type: none"> <li>• A natural fire regime is a general classification of the role a fire would play across a landscape in the absence of human intervention. The FS has created five categories of natural (historic) fire regimes based on the number of years between fires (fire frequency) combined with the severity of fire on dominant overstory vegetation (<i>Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management</i> [FS 2002]).</li> </ul> </li> <li>◆ Condition Class <ul style="list-style-type: none"> <li>• The FS's classification of the extent of departure from the natural fire regime. <ul style="list-style-type: none"> <li>▶ Condition Class 1: forest system in its natural fire range and at low risk for losing ecosystems components from wildland fire.</li> <li>▶ Condition Class 2: forest has moderately departed from its historic fire occurrence range and has a moderate risk of losing habitat components.</li> <li>▶ Condition Class 3: forests have significantly departed from their historic fire regime ranges and their risk of losing key habitat components is high.</li> </ul> </li> </ul> </li> </ul>
<b>Things To Remember</b>	<p><b>It is important to evaluate the existing fire regime and Condition Class of lands in the identified WUI. Monitoring change in Condition Class also determines progress in meeting CWPP hazardous wildland fuel reduction objectives. Authorized fuel reduction projects through HFRA are to be implemented in the WUI on federal land classified as Condition Class 3 if they are near municipal water supply systems (§ 102.a. 2.); Condition Class 2 federal lands in fire regime I–III if in proximity to municipal water supply systems (§ 102.a.3.); on federal land containing windthrow, ice, insect, and disease damage threatening federal or adjacent nonfederal land (§ 102.a 4); or threatened and endangered species habitats (§ 102.a. 5).</b></p>

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## 1.5 Future Desired Conditions

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<b>Objectives</b>	◆ Qualify what results the CWPP seeks to achieve as it relates to current and future fuel loading on federal and nonfederal lands.
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ On federal lands <ul style="list-style-type: none"> <li>• Objective is to return lands to Condition Class I. <ul style="list-style-type: none"> <li>▶ Incorporate fire as a natural process to be used as a long-term management practice to sustain forest health.</li> </ul> </li> </ul> </li> </ul>

- ◆ On nonfederal land
  - Have private land owners comply with fire-safe standards recommended by local fire departments and local communities.
  - Significantly reduce the risk of fire igniting in the community and spreading to the surrounding forest.

### Case Study

*The CAGs expressed the need for private lands to conform to community ordinances, codes, or recommendations for a fire-safe home environment as well as a change from Condition Class 2 or 3 to Condition Class 1 lands in the forest. In this section the CAGs discussed a needed change in Condition Class since that is a monitoring requirement on federal lands (§ 102.g.4.). The CAGs, monitoring for change in Condition Class, recommend following the Fire Regime Condition Class Guidebook (2004).*

## 1.6 Relevant Fire Policies

### Objective

- ◆ Identifying and evaluating relevant local, state, and federal fire policies.

### Key Components

- ◆ Local, state, and federal fire policies will ensure that your CWPP will comply with and be consistent with existing wildland fire mitigation efforts.
- ◆ On a local level, not all communities have formally adopted the registered National Firewise Communities USA™ program, and may develop recommendations based on community consensus.
- ◆ Fire departments encourage nonfederal land to be in compliance with local government fire-safe standards or with local codes and ordinances. The following are examples of brochures that are distributed by fire departments and local emergency services agencies:
  - Fire Department Operational Plans
  - Evacuation Plans
  - Emergency Services Plans
  - Watershed Working Groups Plans
- ◆ CAG(s) should also review pertinent federal policies to ensure compliance with HFRA and show continuing action by federal agencies to address current Condition Class and remediation of hazardous wildland fuels. Documents recommended to be reviewed include:
  - *The 1995 Federal Wildland Fire Management Policy* and the 2001 Working Group review and revision of the policy.
  - *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-year Comprehensive Strategy* (2001) to ensure the goals in the strategy comply with the CWPP.
  - National Forest Land Management Plans.
  - National Firewise Communities USA™ Program.

- ◆ HFRA (§ 103d.2.B.) states, “the Secretary should, to the maximum extent practicable, give priority to communities that have adopted a community wildfire protection plan or have taken proactive measures to encourage willing property owners to reduce fire risk on private property.”
  - Outline the current efforts of local governments and fire departments or homeowners’ association incentives programs, grants, and other projects that reduce wildland fire risk on private property.
  - Disclose federal agency fuel reduction programs and projects in the communities.

## Case Study

*The CAGs also included a review of pertinent state policies to ensure compliance and consistency with Arizona planning efforts for wildland fire mitigation. These included:*

- ◆ *“Guiding Principles” and recommendations from the Governor’s Forest Health Oversight and Advisory Committees.*
- ◆ *The Arizona Wildland Urban Interface Assessment (2004).*
- ◆ *“Arizona Firewise Communities” published by the Arizona Interagency Coordinating Group.*
- ◆ *The Healthy Forests Bill introduced and passed during the 46<sup>th</sup> Arizona Legislative session (2004).*

## 1.7 Need, Goals, and Planning for a CWPP:

### Objectives

- ◆ Show that the communities are at-risk and how that information was derived.
- ◆ Develop a set of goals for the CWPP.
- ◆ Gather and review relevant local, state, and federal documents to ensure consistency in land planning by the communities.

### Key Components

- ◆ HFRA provides for community-based decision making and empowers local governments to determine the boundaries of the WUI that surrounds their communities.
- ◆ Communities in the CWPPs will be forced to recognize the costs of restoration treatments as weighed against the costs of suppressing catastrophic wildfire, with the accompanying direct property and income losses as compared to the indirect losses from evacuation and other disruptions.
- ◆ Planning documents that can be reviewed for consistency include but are not limited to:
  - County comprehensive plans.
  - Community general plans.
  - Emergency services plans.
  - Local watershed plans.
  - Future forest treatment and management plans of the White Mountain Apache Tribe (or any associated tribal governments) within the WUI.
  - National Environmental Policy Act (NEPA).

- Endangered Species Act (ESA).
- National Historic Preservation Act (NHPA).
- Other applicable federal or state regulations.

**Things To Remember**    **The goals of a particular CWPP can vary from one plan to another. A recommended set of goals can be found in *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-year Comprehensive Strategy (2001)*, the NFP, and HFRA.**

**Case Study**                    *The CAGs for the White Mountain communities chose a specific set of goals for their CWPP. These included:*

- ◆ *improve fire prevention and suppression*
- ◆ *reduce hazardous forest fuels*
- ◆ *restore forest health*
- ◆ *promote community involvement*
- ◆ *recommend measures to reduce structural ignitability in the CWPP area*
- ◆ *encourage economic development in the community*

## II. Wildland-Urban Interface and Community Description

<b>Purpose</b>	◆ To describe your community as “at-risk.”
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Delineate the WUI and prepare a base map (Step 4 of the <i>Foresters’ Handbook</i>).</li> <li>◆ Describe your community or communities that fall within the WUI.</li> </ul>
<b>Things To Remember</b>	<b>HFRA defines the WUI as (§ 101. 16.A) “an area within or adjacent to an at-risk community that is identified in recommendations to the secretary in a community wildfire protection plan ... ” This section of the CWPP includes the process that successfully delineates the WUI boundary and provides the forum for local communities to create a unique description of their community.</b>
<b>Case Study</b>	<i>The CAGs drew heavily on the experience of the local fire chiefs and FS personnel in deciding where “urban” areas existed. There was discussion and debate concerning how to specifically apply HFRA’s definition in determining the boundary of the WUI. Ultimately, there was no substitution for the experience of the local government, fire chiefs, and FS personnel in arriving at the logical WUI boundary description.</i>

### 2.1 Wildland-Urban Interface Delineation Process

<b>Objectives</b>	<ul style="list-style-type: none"> <li>◆ Review which communities were determined to be “at-risk” and how that determination was made.</li> <li>◆ Define the boundaries of the WUI.</li> <li>◆ Review the information gathered for the production of a base map for use in all subsequent data overlays.</li> </ul>
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ Are the communities listed in the <i>FR</i> (Vol. 66, No. 3, p. 753, Jan. 4, 2001)?</li> <li>◆ Were the communities listed in the <i>Arizona Wildland Urban Interface Assessment</i> (2004)?</li> <li>◆ Elements used in defining the WUI: <ul style="list-style-type: none"> <li>• Fuel hazards, consideration of local topography, fire history, vegetative fuels, natural fire breaks.</li> <li>• Historical fire occurrence.</li> <li>• Community development characteristics.</li> <li>• Local fire-fighting preparedness.</li> <li>• Municipal watershed protection.</li> </ul> </li> <li>◆ Base map information: <ul style="list-style-type: none"> <li>• Location of at-risk communities in the CWPP.</li> <li>• Boundary of the WUI.</li> <li>• Land status, infrastructure, and land features in the WUI.</li> </ul> </li> </ul>

**Things To Remember** This section can also include statements supporting the extension of the WUI to include communities that were not listed in either of these documents but do, however, meet criteria for designation as “at-risk.” The definition of an at-risk community in HFRA § 101 (1) is used to support the community delineation, as was the process used in the *Arizona Wildland Urban Interface Assessment (2004)*.

**Case Study** *There was a decision by the CAGs to define one WUI, although its boundaries were not contiguous, in the Sitgreaves and Apache National Forests and Fort Apache Indian Reservation. At-risk communities that are physically separated from other communities, such as Aripine, Heber-Overgaard, Forest Lakes, and Hideaways, are still considered as being in the WUI of the National Forest. This is why the communities that are not within a contiguous WUI are sometimes referenced as being located in WUI subareas. The CAGs used the FS 2001 WUI Programmatic Biological Assessment boundary as a starting point to deliberate and determine, through consensus, the WUI boundary needed for effective wildland fire management to protect the at-risk communities. The CAGs discussed § 104.d.1-3. in HFRA to ensure that authorized fuel reduction projects would be consistent with FS fuel reduction treatments as well as consistent with the Forest Plan, to take full use of the provisions of § 104 by minimizing alternatives to be analyzed for federal land treatments and to provide seamless fuel mitigation programs on federal and adjacent nonfederal lands. The CAGs reviewed this information along with special status species distribution and habitat designations to determine areas of “extraordinary circumstances” where an environmental analysis would not support a Categorical Exclusion (CE) decision. Figure 2.1 is an example of a WUI delineation map.*

- Documents Cited**
- ◆ HFRA § 101 (1)A,B, and C
  - ◆ *Field Guidance Identifying and Prioritizing Communities At Risk*, National Association of State Foresters, June 27, 2003.
  - ◆ *Federal Register* vol. 66, no 3, p.753 Jan. 4, 2001.
  - ◆ *FS 2001 WUI Programmatic Biological Assessment*.
  - ◆ “Mandatory Impact Minimization Measures to Protect TEP Species” and the “Recommended Measures to Minimize Effects to TEP Species and Habitat,” <[www.fs.fed.us/r3/wui](http://www.fs.fed.us/r3/wui)> for the WUI: Wildland Urban Interface.

These documents are provided on the enclosed CD for your reference and review.

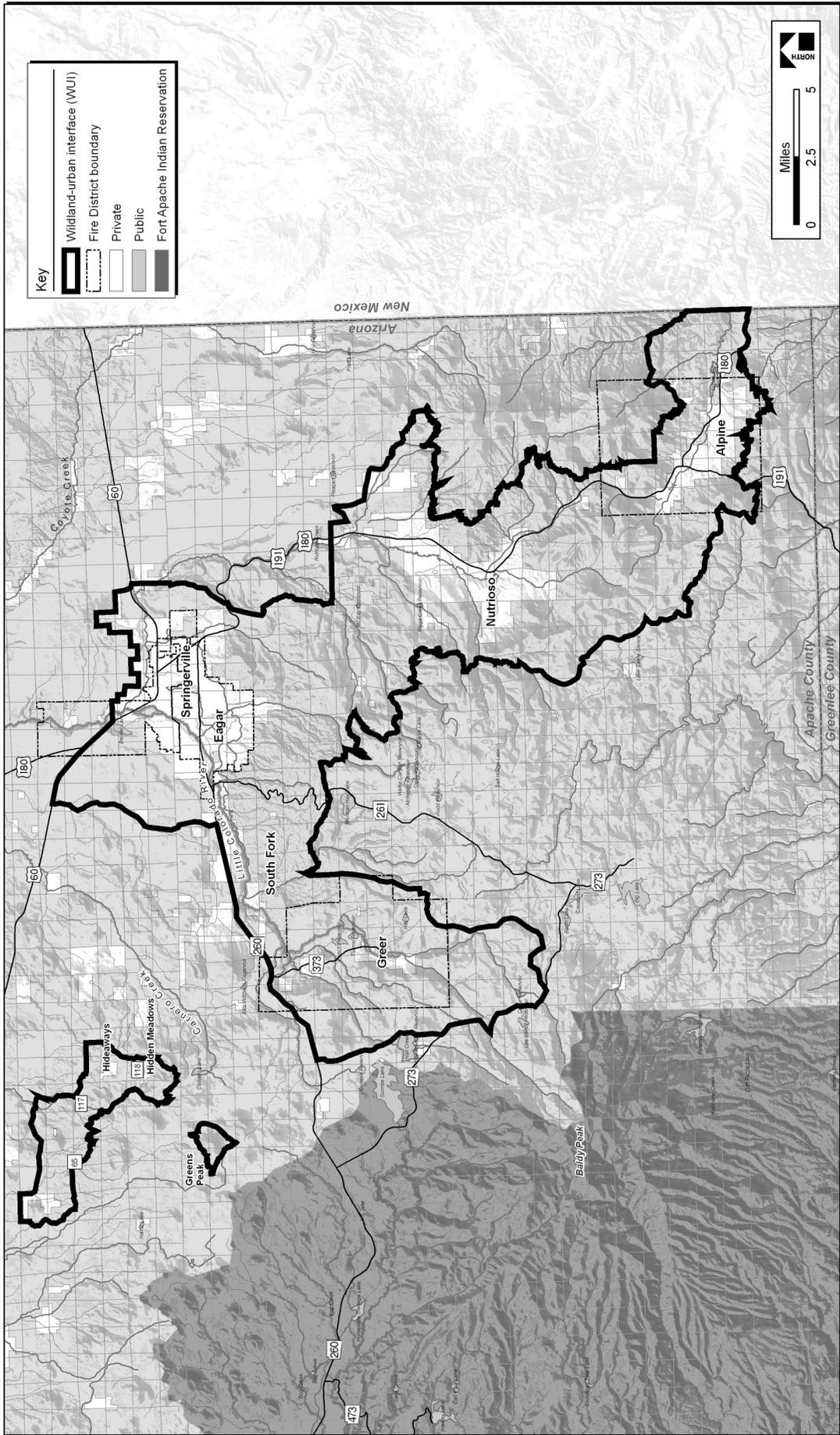


Figure 2.1

## 2.2 Community Description

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- Objective** ◆ Detail the “Chamber of Commerce”-type of information about each community.
- Key Components** ◆ Community CAG representatives are asked to provide information on their local communities and include any quantitative or qualitative information that would be important to be known about the communities. Items to be included for each community were:
- The location in relation to the WUI, land ownership and jurisdiction, development trends, population, and infrastructure (roads, utilities communications, schools, businesses, hospitals, and public facilities).
  - Discussion of risk factors to that community and significant community values, such as parks, museums and other local landmarks warranting special protection from wildland fire.
  - Municipal water supply systems that contribute to and distribute drinking water.
  - Population size, housing numbers, and other community information obtained from the local fire chief and from the 2000 Census. Most information was located at <[www.factfinder.census](http://www.factfinder.census.gov)> and in local government planning documents such as community general plans, county comprehensive plans, and other community development plans.
- Things To Remember** **For communities in Arizona, the Arizona Department of Commerce Web site, <[www.commerce.state.az.us/communities/community\\_profile\\_index.asp](http://www.commerce.state.az.us/communities/community_profile_index.asp)>, has a listing of community profiles where growth and development trends and general community information can also be found.**

## III. Community Assessment

- Purpose**
- ◆ Gather objective data to be placed on the base map.
  - ◆ Provide visual representation of those data to facilitate further informed decisions.
- Section Content**
- ◆ Current fire regime and Condition Class.
  - ◆ Wildland fuel hazards.
  - ◆ Risk of ignition.
  - ◆ Past fire occurrence.
  - ◆ Values of at-risk community.
  - ◆ Cumulative risk analysis, (Step 5 of the *Foresters' Handbook*).
  - ◆ Local preparedness and protection capabilities.

Community assessment is an analysis of the risk of catastrophic wildfire to CWPP communities.

- Things To Remember** **The areas of concern for fuel hazards, risk of ignition, past wildfire occurrence, and community values are evaluated and mapped; then each is given relative and qualitative ratings of “high,” “moderate,” or “low.” Specific computer-based analyses using geographic information system (GIS) software are performed to quantify and evaluate risks in the WUI. A composite of these ratings, cumulative risk from wildfires for the communities, can then be mapped. Much of the community assessment is quantitative, and thus relies on existing digital data. The most convenient data format is ESRI shapefile™ or geodatabase. Data in CAD environment will also suffice. The sources for these data can vary, but typically the Forest Service District Offices have existing GIS data that can be used for the analysis. Local communities may have data specific to their cities or towns to fill in the private land areas. To minimize cost and ensure a timely schedule, the CAGs wanted to use existing data and did not want to conduct any significant additional data gathering or analysis to fill in minor data “gaps.” Instead, the identification of these gaps was one component of the community assessment. File transfer protocol (FTP) sites were used to transfer data between client and vendor. The use of GIS and other data sources is included in more detail in the following sections.**

### 3.1 Fire Regime and Condition Class

<b>Objective</b>	◆ Evaluate federal lands in the WUI for fire regime and current Condition Class.
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ Fire regime. <ul style="list-style-type: none"> <li>• A natural fire regime is a general classification of the role a fire would play across a landscape in the absence of human intervention. The FS has created five categories of natural (historic) fire regimes based on the number of years between fires (fire frequency) combined with the severity of fire on dominant overstory vegetation (<i>Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management</i> [FS 2002]).</li> </ul> </li> <li>◆ Condition Class. <ul style="list-style-type: none"> <li>• The Fire Regime Condition Class (FRCC) of wildland habitat describes the degree to which the current fire regime has been altered from its historic range, the risk of losing key ecosystem components, and the vegetative attribute changes from historical conditions. The three classes based on departures from the natural (historical) regime are: <ul style="list-style-type: none"> <li>▶ Low (Condition Class 1).</li> <li>▶ Moderate (Condition Class 2).</li> <li>▶ High (Condition Class 3).</li> </ul> </li> </ul> </li> </ul>
<b>Case Study</b>	<p><i>As an example, the ponderosa pine forest in the SCWPP has a historic fire cycle of every 3–7 years, consistent with fire regime 1. The majority of lands in the WUI of both the ACWPP and the SCWPP are composed of Condition Class 2 and 3 lands, the greatest departure from natural conditions and, therefore, the greatest risk of significant habitat loss from wildfire. The lands in the ACWPP WUI were determined to contain 55 percent Class 2 and 39 percent Class 3 lands that would be considered as applicable to “authorized projects” in accordance with § 102.a.1,2, and 3.</i></p>
<b>Things To Remember</b>	<p><b>The desired future conditions of the WUI, as discussed in Section I, are developed in greater detail in this portion of Section III. This provides the reader with a picture of what the community is striving for in fuel reduction and forest health treatments in the WUI. The desired future condition of federal land is a return to Condition Class 1 as described in <i>Fire Regime and Condition Class (FCC) Field Procedures—Standard &amp; Scorecard Methods</i> (USDA Forest Service 2003):</b></p> <p style="padding-left: 40px;"><b>Open park-like savanna grassland, or mosaic forest, woodland, or shrub structures maintained by frequent surface or mixed severity fires. [S]urface fires typically burn through a forest understory removing fire-intolerant species and small-size classes and removing &lt;25 percent of the upper layer, thus maintaining an open single-layer overstory of relatively large trees. [M]osaic fires create a mosaic of different-age, postfire savannah forest, woodlands, or open</b></p>

**shrub patches by leaving >25 percent of the upper layer (generally <40 hectares [100 acres]). Interval[s] can range up to 50 [years] in systems with high temporal variability.**

### 3.2 Wildland Fuel Hazards

#### Objective

- ◆ Evaluate all federal and nonfederal lands in the WUI and quantify the fuel hazard condition.
- ◆ Quantify all factors that influence catastrophic wildland fire behavior as it pertains to hazardous wildland fuels.

#### Key Components

- ◆ Vegetation type.
  - These data can come from many sources and can range from being very coarse to highly accurate. The most accurate data will likely come from individual FS Ranger Districts. Many districts have widespread models that categorize the vegetation types. Many of these models are used by firefighters to help monitor and predict fire behavior. Additional sources for vegetation types can come from various state and national data sets. One Web site with downloadable data is <<http://biology.usgs.gov/npsveg/>>. Data on vegetation type in private areas are, at best, sporadic, and at worst, nonexistent. If any such data exist, they would be housed in the GIS department for each local municipality.
- ◆ Vegetation density.
  - Digital data containing information on vegetation density will likely be found only at the FS Ranger District level, and not part of any national dataset. Many vegetation-type models also include data on density. Similar to vegetation type, vegetation density in private areas is likely not to exist in any digital database. Because of this, densities may have to be extrapolated across private areas.
- ◆ Recently burned areas.
  - This includes wildfires that have occurred within the past 10 years. Wildfires within the past 5 years have almost all been mapped and reside in some form of digital database. This information should be available from the primary landowner of where the fire occurred, e.g., FS Ranger District, local municipality, state agency. Older burns (>5 years old) may or may not be digitized in GIS. Those will likely have to be digitized from a hard copy map.
- ◆ Recently treated areas (thinned, prescribed burns, etc.).
  - These areas include any thinning, prescribed burns, or other form of treatment intended to reduce the chance of catastrophic wildfire. Most recent treatments (within the last 5 years) have likely been digitized by the landowner (FS Ranger District, local municipality, state agency, etc.). Older treatments may or not be mapped, and may have to be digitized.

- ◆ Areas proposed to be treated.
  - These data can be obtained in a similar fashion to recently treated areas. There is more likelihood, however, that most of these areas have been digitized. Contact the applicable local or federal agency for this information.
- ◆ Slope and aspect of terrain.
  - The US Geological Survey(USGS) is the best source for slope and terrain data. Digital elevation models (DEM), at 10-meter resolution, are available for free download at the county levels. GIS analysis software can extract both slope and terrain from DEMs, at almost any level of categorization. A free source for DEMs can be found at <<http://data.geocomm.com/dem/>>. The Arizona State Forester’s office is also compiling an FTP site for these features near at-risk communities in Arizona.

**Things To Remember**    **Evaluation of the vegetative fuels on federal and nonfederal land in the WUI was conducted through a spatial analysis using GIS technology in a series of overlays that helped the CAG identify high, moderate, or low fuel-hazards risk areas. For each area of the WUI, the vegetation density, type, and distribution as well as slope and aspect analyses were conducted to assist in the categorization of areas of highest risk of fire ignition and spread from wildland fuels in the WUI.**

**Case Study**    *In the CWPPs, the presence of high fuel load (vegetation type and high number of trees per acre) automatically placed an area at high risk. Additionally, the presence of all the above variables in an area—high fuel load, slopes of more than 40 percent and a southwest-facing aspect—also placed it at high risk. Risk level associated with each of the above factors on wildfires is different however. To distinguish areas at moderate risk from areas with low risk, the variables were given different weights. In areas that have not been burned or treated in the past 10 years, vegetation type and density were given the highest priority, followed by slopes greater than 40 percent and south-southwest-facing aspect at medium. All the areas with low fuel load because they had been previously treated, or burned, or presence of flammable vegetation types at low densities were considered as low-risk hazard areas. Any area with two or more “medium” designations was automatically increased to the high-risk level.*

### **3.3 Risk of Ignition and Wildfire Occurrence**

**Objective**

- ◆ Assess the risk of ignition and wildfire occurrence in the WUI.

**Key Components**

- ◆ Locations of all fire starts on federal and nonfederal lands.
  - These data will typically occur as individual point locations and may or may not be digitized. FS Ranger Districts and state agencies are the best sources for these data because local municipalities are probably less likely

to have these data in digital formats. Fire starts in private areas may have to be manually added to the database, using hard-copy maps or address locations obtained from the local fire departments or districts.

- ◆ Areas of wildfires (burned areas).
  - These data are similar to the recently burned areas as described under the Wildland Fuel Hazards section of this handbook. As part of assessing the risk of wildfire occurrence, all wildfires, regardless of age, should be considered. Older fires (>5 years) may not reside in any digital data set. Those areas will have to be digitized using hard-copy maps.

**Things To Remember** *Data from past years are used to ensure that comparable conditions represent present-day or near-future conditions. A spatial density analysis is performed using previous fire start locations to delineate areas that are relatively more prone to fire starts. These are then overlaid with the previously burned areas to create a composite wildfire risk representation.*

### 3.4 Community Values at Risk

#### Objective

- ◆ Assess the risk to community values.

#### Key Components

- ◆ Developed land and infrastructure.
  - This may include schools, sensitive utilities, water tanks, housing, and commercial structures.
- ◆ Recreational areas.
  - This includes designated campgrounds, trail systems, and recreational areas of concentrated use that may relate to ignition or the need for evacuation notices and are significant to the economy and quality of life of the communities. These data can come from a variety of sources. Many FS Ranger Districts have trails and recreational areas digitized, as do local municipalities. Some data, however, will likely have to be filled by digitizing hard-copy maps.
- ◆ Old Growth Forest Management Areas.

#### Case Study

The Apache-Sitgreaves National Forests Plan was amended in 1996. FS data from 1996 were reviewed for designated old growth management areas. Page 44.1 of the Plan requires each Ranger District to maintain location maps of old growth stands, both existing and likely future ones. Pages 122–3 describe standards and guidelines for old growth management in the A-S NFs, meeting the newer management direction for old growth areas, described in HFRA (§ 102.e.3.A.) To ensure compliance with HFRA old growth management objectives, designated management areas were mapped and considered in risk assessments. FS Ranger Districts or relevant state agencies should have these management areas in digital form.

- ◆ Sensitive Wildlife Habitats and Management Areas.
  - Areas in the WUI may include known or potential habitat areas for species listed as threatened or endangered under (ESA) or designated as sensitive species by the Regional Forester. These areas were mapped and evaluated, since fuel treatments might potentially affect these species, and consultation with FWS for treatments in these areas may require a more extensive analysis under NEPA. FS Ranger Districts or relevant state agencies should have these areas in digital form.
- ◆ Local Preparedness and Protection Capability.
  - County emergency services plans, including notification and evacuation procedures, were reviewed. Discussions were conducted with fire chiefs to determine concerns in the response area, and the Insurance Services Office (ISO) rating for each fire department/district was evaluated. Higher risk was assessed to WUI areas with higher ISO ratings. Local municipalities will have fire department or fire district boundaries, though some may not have the spatial data in digital form. Digitizing existing hard-copy maps will be needed to fill in gaps.

**Things To Remember** These data were digitally overlaid, and high, medium, and low risks were assigned to each. All private land, developed land, and supporting infrastructure were each assigned high values. Sensitive wildlife habitats and management areas were given medium values, as were the trails, campgrounds, and other recreation areas. Any area with two or more “medium” designations was automatically increased to the high-risk level.

### 3.5 Cumulative Risk Analysis and Summary of Community Assessment

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#### Objective

- ◆ Determine the cumulative risk to the community by assessing risk, rating the risk, and representing that rating on a base map.

#### Key Components

- ◆ ISO ratings
  - For many years the ISO has conducted assessments and rated communities on available fire protection. The process rates each community’s fire protection capability on a scale of 1–10, (1 being ideal and 10 being poor) based on ISO’s Fire Suppression Rating Schedule. There are five factors that make up the ISO fire rating. Water supply, the most important single factor, accounts for 40 percent of the total rating. Type and availability of equipment, personnel, ongoing training, and a community’s alarm and paging system account for the remaining 60 percent of the rating.
- ◆ Cumulative risk analysis
  - This analysis synthesizes the risk associated with fuel hazards, ignition and wildfire occurrence, and community values. These different components

are analyzed spatially and an overall cumulative risk for the WUI is calculated. Cumulative risk is displayed as high, moderate, or low.

**Things To Remember** To more finely prioritize risk, a summary of the risk factors associated with each community should be developed by the CAG(s). This allows each community to have input and assess the distribution of Condition Class 2 and 3 lands, fuel hazards, ignition history, fuel loads, current or planned fuel reduction treatments, and fire fighting response capability of each community in the WUI.

## IV. Community Mitigation Plan

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◆ Describe recommendations by the CAG(s) to mitigate risk to the communities.</li> </ul>
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Recommendations for administrative oversight.</li> <li>◆ Development of fuel reduction priorities.</li> <li>◆ Recommendations for land treatments in the WUI to meet fuel reduction or modification objectives.</li> <li>◆ Recommendations for fire prevention and loss mitigation that may also include public education, information, and outreach; support for local wood products industries.</li> </ul>
<b>Things To Remember</b>	<p><b>Section IV of the CWPP completes Step 6 of the <i>Foresters' Handbook</i> by establishing fuel hazard reduction priorities and recommendations to reduce structural ignitability. This section of the CWPP was among the most difficult for the CAGs to complete. There was a wide range of opinion and deeply held personal beliefs that surfaced in discussions of the use of size caps in developing fuel reduction treatments on adjacent forestland. Issues related to environmental concerns (wildlife biodiversity, forest health versus industry needs) or to private property rights and government intrusions on private lands. These were all openly discussed and debated. The diversity of views was anticipated; however, because of longstanding small-community working relationships, a high level of trust had developed among all interests—from government, fire chiefs, industry, and environmental concerns—the CAGs created a consensus. This section of the CWPP process requires consistent and persistent facilitation to achieve the consensus of recommendations that directly protect the community and its identified infrastructure. This section also meets the requirements of HFRA by identifying and prioritizing areas for hazardous fuel reduction treatments and recommending the types and treatment methods to be employed.</b></p>

### 4.1 Administrative Oversight

<b>Objective</b>	<ul style="list-style-type: none"> <li>◆ Implementation of the CWPP in a manner that ensures timely decision making at all levels of government and that provides for community protection and forest restoration.</li> </ul>
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ Development of an “intergovernmental agreement” (IGA) creating a “Forest Management Commission” (FMC) (composed of local government representatives) that would guide the management and implementation of the CWPP.</li> </ul>

- ◆ Establish a “Zone Administrator” to carry out the charter of the FMC.
  - The Zone Administrator responsibilities would include planning, community relations, grant request, and reporting to the FMC all activities within the WUI that enhanced forest health and reduced the risk for catastrophic wildland fire.

**Things To Remember** Generally, the most efficient way to manage the urban forest is through a single entity responsible for implementing the action recommendations of the CWPP. This will allow for better coordination of management actions and consistency among local governments, fire departments, and emergency response services agencies.

Whether the single entity concept is adopted or not, the IGA needs to identify clearly who is responsible for coordinating, implementing, monitoring, and reporting to the CWPP signatories the status of the current-year priority recommendations. The IGA should also detail the development of an annual work plan proposing priority action recommendations based on implementation and effectiveness monitoring of programs conducted in previous years. The annual report and annual work plans should be submitted to the signatories for review and approval each year.

### Case Study

*IGA-enabled coordination was significant for the SCWPP and the ACWPP because of the multiple jurisdictions in the CWPP plan area. In a CWPP where there is a single local government and few fire departments, such administrative oversight agreements may not be necessary.*

*In 2004, the Arizona State Legislature introduced a version of the Healthy Forest Bill (HB 2549), which allows local governments to establish, through an IGA, an FMC, and a “Forest Management Zone” (FMZ) that would be equivalent to the WUI as described in the CWPP.*

## 4.2 Fuel Reduction Priorities

### Objective

- ◆ Risk areas are identified and categorized into manageable, site-specific areas in the WUI, with an overall risk value determined for each.

### Key Component

- ◆ The prioritization of treatments began in Section III with the WUI being identified, analyzed, and categorized according to potential risk from wildfire. The analyses of community values, fuel hazards, and fire history were combined and displayed on a single map that depicts areas of low, moderate, and high risk.
  - The easiest way to identify each site-specific area in the WUI is to label it based on the nearest community (see Figure 4.1).

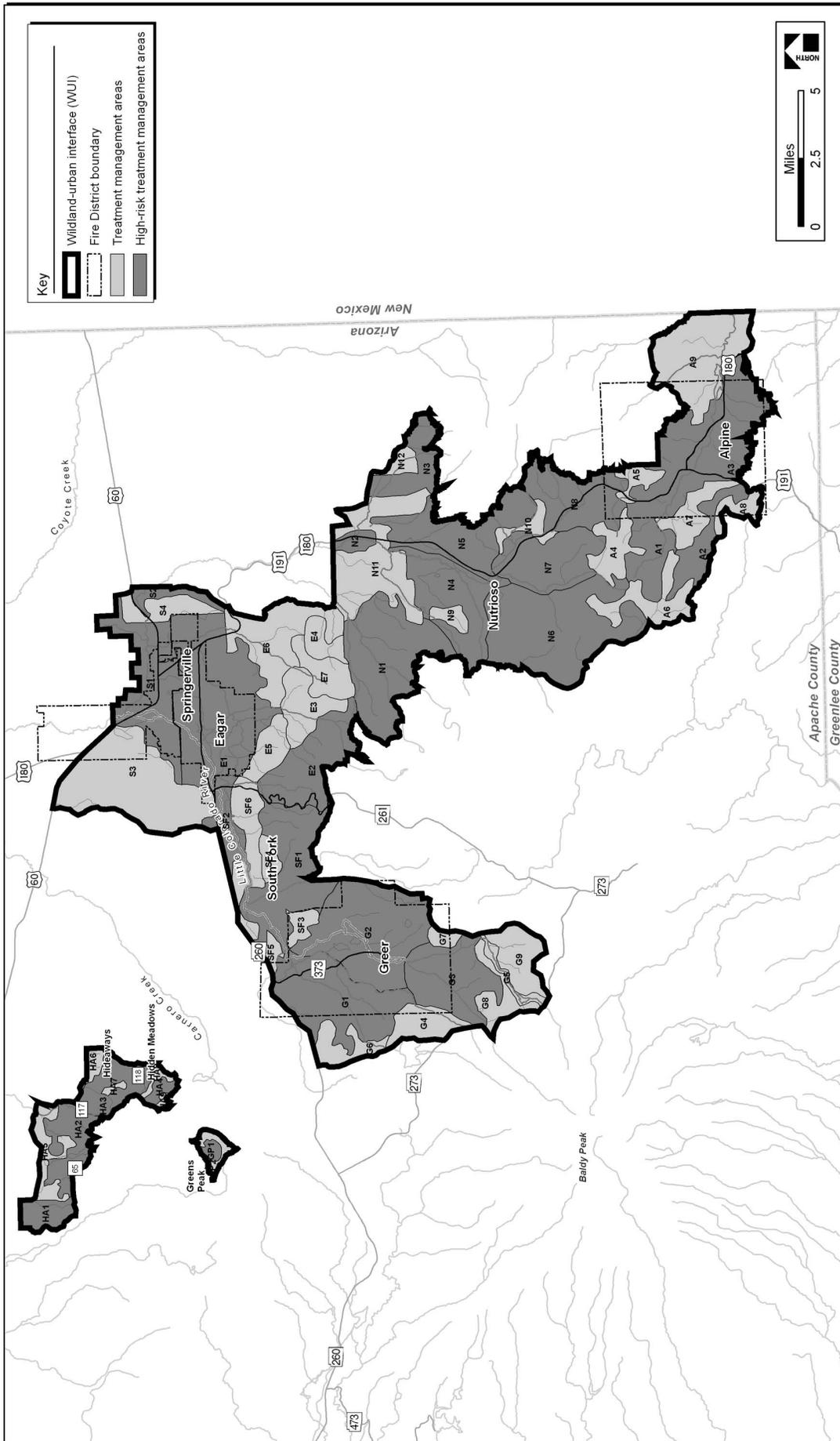


Figure 4.1

**Case Study** *Within the SCWPP, 58 site-specific areas were identified and given overall risk values. Each of these areas was ranked and described along with a recommendation for its preferred treatment type and method.*

### **4.3 Recommendations for Land Treatments in the WUI to Meet Fuel Reduction or Modification Objectives**

**Objective** ◆ Develop treatments that range from residential fire-safe approaches beginning at the wall of a structure on nonfederal lands to forest restoration methods at the exterior of the WUI.

**Key Components** ◆ Treatment types.

- Private lands
 

Within the community recommended treatments were developed after reviewing the following documents:

  - ▶ Local community ordinances.
  - ▶ Firewise Communities USA™ program.
  - ▶ *Forest Restoration for Homeowners: A guide for residents of Southwestern Ponderosa Pine Forests* (produced by the Ecological Restoration Institute at Northern Arizona University).

Ultimately, a consensus recommendation for treatments on private land ranging from adjacent to a structure to undeveloped private parcels in excess of 2 acres needs to be developed.

**Things To Remember** **It is recommended that private landowners who wish to adopt fuel modification plans other than those described in Zones 1 and 2 of Table 4.2 have them prepared or certified by a professional forester, a certified arborist, or other qualified individuals. This fuel modification plan is designed to give additional flexibility to private land parcels while providing for community fire protection. That plan should identify the actions necessary to promote forest health and to help prevent the spread of fire to adjacent property by establishing and maintaining defensible space. The plan should include considerations for wildlife and for surface and ground water protection. The actions identified by the fuel modification plan should be completed prior to development of the property. An example of a modification plan can be found on page 48 of the ACWPP.**

The components of a private land fuel modification treatment were included in this section to ensure consistent application of treatments across the WUI.

- Federal lands
 

For the recommended treatments of federal lands, the document review included:

- ▶ Previous FS fuel reduction prescriptions within or adjacent to the WUI.
- ▶ A Biological Opinion issued by FWS for the Biological Assessment on WUI treatments in the Southwest Region.
- ▶ *Apache-Sitgreaves National Forests Plan (A-S Forest Plan)*.

**Things To Remember**    **The CWPP treatment recommendations for “authorized projects” on federal lands should be of the same type as recommended treatments on nonfederal lands to take full advantage of §104 Environmental Analysis of HFRA. An example of the recommended fuel modification and treatment plans is identified in Table 4.2.**

### Case Study

*The CAGs ensured that fuel modification treatments in the WUI, as recommended in the CWPP, would be consistent with the vast majority of fuel treatment recommendations in previous FS environmental assessments and as identified in the A-S Forest Plan.*

*It was also important to the CAGs to clarify how the intent of HFRA, in terms of large-tree retention (§ 102.f), was to be accomplished in the CWPPs. The CAGs wanted to ensure that in their descriptions of these treatments, hazardous fuel reduction focused on small-diameter trees and maximized retention of large trees. Treatments called for retention of conifers greater than 16-inch diameter breast height (dbh) and pinyon-juniper trees greater than 12-inch diameter root collar (drc). Target spacing and basal area (BA) were designated to provide fire-resilient stands including fuel breaks on federal or state trust lands within ½ mile of private land and adjacent to evacuation routes. However, conifers greater than 16-inch dbh could be removed if dead, diseased, or dying or if needed to meet fire-resilient stand spacing and BA requirements. The CAGs reviewed the Standards and Guidelines established with the A-S Forest Plan to ensure recommended treatments complied in the Plan in terms of down logs, snag retention, and other land and wildlife features. The exception to these Standard and Guidelines was in designated fuel breaks where all down logs and snags could be removed. The CAGs believed it important for any person reading or reviewing the CWPP to clearly understand how the communities addressed and promoted large-tree retention and how they addressed old growth. The old growth standard and guides for the A-S NFs were reviewed for the forest types, and old growth management areas were identified and included in the development of CWPP treatment prescriptions. The CAGs had considerable discussion about the concept of a size cap on trees to be considered in fuel modification treatments. Ultimately, the CAGs agreed on the specific treatments to ensure clarity rather than to be vague about the type of habitat modifications, viewsapes, and wildland fire protection that is supported at the community level.*

Table 4.2 Fuel modification and treatment plans

Treatment number	1			2		3		4		5		6	
Treatment category	Zone 1 (0-10 feet from structures)	Zone 2 (10-30 feet from structures)	Zone 3 (30-100 feet from structures)	Undeveloped private parcels in excess of 2 acres		Federal or Arizona State Trust Lands within 0.5 mile of private land		Pinyon/juniper woodland within the WUI		Federal lands greater than 0.5 mile from private land		Restoration of federal lands greater than 0.5 mile from private land	
	Remove all ladder fuels and reduce flammable vegetation. Remove and destroy all insect-infested, diseased, and dead trees. Create separation between trees, tree crowns, and other plants based on fuel type, density, slope, and other topographical features. Reduce continuity of fuels by creating clear space around brush or planting groups.	Remove all ladder fuels; remove and destroy all insect-infested, diseased, and dead trees. Maximum density of trees (which ever is greater for PP <sup>a</sup> or PFA <sup>a</sup> ) at 80-100 trees/acre or 100 trees/acre.	Remove all dead diseased and dying trees. Fall dead trees away from stream channels with defined bed and banks.	Slopes <35%	Stream beds, channels and Slopes ≥ 35%	Slopes <35%	Same as for slopes <35%.	All slopes	Ponderosa pine and mixed conifers on slopes <35%	Ponderosa pine and mixed conifers on slopes ≥35%	PAC <sup>a</sup> or PFA <sup>a</sup> management area	Ponderosa pine; presettlement	
<b>Vegetation</b>				Remove all ladder fuels; remove and destroy all insect-infested, diseased, and dead trees. Fuel modification plan developed to promote forest health, prevent spread of fire to adjacent property, and create defensible space with considerations for wildlife and groundwater protection.	Target BA for conifers is 40-60. Conifers greater than 16-inch dbh <sup>b</sup> will not be cut <sup>c</sup> unless needed to promote fire-resilient stands. Conifers 5-16 inches will be thinned. In areas <40 BA, conifers between 1.5 and 4.9 inches dbh will be retained and spaced 15-20 feet from existing trees. Grassland vegetation types will be mechanically treated to remove fuel within a designated fuel break of not more than one chain.	Target BA for conifers is 40-60. Conifers greater than 16 inches dbh will not be cut <sup>b</sup> unless needed to promote fire-resilient stands. Conifers 5-16 inches dbh will be thinned. In areas with < 40 BA, conifers between 1.5 feet tall and 4.9 inches dbh will be retained and spaced 15-20 feet from existing trees. Where feasible, 1-acre openings will be established in areas with goshawk guidelines.	Target BA for conifers is 60-80. Conifers greater than 16 inches dbh will not be cut unless needed to promote fire-resilient stands. Conifers 5-16 inches dbh will be thinned. In areas less than 60 BA, conifers between 1.5 feet tall and 4.9 inches dbh will be retained and spaced 15-20 feet from existing trees. Where feasible, 1-acre openings will be established in areas with goshawk guidelines.	Pinyon-juniper woodlands will be thinned to a spacing of 20 to 35 feet between trees, as needed to promote fire-resilient stands. All trees >12 inches drc <sup>c</sup> will be left unless it is necessary to remove some to achieve the desired spacing. Alligator junipers, when present, will be favored over other juniper species when trees are left in place.	Compliance with Apache/Sitgreaves National Forests Plan (Plan) standards and guides.	Restoration is designed to promote and protect presettlement trees, combined with wildlife and watershed improvements. Tree densities will vary from 60-100/acre in goshawk foraging areas to 30-70 BA in habitats of special concern. All presettlement trees will be retained; younger trees within competitive distances will be removed unless needed for replacement. Replacement trees will be identified close to remnant evidence. Average of ~1.5 trees 16 inches dbh or greater or 2-3 trees 16 inches dbh or less are used for replacements. Twenty % of the area may be left untreated, including snag piles, brush piles, and ladder fuels. Steeper corridors, water sources, steeper slopes, squirrel nests, and midden areas.	Slash will be treated as described for federal land in treatment 5. All slash treatments are conducted in compliance with Plan standards and guidelines. Slash treatments will be concluded to promote wildlife and watershed components.		
<b>Slash</b>	Remove all dead plant material from ground, prune tree canopy, and remove roof, remove branches within 10 feet of chimney, remove flammable debris from gutters and roof surfaces, and reduce natural flammable material 2-4 feet above ground around improvements.	Control erosion and sedimentation. Remove all litter to a depth of 1 inch.	Same as Zone 2.	All slash, snags, and vegetation that may grow fire-critical fuels; other ground fuels, ladder fuels, and dead trees; and the thinning from live trees must be removed, mechanically treated <sup>d</sup> (chipped, etc.), or piled and burned along with existing fuels.	Clean dead and down debris in channels where debris is mobilized in floods, creating downstream jams. Some slash and debris can be scattered and retained in small streambeds where slash can help retain runoff and sediment and provide headcut stabilization.	All logs >3.9 inches in diameter from the thinning will be piled along with slash on 25% of slopes >25%, all mechanically treated (chipped, etc.), removed or piled, and burned. On slopes of 25-35%, all created slash will be hand-piled along with existing fuels and burned.	All created slash <16 inches in diameter will be piled along with existing fuels and beehive control measure, all created slash >4 inches in diameter will be hand-piled, along with existing fuels, and burned.	For wildlife habitat enhancement, leave one slash pile/3 acres scattered slash on 30% of the treated area. Slash will be chipped, removed, or piled and burned within 0.25 mile of private lands or within fuel breaks.	All logs >3.9 inches in diameter from the thinning will be piled along with slash on 25%, all slash will be mechanically treated (chipped, etc.), or piled and burned. On slopes of 25-40%, all created slash will be hand-piled, along with existing fuels, and burned.	All created slash <12 inches in diameter will be hand-piled along with existing fuels and burned. Created slash >12 inches in diameter will be piled or bucked into short lengths. For bark beetle control measures, all created slash from PP >4 inches in diameter will be bucked into 14-inch lengths prior to piling.	NA for Grassland Types.	NA for Grassland Types.	

<sup>a</sup> BA = basal area (in square feet)  
PP = ponderosa pine  
dbh = diameter breast height;  
PAC = spotted owl protected activity center  
PFA = goshawk post fledgling family area  
drc = diameter root collar  
<sup>b</sup> All insect-infested, diseased, and dead trees should be removed and destroyed in excess of A-S NF's standard for snags.  
<sup>c</sup> Maintenance treatments include mechanical removal or burning treatments designed and implemented to diminish understory mass and reduce ladder fuel.

- ◆ Fuel reduction cost.
  - The CWPP must describe the funding needs and time frames to accomplish fuel reduction and community wildfire mitigation recommendations.

**Things To Remember** The CAGs should review data from ongoing fuel reduction projects on federal and nonfederal lands in or near the WUI that meet desired conditions outlined in the CWPP.

An average per-acre cost of fuel reduction treatments was determined by the CAG for federal and nonfederal lands. This average per-acre treatment cost determined funding needs, based on an acre-by-acre assessment of land status in each treatment management area. The recovery cost of wood products from nonfederal parcels is comparable to that achieved with federal treatments; however, the treatment cost is much higher. Across all landscapes, the commercial value of the product removed will average less than 20 percent of the cost of effective treatment on federal parcels, and less than 15 percent of that for residential land treatments. Cost estimates for treatments in the WUI are based on these estimates for both federal and nonfederal land treatments. A component that may need to be addressed is the inability of some residents to bear fuel reduction costs associated with nonfederal land treatments.

### Case Study

*In the development of this portion of Section IV, the CAGs considered all potential benefits the HFRA provided in environmental assessments (§ 104) as well as the use of the new CEs and CEQ Guidelines. The CAGs reviewed the WUI boundaries and proposed treatments that were described in the FS 2001 Programmatic Biological Assessment and the resultant mitigation measures that minimize the effects to listed and proposed species as described in the Biological Opinion issued by FWS. The CAGS fully recognized that additional consultation would be necessary if project boundaries or treatments were altered from the 2001 Regional Programmatic Consultation process.*

*For project proposals in the WUI, however, the FS is not required to analyze any alternative to the proposed action unless the at-risk community has adopted a CWPP and the proposed action does not implement the CWPP in terms of general location and treatment methods. If the proposed action does not implement a CWPP, the analysis must consider the CWPP proposal as an alternative to the proposed action. Conversely, if the proposed action does implement a CWPP, the action alternative could be the treatments described on the specific federal lands in the WUI of the CWPP.*

*For these reasons, the communities in the CWPP have strived to identify treatment areas where no extraordinary environmental circumstances exist and have recommended treatments that comply with the A-S Forest Plan. In federal*

*land management areas where an environmental assessment shows no additional documentation is warranted, the priority areas identified for treatment in the CWPP and treatments recommended to meet fuel reduction or modification objectives should be considered as the action alternative by A-S NFs.*

#### 4.4 Prevention and Loss Mitigation

##### Objective

- ◆ Assist in the coordination of long-term interagency mitigation of catastrophic wildfire events in at-risk communities. There is a wide range of mitigation measures that can be used.

##### Key Components

- ◆ Improved protection capability and reduction in structural ignitability.
  - The risks of wildland fire igniting and spreading in the WUI are taken seriously by the communities. Fire departments and FS fire response crews' performance can be leveraged through combined responses. In the wake of a large fire or in the case of multiple fires, however, it may not be possible to protect every home and structure in the WUI. Community leaders as well as private landowners must take actions to reduce fire risks and promote effective responses to wildland fires. The following are recommendations to enhance protection capabilities in the CWPP communities:

Provide information to the communities for use in adoption of an Urban-Wildland Interface Code (Arizona Revised Statutes [ARS] 9-906 or the equivalent code [if it exist] in states other than Arizona) and/or Fire Prevention Code (ARS 11-861). Such a code or codes would describe specific land standards that apply to trees and describe which conditions are acceptable and which are not. Such a code or codes in the WUI should also address planning and zoning building codes for fire-resistant construction materials, emergency response design considerations, and fire-resistant landscaping and will depend on housing density and community values-at-risk, such as watersheds, archeological resources, recreational resources, wildlife, and grazing and timber resources. Local land use policies could include incentives for private landowners to address defensible space and fuels management on their properties and implement fire-sensitive land use planning and subdivision requirements. In addition communities may propose to develop and refine jurisdictional agreements needed for seamless land treatment policies and development of ordinances and codes designed to reduce ignitability.

The communities may recommend adoption of a consistent preparedness planning model, one that analyzes cost-effective fire protection across all administrative boundaries. In developing this model, county and local protection needs and resources must be considered. The model must produce refined, common reference and coordinated suppression efforts

among fire departments, fire districts, and FS fire management and response departments.

The communities need to develop and map specific areas of high risk. These maps will depict resource needs and specific fire-fighting descriptions that narrowly focus on suppressing fires occurring in the high-risk areas. For example, within a specific neighborhood, there might be residents identified with special needs—a nursing home or a campsite—that, for evacuation, would require notifying specialized personnel, or, there might be a propane gas distribution center or other defined responses within the high-risk area. Additionally, specific subdivisions that currently have only one-way ingress/egress routes will be evaluated for evacuation and fire response.

Fire departments and fire districts need to enhance regulatory and control policies, such as open burning, campfires, smoking restrictions, smoke management plans, and other uses of fire within their boundaries and develop relationships with local law enforcement officials to ensure compliance with any adopted regulations.

Communities need to incorporate trails and recreational areas and facilities into fire protection and response plans. Additional comprehensive and frequent training for fire fighters also need to be provided. FS, local fire departments, and fire districts need to conduct a common training activity at least once a year prior to entry into the fire season for the purpose of emphasizing tactics of WUI suppression and interagency coordination. Continuing WUI fire suppression training must be made available to both volunteer and regular firefighters in each fire department and fire district to maintain the highest level of service.

- ◆ Promote community involvement and improved public education, information, and outreach.
  - Develop a uniform “Urban-Wildland Interface Code” to enhance wildfire management strategies on private land. The IGA signatories should adopt a “tree policy” standard to meet any adopted fire prevention code. It is recommended that a public involvement process that meets public notice requirements of participating governments be initiated throughout the CWPP planning area. This public involvement process will derive, through overall community consensus, the seamless land use and structural codes and ordinances necessary to reduce ignitability throughout the CWPP communities.
  - Expand the use of current public information tools for fire-safe residential treatments as an immediate action step. This will be accomplished through information mailers to homeowners, presentations by local fire departments, and development of specific promotional materials.

- Develop a video presentation describing treatments a homeowner can undertake to reduce ignitability through both structural and land treatment improvements.
- Develop an open-house approach to community education by conducting tours of both residences that are fire-safe and of federal lands in the WUI that have been treated to meet Condition Class 1 standards.
- Schedule fire departments and fire districts to each offer a series of community awareness seminars to inform and educate the citizenry regarding the need for fire-safe treatments of both public and private lands. These seminars will be scheduled annually to best accommodate year-round and part-time residents.
- Have fire department and fire district personnel act as “goodwill ambassadors” by passing on wildland fire and residential preparedness information at community activities and events. Information can be made available in both printed and oral formats that explain the need for fire awareness and the benefits of preparing private property for potential fire ignition.

**Things To Remember**    **The communities in the CWPP should develop and implement public outreach programs to help create an informed citizenry. The goal is to have residents support concepts of fire-safe landscaping and naturally functioning forest systems through restoration management and rapid response to wildland fire.**

**The CWPP is intended to be a long-term strategic instrument to address hazardous fuels and enhance forest health. To effectively achieve these goals, a grass roots collaborative structure of individual citizens, supported by local governments as full partners, will provide the most effective long-term means to maintain community momentum.**

- ◆ Enhance local wood products-related industries.
  - CWPP communities need to support and promote private contractors who perform fire-safe mitigation work. Communities should be committed to employing all appropriate means to stimulate industries that will utilize all size-classes of wood products resulting from hazardous-fuel reduction activities. The utilization of forest products significantly reduces treatment costs. This can become an incentive for treatment of lands rather than allowing cost to be a disincentive for fuels mitigation treatments on nonfederal lands. Recommendations include:
    - ▶ Support and promote contractors who treat private land parcels.
    - ▶ Support the establishment of “healthy forest enterprise businesses” and support the new tax credit program for forest-related industries (ARS 41-1516 or relevant code in states other than Arizona).

- ▶ Support the development of markets and industries that extract saleable material from fuel reduction management projects (e.g., biomass, pulpwood, firewood).
- ▶ Support and promote university programs designed to help loggers develop sound forest practices and diversify their skills.

**Case Study**

*Other recommendations made by the White Mountain community CAGs included:*

- ◆ *Consistent fire preparedness planning model.*
- ◆ *Coordinated smoke management planning.*
- ◆ *Specific fire response and evacuation planning within the WUI.*
- ◆ *Fire rehabilitation planning.*
- ◆ *Incorporation of recreational trails and facilities into fire response planning.*

## V. CWPP Priorities: Action Recommendations And Implementation

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◆ For the CAGs to make collaborative community decisions that identify, rank, and transfer, from Section IV of this handbook, the highest of the high-action recommendations to meet the goals of the CWPP.</li> </ul>
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Administrative oversight.</li> <li>◆ Priorities for reducing hazardous fuels and restoring forest health.</li> <li>◆ Priorities for reducing structural ignitability and identifying protection capabilities.</li> <li>◆ Priorities for promoting community involvement through education, information, and outreach.</li> <li>◆ Priorities for enhancing local wood products-related industries.</li> <li>◆ Funding needs and timetables for carrying out the highest-priority action recommendations.</li> </ul>

### 5.1 Administrative Oversight

<b>Objective</b>	<ul style="list-style-type: none"> <li>◆ Implementation of the CWPP in a manner that ensures timely decision making at all levels of government and that provides for community protection and forest restoration.</li> </ul>
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ The most efficient way of implementing the action recommendations in a CWPP consisting of multiple jurisdictions is through a formal agreement to delegate accountability to a single entity.</li> </ul>

Establishing a unified effort to collaboratively implement the CWPP embraces adaptive management principles that enhance decision making at all levels of government. Therefore, creation of the FMC could be the primary action recommendation of CWPP communities where multiple jurisdictions are signatories to the CWPP.

<b>Things To Remember</b>	<p><b>Once the IGA signatories have established the FMC, they may create a Zone Administrator position to carry out the charter of the FMC. The communities could then develop action recommendations for funding assistance through HFRA and local governments to maintain the position.</b></p>
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### 5.2 Priorities for Reduction of Hazardous Fuels and Forest Health Restoration

<b>Objective</b>	<ul style="list-style-type: none"> <li>◆ Collectively, CWPP communities need to:             <ul style="list-style-type: none"> <li>• Rank the high-risk management areas.</li> <li>• Rank the action recommendations from each community.</li> </ul> </li> </ul>
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**Key Components**

- ◆ Recommended treatment types, project partners, and “acres-by-ownership” (by owner type and acreage) for each priority rating were advanced from Section IV to determine needed funding for each priority management area. The ranking may be a difficult process for the communities and may require considerable soul searching by some individuals to forge the consensus required for evaluating population centers, infrastructure, and resource distribution. However, the action recommendations need to be developed through the consensus of the CAG members by selecting management areas first *within* the communities and then *among* the communities.
- ◆ The funding needed to complete each of these projects was calculated based on the costs derived through the Section IV process. The intent of the CAGs at this stage of the CWPP process is to address these areas over a given time span—e.g., 5 years. However, each CAG recommendation should reflect a reality check regarding the number of acres that can be treated during a single field season and the “ramp up” local businesses would need to complete action recommendations. Also the CAGs need to consider realistic timelines developed for each action recommendation, allowing for phased treatments that would not overwhelm local resources, and to establish a realistic annual budget for treatments.

**Case Study**

*An example of the priority treatment management areas and recommended treatments made by the ACWPP communities for the Fiscal Year 2004/05 is shown in Table 5.1.*

**5.3 Priorities for Reducing Structural Ignitability and Identifying Protection Capabilities**

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**Objective**

- ◆ Collectively, CWPP communities need to:
  - Rank protection capabilities.
  - Rank the action recommendations from each community for reducing structural ignitability.

**Key Component**

- ◆ Prioritizing equipment needs.
- ◆ Initiating a public involvement process for fire code generation.
- ◆ Funding a public involvement process that could assist in development of a consistent Urban-Wildland Interface fire code.
- ◆ Generating cost estimates for each action recommendation.

**Table 5.1** Action recommendations for reduction of hazardous fuels

Treatment management area	Location and description	RT <sup>a</sup>	Project partners	Estimated treatment costs
Eagar (E2)	Federal land in pinyon-juniper country	3 and 4	Apache County, AZ State Land Depart., and Town of Eagar	federal, 4,645 acres \$471,932 annually
Greer (G3)	Includes federal and private lands west of the community	1–5	Apache County and the community of Greer	federal, 4,532 acres \$460,451 annually nonfederal, 235 acres \$33,840 annually
Alpine (A3)	Includes the community of Alpine, on federal and private lands	1–3 and 5–6	Apache County and the community of Alpine	federal, 1,923 acres \$195,377 annually nonfederal, 2,480 acres \$357,120 annually
South Fork (SF1)	Includes the South Fork area, on both private and federal lands	1–3 and 5–6	Apache County	federal, 5,491 acres \$555,885 annually nonfederal, 883 acres \$127,152 annually
Nutriosio (N6)	Includes private land within the community of Nutriosio and federal lands to the west and south	1–3, and 5–6	Apache County	federal, 8,058 acres \$818,693 annually nonfederal, 1,789 acres \$257,616 annually
Hideaways (H1)	Includes Hideaways and some of the surrounding ANF lands	1–3 and 5	Apache County and Hideaways Homeowners Association	federal, 782 acres \$79,451 annually nonfederal, 492 acres \$70,848 annually
Springerville (S1)	Community of Springerville and State Trust Lands	1–4	Apache County, AZ State Land Depart., and Town of Springerville	nonfederal, 5,857 acres \$843,408 annually
Greens Peak (GP1)	Includes federal lands around the structures on Greens Peak	1–3 and 6	FS Springerville District	federal, 320 acres \$32,512 annually

<sup>a</sup> recommended treatment—see Table 4.2; treatments all begin in Fiscal Year 2004/05 and end in Fiscal Year 2009/10

## 5.4 Priorities for Promoting Community Involvement through Education, Information, and Outreach

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- Objective**
- ◆ Collectively, CWPP communities need to:
    - Rank the action recommendations from each community regarding community education, information, and outreach programs
- Key Components**
- ◆ Funding estimates must be made for each specific action recommendation and included in the proposed budget.

## 5.5 Priorities for Enhancing Local Wood Products-Related Industries

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- Objective**
- ◆ Collectively, CWPP communities need to:
    - Rank the action recommendations for enhancing local wood products-related industries.
- Key Components**
- ◆ The CWPP Communities that could support wood products-related industries will need to promote and encourage new and existing qualifying businesses to participate in a program similar to the state of Arizona's Healthy Forests Enterprise Incentive.
  - ◆ To effect a successful partnership, ensure that representatives from relevant industries have the opportunity to review the CWPP and provide comment on the industry needs.
  - ◆ Development of local businesses to support harvesting, transporting, or processing of forest products should be consistent with the goals of the CWPP.
- Things To Remember**
- Enhancing local wood products-related industries could prove to be the most economical way to deal with the volume of products generated from the removal of small trees during fuel reduction projects. Enhancing or creating a market for small trees can greatly reduce treatment cost or, conversely, increase the number of acres that can be treated with each fund allocation. The economic benefit realized from greater utilization of forest products can become an incentive for growth in the local forest products industries and for fire-safe treatment of nonfederal lands. The CWPP communities may want to consider partnering with each other and consider the need to continue to support and promote private contractors who perform fire-safe mitigation work (e.g., fuel hazards reduction). The communities also should support and seek opportunities for local contractors to start new businesses or to expand existing businesses in the fire prevention/fuels reduction arena.**

## 5.6 Requested Funding

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### Objectives

- ◆ Collectively, CWPP communities need to:
  - Determine funding needs and timetables for carrying out the highest priority action recommendations.

### Key Components

- ◆ An overall first-year fiscal budget should be developed that depicts funding for administrative oversight, hazardous fuel reduction treatments, fire protection and reduced ignitability, public education and outreach, and enhancement of local forest products-related industries.
- ◆ Monies should come from HFRA funds that have been appropriated to the FS and to the State Forester for CWPP implementation.

### Things To Remember

**At the end of the fiscal year, projects implemented from these action recommendations should be monitored for effectiveness in terms of meeting CWPP objectives. For the life of the CWPP, recommendations for additional projects will be made for each coming fiscal year based on project performance in the prior fiscal year.**

## VI. Monitoring Plan

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◆ Development of a monitoring plan.</li> </ul>
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Administrative oversight, monitoring, and CWPP reporting.</li> <li>◆ Effectiveness monitoring.</li> <li>◆ Nonfederal monitoring considerations.</li> <li>◆ Federal monitoring considerations.</li> <li>◆ Independent monitoring process.</li> </ul>
<b>Things To Remember</b>	<p><b>Section VI clearly outlines:</b></p> <ul style="list-style-type: none"> <li>◆ <b>The monitoring goals of the CWPP.</b></li> <li>◆ <b>The interest of the communities in multiparty monitoring.</b></li> <li>◆ <b>Meeting the recommendations from Step 7 of the <i>Foresters' Handbook</i>.</b> <ul style="list-style-type: none"> <li>• <b>Providing the “assessment strategy” to ensure “relevance and effectiveness” of the CWPP over the long term. The assessment strategy includes measures for each action recommendation delineated in Section V of the CWPP.</b></li> </ul> </li> <li>◆ <b>The need for an annual report to be developed for the implementation of the CWPP.</b> <ul style="list-style-type: none"> <li>• <b>A subsequent “annual work plan” to modify or update the Mitigation Plan (Sections IV) to present new recommendations or needed and subsequent actions recommendations (Section V). These proposed new priorities for the fiscal year are included only if agreed to and concurred with by the CWPP cooperators. The annual work plan is submitted to the local governments for approval of the next year’s priority action recommendations and is subsequently forwarded to FS and the State Forester for concurrence. At the end of the given long-term planning period, the CWPP should be revised, including preparation and presentation of a new analysis of FRCC and each stated objective of the CWPP.</b></li> </ul> </li> </ul>

### 6.1 Administrative Oversight, Monitoring CWPP and Reporting

<b>Objective</b>	<ul style="list-style-type: none"> <li>◆ The CWPP should recommend that administrative oversight of the CWPP be vested in a Zone Administrator; this position will be accountable for implementing, monitoring, and reporting the CWPP.</li> </ul>
<b>Key Components</b>	<ul style="list-style-type: none"> <li>◆ The Zone Administrator, whether a single local government or an entity established through agreement of multiple local governments, should be accountable for:</li> </ul>

- Both implementation and effectiveness monitoring.  
The CWPP will be evaluated each year for each recommendation implemented (implementation monitoring) and how well the group of recommendations performed in meeting the overall CWPP objectives (effectiveness monitoring).
- Through the use of adaptive management principles, providing an “annual work plan” to modify or update the Mitigation Plan (Sections IV) if new recommendations are made or needed. The Zone Administrator will also be accountable for proposing the actions recommendations (Section V) detailing new priorities for the fiscal year if agreed to and concurred with by the CWPP cooperators.
- At the end of the given long-term period, revising the CWPP including preparation and presentation of a new analysis of FRCC and each stated objective of the CWPP.

**Case Study**

*The CAGS believed the recommendation to create a “Zone Administrator” through an IGA was necessary because of the multiple jurisdictions that compose the CWPP. If a CWPP was composed of a single or a limited number of local governments and fire departments, such a recommendation may not be necessary to efficiently implement, monitor, and report on the action recommendations. The Zone Administrator, whether a single local government or an entity established through agreement of multiple local governments, should be accountable for both implementation and effectiveness monitoring.*

## 6.2 Effectiveness Monitoring

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**Objectives**

- ◆ Discloses the actual “performance measures” that the Zone Administrator will use in determining progress each year of the CWPP.
- ◆ Uses data obtained through these performance measures to produce the “annual report,” and will lead to the development of the “annual work plan.”
- ◆ Designed to complement monitoring data needed by the FS to comply with § 102 g.1.A.4. for FRCC and also § 102.g.1.A.5. in relation to ecological and social effects of CWPP implementation.

**Key Components**

- ◆ A review of the performance measures contained within *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan* is recommended prior to developing performance measures for a CWPP.

## 6.3 Nonfederal Monitoring Considerations

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**Objective**

- ◆ Describe the monitoring tools that will be used to determine progress in meeting CWPP goals for nonfederal lands.

**Key Components**

- ◆ § 102.g.8. of HFRA requires the monitoring of authorized projects implemented on federal land to be reported by changes in FRCC.
- ◆ Recommendations for modifications to or extension of HFRA would be made through this evaluation report to the Wildland Fire Leadership Council.
- ◆ The CWPP should recommend fuel reduction treatments to be of the same type across federal, tribal, and nonfederal lands; the monitoring of lands moved from Condition Classes 2 and 3 to Condition Class 1, should also be included in monitoring strategies for nonfederal lands. Therefore, monitoring tools should include the 2004 *FRCC Handbook* methodology.
- ◆ HFRA also requires tracking of the amount of land burned and the degree of severity of “large wildfires” (§ 102.g.7). The effectiveness monitoring of the CWPP should include tracking the acreage burned and the wildfire severity for nonfederal lands for consistence in monitoring data. In addition, monitoring should be performed for fires controlled through initial attack and the number of structures lost to wildland fire. These data will allow an evaluation of effectiveness of preparedness and structural ignitability programs in the WUI.
- ◆ HFRA also requires the monitoring of federal lands for “maintenance of treated areas” (§ 102.g.8). Section IV of the CWPP should outline the use of prescribed fire for maintenance of treated acres. As action recommendations are accomplished through authorized projects, the annual report should include monitoring of broadcast burns and any other maintenance projects that complement the requirements of HFRA for nonfederal land projects and conform with recommended treatments in the CWPP.

**Things To Remember**

**Each stated goal of the CWPP was assigned performance measures necessary to track progress and effectiveness of authorized projects and community programs in terms of meeting stated objectives of the CWPP. Table 6.1 is an example of the CWPP performance measures to be monitored to track progress, not only in wildland fuel reduction treatments, but also in community outreach programs, land ordinance and code development, structural ignitability programs, and economic development.**

**The data needed for these specific performance measures could be gathered through the multiparty monitoring program established by the FS or BLM or by the Zone Administrator as a complement to federal land monitoring information. Ideally these data would be gathered through the multiparty monitoring process regardless of land ownership, so the same methods, collection times, and data analysis would be performed on federal and adjacent nonfederal lands simultaneously.**

**Table 6.1** Performance measures to assess ACWPP progress

Goal	Performance measure
Improve fire prevention and suppression	<p>Reduced wildland fire occurrence and acres burned (unplanned) within the WUI:</p> <ul style="list-style-type: none"> <li>• ACWPP communities have developed an Urban-Wildland Interface Code consistent in terms of land treatments and structural codes</li> <li>• Effectiveness monitoring of fire prevention and suppression will include:               <ul style="list-style-type: none"> <li>- acres burned, degree of severity of wildland fire</li> <li>- percentage of wildland fire controlled on initial attack</li> <li>- number of homes and structures lost to wildland fire</li> </ul> </li> </ul>
Reduce hazardous forest fuels	<p>High-risk areas effectively treated, by acre:</p> <ul style="list-style-type: none"> <li>• Number of treated acres of nonfederal WUI lands that are in Condition Class 2 or 3, are identified as high-priority by the ACWPP communities, and are moved to Condition Class 1</li> <li>• Number of treated acres of federal WUI lands that are within Condition Class 2 or 3, are identified as high priority by the ACWPP communities, and are moved to Condition Class 1</li> <li>• Total acres treated through any fuel reduction measures, including prescribed fire, that are conducted in the WUI. The change of Condition Class should be determined for the small project and/or treatment area through use of the <i>"Fire Regime Condition Class Guidebook Fire Regime Condition Class Version 1.0.5."</i> (2004)</li> </ul>
Restore forest health	<p>Acres of fuel reduction treatments that meet restoration treatment guidelines for federal lands.</p>
Promote community involvement	<p>Community outreach programs initiated:</p> <ul style="list-style-type: none"> <li>• Percentage of at-risk communities that have initiated a public outreach program and promoted volunteer efforts to reduce hazardous fuels</li> <li>• Number of communities supportive of public involvement process necessary to effect a seamless tree policy among local governments</li> <li>• Number of communities that have developed and implemented evacuation plans for identified high-risk areas</li> <li>• Curriculum enrollment in NPC courses</li> </ul>
Reduce structural ignitability	<p>IGA signatories have developed a consistent Urban-Wildland Interface Code and/or ordinances that effectively address ignitability issues.</p>
Encourage economic development	<p>Wood products industry growth and diversification to utilize all sizes of material removed by fuel reduction treatments:</p> <ul style="list-style-type: none"> <li>• Number of jobs in forest restoration sector retained and number added</li> <li>• Number of value-added wood products developed by local industries</li> <li>• Number of wood products-related industries added to local economy</li> <li>• Number of new jobs created in wood products industries.</li> <li>• Number of new markets for local products created</li> <li>• Number of technical assistance programs initiated to promote commercial uses for all size classes and diameters of wood products materials</li> <li>• Growth in the number of trained and certified forest industry workers employed locally</li> <li>• Requirement of forest workers to achieve "best practices" certification through formalized education</li> </ul>

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## 6.4 Federal Monitoring Considerations

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- Objective** ◆ Consideration of significant interest in multiparty monitoring.
- Key Components** ◆ HFRA requires:
- A representative sample of the authorized projects to be monitored by the FS and BLM.
  - A report on the progress of meeting the goals and recommendations must be submitted “not later than 5 years after the date of enactment” and “each 5 years thereafter” (§ 102.g).
  - When “significant interest” is expressed to “establish a multiparty monitoring, evaluation, and accountability process to assess the positive or negative ecological and social effects of authorized hazardous fuel reduction projects and projects conducted pursuant to section 104” (§ 102.g.5).

**Case Study** *In both the Sitgreaves and Apache CWPPs, the communities expressed an interest in participating in multiparty monitoring of recommended treatments and fire prevention programs. As a result, the A-S NFs White Mountain Stewardship Project will be establishing a multiparty monitoring process that will meet the requirements of HFRA and could address monitoring of treatments on nonfederal lands, assessing the economic and social aspects of forest restoration and community wildfire protection, and providing the basis for annual reporting and recommendations for modifications to the CWPP.*

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## 6.5 Independent Monitoring Process

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- Objective** ◆ Determine any additional performance measures needed to assess progress toward all goals of the CWPP.
- Key Components** ◆ If the communities establish an independent monitoring process for tracking the CWPP, the following reference documents should be reviewed:
- “The Multiparty Monitoring Handbook Series” that is available on the CFRP Web site at <[www.fs.fed.us/r3/spf/cfrp/monitoring](http://www.fs.fed.us/r3/spf/cfrp/monitoring)>.
  - “Multiparty Monitoring and Assessment Guidelines for Community Based Forest Restoration in Southwestern Ponderosa Pine Forests,” USDA, Forest Service, Southwest Region, February 4, 2003.
  - “Guidelines for Developing and Evaluating Tree Ordinances, USDA Forest Service, National Urban and Community Forestry Advisory Council and the International Society of Arboriculture, available at <[www.isa-arbor.com/tree-ord/](http://www.isa-arbor.com/tree-ord/)>.
  - “Protecting Communities and the Environment: Fuels Management Workshop, February 5, 2004, Albuquerque, located at <[www.nifc.gov/fuels\\_mgnt/workshop.html](http://www.nifc.gov/fuels_mgnt/workshop.html)>.

- “Memorandum to the Wildland Leadership Council from Paul Orbuch, Western Governors’ Association,” May 13, 2004, is recommended to provide insight into the state perception of effective multiparty monitoring.

**Things To Remember**    **The CAGs believed that monitoring was just as significant an action of the CWPP as authorized fuel reduction and other action recommendations. It is, in fact, coupled to—integral with—these activities. The results of implementing the mitigation measures in the CWPP and reporting on the success or needed modifications by objective data gathering and reporting will enhance public confidence. This will subsequently produce stronger public support and ultimately a community committed and motivated to achieve CWPP goals and objectives.**

## VII. Declaration of Agreement and Concurrence

<b>Purpose</b>	<ul style="list-style-type: none"> <li>◆ Provide a place for all the appropriate entities involved in the development of the CWPP to declare their written support and agreement (Step 8 of the <i>Foresters' Handbook</i>) with the CWPP.</li> <li>◆ Continue outreach and community awareness by showing citizens that a collaborative process addressing wildland fire and forest and rangeland health has been developed.</li> </ul>
<b>Section Content</b>	<ul style="list-style-type: none"> <li>◆ Ensure local agreement prior to state-, tribal-, and federal-level concurrence is clearly displayed in the CWPP.</li> <li>◆ Provide outreach opportunities through various local, city, and town governmental public processes.</li> <li>◆ Additional considerations: <ul style="list-style-type: none"> <li>• If necessary, an “erratum page” should be developed and should be circulated back through the signatory process for agreement by all cooperators with any necessary changes. This mechanism allows any local government to address the requirement, “how amendments or changes to the CWPP required by a single local government as a result of their public process will be handled so the integrity of the overall plan would remain but specific needs of any one local government could be accommodated.”</li> <li>• Public review could be handled through each local government’s open meeting and public involvement process.</li> <li>• Public and specific review could be solicited through independent or targeted review processes or opportunities.</li> </ul> </li> </ul>
<b>Things To Remember</b>	<p><b>The significance of such an array of governments successfully going through the collaborative process sends a powerful message that the communities are ready and willing to fully engage in mitigating the potential for catastrophic wildland fire, community involvement, economic development, and restoration of forest health.</b></p>
<b>Case Study</b>	<p><i>Although the State Forester agreed to the CWPP early in the process, there was mutual agreement by the CAGs, the State Forester, the Tribe and the A-S NFs Forest Supervisor that state, tribal, and federal concurrence with the CWPP would be contingent on local governments and fire departments achieving agreement first. Therefore, the CAGs agreed to the following sequence for “sign-off” of the CWPP:</i></p> <ul style="list-style-type: none"> <li>◆ <i>County Government Boards of Supervisors</i></li> <li>◆ <i>Town and City Councils</i></li> <li>◆ <i>Fire Chiefs</i></li> <li>◆ <i>Tribe</i></li> <li>◆ <i>State Forester</i></li> <li>◆ <i>A-S NFs</i></li> </ul>

*The CAGs preferred to look to local government processes for review of the CWPP. The intent of the CAGs was for the CWPP to remain a locally conceived and concurred document. Compliance with HFRA, FS, and State Forester requirements was accomplished by direct coordination with those offices. The CAGS did widely circulate the CWPP and did ask for comments on how to improve the CWPP through future annual planning.*

## VIII. Hindsight Summary Report

- Executive Summary** ◆ Many reviewers of the ACWPP and SCWPP have asked why an executive summary was not included. The CAGs recognized that the CWPPs were lengthy and data intensive and, therefore, were concerned that some readers and reviewers would not read the entire document. However, after a lengthy discussion about the pros and cons of an executive summary, the CAGs concluded that it would not be effective to reduce the information found in the each CWPP to a few pertinent points. They believed it was more important that the document be reviewed in its entirety. Each CAG(s) will have to broach this issue when preparing its CWPP.
- Data Summary Report** ◆ Data describing land features, type, treatments, etc., are found in narrative and table form throughout both CWPPs. Many reviewers suggest, and in hindsight the CAGs agree, that an appendix or data summary section would allow for simpler data retrieval. For example, data describing the number of acres of each Condition Class, federal acres identified for future fuel reduction treatment, acres recommended for treatment types 1 through 3, etc., would all aid comprehension. The CAGs, therefore, recommend that future CWPPs consider including a data summary section.
- Develop A Smoke Management Plan** ◆ The ACWPP- and SCWPP-recommended mitigation treatments included pile and broadcast burning for reducing fuels and maintenance of Condition Classes 2 and 3 lands. The use of managed fire to meet objectives should include consideration of neighborhood and community smoke impacts. Reviewers of both CWPPs have pointed out the lack of a smoke management plan. The White Mountain communities have a “committee” composed of local, state, and federal agencies working toward a smoke management plan that crosses administrative boundaries, including local fire districts, the Fort Apache Indian Reservation, and the A-S NFs. When the final smoke plan is completed, the CAGs will add it as an appendix to the CWPPs. However, in lieu of the final smoke management plan, some CAGs’ members believe language addressing public awareness, agency coordination components, and disclosure of current burn standards, (timing, restrictions to fuel amounts, etc.) should have been included in the original CWPPs.
- Enhance the Wood Products-related Industry Section** ◆ Reviewers of the ACWPP and SCWPP have commented on a lack of detail regarding forest products industry enhancements. A review by an industry coalition later pointed out some areas in need of further discussion to include development of transportation needs, local market studies, etc. The CAGs encourage early review and involvement by local wood products-related small businesses or other business associations in the communities.

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- Include Community Emergency Plans** ◆ Some communities, through the emergency services departments, fire departments, county sheriff's, or police departments have developed emergency response plans. If these plans exist, they should be referenced in the CWPP or attached as an appendix. If these plans do not exist, the CAGs may want to consider including a discussion of the four main principles of emergency response planning: (1) prevention, (2) mitigation (3) response, and (4) recovery component plans. Reviewers have indicated that the SCWPP and ACWPP certainly cover the first three components of emergency planning, but suggested some rehabilitation planning, at least in terms of priority, be included.
- Develop A Fire Rehabilitation Plan** ◆ If a community does not have a post-fire rehabilitation plan, then the CWPP could be a means for requesting funds to begin the planning process. At a minimum, some statement of community recovery after a catastrophic wildfire event would be appropriate in the CWPP. For example drinking water, communication facilities, watershed, flooding, and other infrastructure could be addressed.
- ◆ Impacts could also be discussed. If a rehabilitation plan is in place, the community may wish to attach the plan to the CWPP or at least mention the need to draft a plan that addresses how the community will recover from a catastrophic wildfire.
- Description of Overall Analysis Area** ◆ The SCWPP and ACWPP do not adequately disclose the overall analysis area that led to the WUI area determination. To define the WUI, both CWPPs started with the forest and Fort Apache Indian Reservation then determined the communities at-risk, and then outlined the area needed for wildfire protection. The CAGs encourage communities to include discussions and descriptions of the overall analysis areas in their CWPPs.
- Glossary of Terms** ◆ Reviewers suggested a glossary of terms be included to ensure consistency in the use of those terms. In the development of both CWPPs, when questions arose or clarification of terminology was needed during the CAG meetings, the *Forest Plan* was the most commonly used definition source. There is a good existing glossary in the *The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide* (USDA Forest Service, DOI Bureau of Land Management, FS-799 2004), *Guiding Principles for Forest Ecosystem Restoration and Community Protection Arizona Forest Health Advisory Council September (2003)* and also at the following web site: <[www.frcc.gov/docs/FrccDefinitionsFinal.pdf](http://www.frcc.gov/docs/FrccDefinitionsFinal.pdf)>

## **Community Wildfire Protection Plan Outline**

The Healthy Forests Restoration Act (HFRA) represents the legislative component of the Healthy Forests Initiative, introduced by President Bush in January 2003. Congress passed the HFRA on November 21, 2003, and the President signed the bill into law on December 3.

Title I of HFRA authorizes the Secretaries of Agriculture and Interior to expedite the development and implementation of hazardous fuel reduction projects on federal land managed by the Forest Service (FS) or Bureau of Land Management (BLM) when certain conditions are met.

Priority areas for use of expedited authorities include the wildland-urban interface (WUI), municipal watersheds, areas impacted by wind throw or insect and disease epidemics, and critical wildlife habitat that would be negatively impacted by catastrophic wildfire.

The Act emphasizes the need for federal agencies to work collaboratively with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities themselves in a Community Wildfire Protection Plan (CWPP).

### **Benefits to Communities**

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In the context of HFRA, a CWPP offers a number of benefits to communities in the WUI. For example, if a community defines its WUI as part of a CWPP, that definition is the one that is to be used for selecting eligible projects under HFRA.

In the absence of a CWPP, HFRA limits the definition of WUI to within ½ mile of a community boundary or within 1½ miles of the boundary when mitigating circumstances exist such as steep slopes or the presence of an evacuation route.

In addition, HFRA directs federal agencies to consider recommendations provided in community plans and to give priority to fuel reduction projects that serve to implement those plans.

If a federal agency proposes a fuel treatment project in an area addressed by a community plan but identifies a different treatment method, the agency must also evaluate the community's recommendation as part of the project's environmental assessment process.

### **How to use this Outline**

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This outline is intended as a guide to help communities develop a wildfire protection plan, that addresses the core elements of community protection. It addresses the items required under HFRA as well as some additional issues often incorporated into wildfire protection planning.

While potentially daunting, community fire protection planning does not have to be a complex process. A community can use this outline to develop a fire plan that is as extensive or as basic as is appropriate and desired by the community.

This outline offers basic examples of the type of information that is needed to develop a successful CWPP. The "Topic" column lists the issues to be addressed. The "Description" column explains what information should be included. The "Information Location" column gives direction to where the information that will get you started can be found.

The most important element of a CWPP is the meaningful discussion it promotes among community members regarding priorities for local fire protection and land management. This outline should help to facilitate these community discussions.

Topic	Description	Information Location
<p><b>I. Introduction</b></p>	<p>HFRA provides communities with a tremendous opportunity to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds are distributed for projects on nonfederal lands.</p>	<p><i>Healthy Forests Restoration Act of 2003</i> (P.L. 108-148)  <i>The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide</i>  <i>Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities</i></p>
<p>Building your Team and your Plan</p>	<p>Convene a core group of representatives from appropriate local, state, and federal agencies, local fire departments, and interested organizations/stakeholders. Describe how local interested parties were included, including stakeholder groups.</p>	<p>Contact local fire chiefs, local government officials, federal agency representatives, homeowner associations, interested organizations, wood products-related industry, and established natural resource working groups or organizations.  <a href="http://www.firesafecouncil.org">www.firesafecouncil.org</a>  <i>California Fire Plan Workgroup Abridged Community Fire Plan Template Outline</i>                      Local planning documents</p>
<p>Background</p>	<p>Begin to gather background and supporting documentation. Establish goals for the CWPP. Review existing planning documents from local, state, and federal agencies.</p>	<p><i>A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy</i>  <i>1995 Federal Wildland Fire Management Policy</i>  <a href="http://www.fireplan.org">www.fireplan.org</a> National Fire Plan  <a href="http://firewise.org">http://firewise.org</a> National Firewise™ Program  <a href="http://www.fed.us/r3/asnf">www.fed.us/r3/asnf</a> Apache-Sitgreaves National Forests  <a href="http://www.emnrd.state.nm.us/forestry/nmfire-plan/main.cfm">www.emnrd.state.nm.us/forestry/nmfire-plan/main.cfm</a> New Mexico Fire Plan  <a href="http://www.azstatefire.org">www.azstatefire.org</a> AZ Fire Management Division, State Forester  <a href="http://www.wflccenter.org">www.wflccenter.org</a> Western Forestry Leadership Coalition  <a href="http://www.fifc.gov">www.fifc.gov</a> National Interagency Fire Center  <a href="http://www.governor.state.az.us/fhc">www.governor.state.az.us/fhc</a> AZ Governor's Forest Health Council</p>

<p>Wildland Urban Interface</p>	<p>Determine community "at-risk."</p>	<p><i>Federal Register</i>, vol. 66, No. 3, p. 753 (2001)  <i>Arizona Wildland Urban Interface Assessment</i> (2004)  <a href="http://www.azstatefire.org">www.azstatefire.org</a>  <a href="http://www.fs.fed.us/r3/wui/index.html">www.fs.fed.us/r3/wui/index.html</a>  <a href="http://www.emnrd.state.nm.us/forestry/nmfireplan/docs/NMCOMMRISKASSESSPLAN.pdf">www.emnrd.state.nm.us/forestry/nmfireplan/docs/NMCOMMRISKASSESSPLAN.pdf</a></p>
<p>Fire Regime and Condition Class</p>	<p>Evaluate current fire regime(s) and Condition Class(es).</p>	<p><i>Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management Fire Regime and Condition Class (FCC) Field Procedures-Standard &amp; Scorecard Methods</i> (USDA Forest Service 2003)  <a href="http://www.frcc.gov">www.frcc.gov</a> <i>Fire Regime Condition Class Guidebook</i> (2004)  <a href="http://www.fs.fed.us/fire/fuelman">www.fs.fed.us/fire/fuelman</a></p>
<p>Future Desired Conditions and Relevant Fire Policies</p>	<p>Establish future desired conditions and collect relevant local, state, and federal fire policies.</p>	<p>From the collective knowledge and anecdotal information from the Community Action Group:  <i>Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management Fire Regime and Condition Class (FCC) Field Procedures-Standard &amp; Scorecard Methods</i> (2003)                  Desired Future conditions from previous FS fuels treatment EAs</p>
<p>Grants and Current Projects</p>	<p>Document current efforts of fire departments and local governments in addressing fuel hazard risks.</p>	<p>From the collective knowledge and anecdotal information from the Community Action Group:                  Fire Management Division of the Arizona State Land Department                  Forest Service Ranger Districts</p>
<p>Need for the CWPP</p>	<p>Determine the need for a CWPP. Discuss need to protect community from wildland fire, improve response due to current situation in terms of wildfire risk and need to mitigate risk.</p>	<p>From the collective knowledge and anecdotal information from the Community Action Group:                  Knowledge of Fire Chiefs  <i>Fire Regime and Condition Class (FCC) Field Procedures-Standard &amp; Scorecard Methods</i> (2003)  <i>Federal Register</i>, vol. 66, No. 3, p. 753 (2001)                  Local planning documents</p>
<p>Goals</p>	<p>Summary of overall goals of the CWPP.</p>	<p>From the collective knowledge and anecdotal information from the Community Action Group:  <i>A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan</i> (2002).                  Local planning documents</p>

<p>Planning Process</p>	<p>Overview of the process used to develop the CWPP and documents reviewed. Describe collaborators and include process map if developed by CAG(s).</p>	<p>Healthy Forests Restoration Act of 2003 (P.L. 108-148)  <i>The Healthy Forests Initiative and Healthy Forests Restoration Act Interim Field Guide</i>  <i>Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities</i>                      Any local planning documents or processes</p>
<p><b>II. WUI and Community Description</b></p>	<p>This section reviews what the communities determined as "at-risk" and how that determination was made.</p>	<p>The WUI can be described from information available from participating government or agency representatives. The WUI subareas will need to be defined by the collaborative working group. The community description will most likely come from a variety of existing local sources.</p>
<p>WUI Delineation Process</p>	<p>Have the core group define the WUI for all of the identified at-risk communities.</p>	<p>Federal Register, vol. 66, No. 3, p. 753 (2001)                      &lt;<a href="http://www.fs.fed.us/r3/wui/index.html">www.fs.fed.us/r3/wui/index.html</a>&gt;                      &lt;<a href="http://www.azstatefire.org">www.azstatefire.org</a>&gt; <i>Arizona Wildland Urban Interface Assessment</i> (2004)                      &lt;<a href="http://www.emnrd.state.nm.us/forestry/nmfireplan/docs/NMCOMMRISKASSESSPLAN.pdf">www.emnrd.state.nm.us/forestry/nmfireplan/docs/NMCOMMRISKASSESSPLAN.pdf</a>&gt;</p>
<p>Community Description</p>	<p>Provide a general description of the communities to include land ownership, jurisdiction, development trends, population, infrastructure (roads, utilities, schools, hospitals, and community facilities), major reservoirs, and emergency services.</p>	<p>&lt;<a href="http://factfinder.census.gov/home/saff/main.html">http://factfinder.census.gov/home/saff/main.html</a>&gt;                      &lt;<a href="http://www.commerce.state.az.us/communities/community_profile-index.asp">www.commerce.state.az.us/communities/community_profile-index.asp</a>&gt;                      &lt;<a href="http://www.fs.fed.us/r3/wui">www.fs.fed.us/r3/wui</a>&gt; <i>2001 Programmatic Biological Assessment WUI: Biological and Conference Opinion</i>                      &lt;<a href="http://www.training.fema.gov">www.training.fema.gov</a>&gt;                      &lt;<a href="http://www.fire-ecology.org">www.fire-ecology.org</a>&gt;                      &lt;<a href="http://www.emnrd.state.nm.us/forestry/nmfireplan/docs/website_wui_haz.pdf">www.emnrd.state.nm.us/forestry/nmfireplan/docs/website_wui_haz.pdf</a>&gt;</p>
<p><b>III. Community Assessment</b></p>	<p>The community assessment is an analysis of the risk of catastrophic wildfire to CWPP communities.</p>	<p>Contact the appropriate federal, state, and local fire agencies in your area to obtain some of the information needed to develop maps. This may require an analyst experienced with GIS software.</p>
<p>Fire Regime and Condition Class</p>	<p>In compliance with the HFRA, federal and nonfederal lands in the WUI were evaluated for fire regime(s) and current Condition Class(es).</p>	<p><i>Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management Fire Regime and Condition Class (FCC) Field Procedures-Standard &amp; Scorecard Methods</i> (2003)</p>

<p>Fuels Hazards</p>	<p>The term "fuel hazards" is defined as the arrangement of fuel, relative flammability, and fire potential of vegetation in the WUI. Evaluate the existing fuel hazards to include the composition, type, and arrangement.</p>	<p>&lt;<a href="http://www.geographynetwork.com/maps/index.html">www.geographynetwork.com/maps/index.html</a>&gt;          &lt;<a href="http://www.topozone.com">www.topozone.com</a>&gt;          &lt;<a href="http://plasma.nationalgeographic.com/mpmachine">http://plasma.nationalgeographic.com/mpmachine</a>&gt;          &lt;<a href="http://mapserver.maptech.com/homepage/index.cfm">http://mapserver.maptech.com/homepage/index.cfm</a>&gt;          &lt;<a href="http://www.emnrd.state.nm.us/forestry/nmfire-plan/docs/wham.pdf">www.emnrd.state.nm.us/forestry/nmfire-plan/docs/wham.pdf</a>&gt; <i>Wildland/Urban Interface Fire Hazard Methodology</i></p>
<p>Risk of ignition and Wildfire Occurrence</p>	<p>Determine the risk of ignition and past wildfire occurrence.</p>	<p>FS District and Supervisor's office          Fire departments and fire districts          &lt;<a href="http://www.nifc.gov/stats/index.html">www.nifc.gov/stats/index.html</a>&gt;          &lt;<a href="http://www.fs.fed.us/r3/fire/swainfo/swainfo.html">www.fs.fed.us/r3/fire/swainfo/swainfo.html</a>&gt;</p>
<p>Community Values at Risk</p>	<p>Identify community values at risk (watersheds, recreation areas, wildlife habitat, etc.).</p>	<p>&lt;<a href="http://www.azgfd.com">www.azgfd.com</a>&gt; Arizona Game and Fish Department Threatened, Endangered and sensitive species distribution and occurrence          Forest inventory and special status species listings          FS, county and town parks, trails, campgrounds, and recreations area          County planning and zoning          &lt;<a href="http://www.recreation.gov">www.recreation.gov</a>&gt;</p>
<p>Cumulative Risk Analysis and Summary of Community Assessment</p>	<p>Evaluate each community's preparedness level and opportunities. Identify any gaps in emergency services. Describe community ISO rating.</p>	<p>&lt;<a href="http://www.iso.com">www.iso.com</a>&gt; <i>ISO's Fire Prevention Rating System</i>          local county and municipal government planning departments, fire departments and interest group reviews of combined "risk" criteria</p>
<p><b>IV. Community Mitigation Plan</b></p>	<p>This section of the CWPP takes all information collected to this point and requires communities to start developing their mitigation plans.</p>	<p>Most of the information will be from the Community Action Group. Previous sections have detailed the communities, risk to the communities, and goals to reduce risk and enhance response gathered during the planning and analysis processes.</p>

<p>Administrative Oversight</p>	<p>Determine by whom and how administrative oversight of the CWPP will be administered.</p>	<p><i>Four Corners. Lessons Learned. Specific Action 1 page 38.</i> Project Coordinators and community action groups</p>
<p>Fuels Reduction Priorities</p>	<p>In Section III, the WUI was identified, analyzed, and categorized according to potential risk from wildfire. In Section IV, the risk areas are further identified and categorized into manageable, site-specific areas in the WUI, with an overall risk value determined for each.</p>	<p><i>Guidance for Environmental Assessments of Forest Health Projects</i> <i>Guidelines for Developing and Evaluating Tree Ordinances</i> House Bill 2549 Most of the information will be from the Community Action Group depending on area size, risk, and treatments recommended.</p>
<p>Recommendations for Land Treatments</p>	<p>Recommend treatments to meet fuel reduction or modification objectives.</p>	<p><i>ERI Forest Restoration for Homeowners</i> &lt;<a href="http://www.firelab.org">www.firelab.org</a>&gt; &lt;<a href="http://www.firewise.org">www.firewise.org</a>&gt; <i>Landscape-scale habitat relationships to tassel-eared squirrel population dynamics in north-central Arizona.</i> (2003) Arizona Game and Fish Department Technical Guidance Bulletin No. 6, Phoenix Arizona. 28pp. Alternative Approach for Streamlining Section 7 Consultation on Hazardous Fuels Treatment Projects &lt;<a href="http://www.fs.fed.us/r3/wui/index.html">www.fs.fed.us/r3/wui/index.html</a>&gt; 2001 <i>Programmatic Biological Assessment WUI: Biological and Conference Opinion</i> &lt;<a href="http://www.ecosmart.gov">www.ecosmart.gov</a>&gt; a software program that evaluates tradeoffs among alternatives landscape modifications on residential properties <i>Forest Land Management Plan standards and guidelines</i> Previous fuel reduction treatments on federal lands Community ordinances and codes Fire department "fire-safe" recommendations to homeowners &lt;<a href="http://www.landfire.gov">www.landfire.gov</a>&gt; &lt;<a href="http://tnc-ecomangement.org/fire">http://tnc-ecomangement.org/fire</a>&gt;</p>

<p>Prevention and Loss Mitigation</p>	<p>Improve protection capability and reduce structural ignitability. Promote community involvement and public education outreach. Enhance local wood products-related industries.</p>	<p><i>International Urban-Wildland Interface</i> (2003)                  Safety Zones delineated by local fire departments during evacuations                  Community building codes and ordinances.                  Planning and zoning codes and ordinances for developments either county or local municipality                  &lt;<a href="http://www.fema.gov/pdf">www.fema.gov/pdf</a>&gt;</p>
<p><b>V. CWPP Priorities: Action Recommendations and Implementation</b></p>	<p>Prioritize all recommendations from section IV then transfer the recommendations as implementation actions or action recommendations into Section V, with cost estimates and timelines.</p>	<p>This comes from agreement by the collaborative working group, based on the information gathered during the planning process. These are the hard decisions regarding which projects should occur when, where they should occur, and at what cost. Priorities can be based on several factors, including ecological, public safety, community economics, or a combination of these, by developing a consensus-driven process for delineating priorities.</p>
<p>Administrative Oversight</p>	<p>The most efficient way of implementing the CWPP action recommendations is through a formal agreement to delegate accountability to a single entity. Establishing a unified effort to collaboratively implement the CWPP embraces adaptive management principles that enhance decision making at all levels of government.</p>	<p>Gathered from the meeting minutes and discussions from Section IV. In this section cost estimates for salary, travel and support supplies in order to meet responsibilities must be developed.</p>
<p>Reduction of Hazardous Fuels</p>	<p>Collectively, CWPP communities need to rank, the high-risk management areas and action recommendations from each community.</p>	<p>Gathered from the meeting minutes and carried over from Section IV. In this section per-acre costs estimated by land ownership and other factors must be included for fuel mitigations projects. Which projects are ready for implementation: from project decisions on federal land to landowner participation                  Outline "most ready" and "most needed" projects</p>

<p>Identifying Protection Capabilities and Reducing Structural Ignitability</p>	<p>Protection capabilities and reduced structural ignitability recommendations should be moved from Section IV to Section V in priority ranking.</p>	<p>&lt;<a href="http://www.nationalfirefighter.com">www.nationalfirefighter.com</a>&gt;                  Fire chiefs                  Community planning and zoning and building codes and ordinances</p>
<p>Promoting Community Involvement</p>	<p>Set priorities for promoting community involvement.</p>	<p>Check local, state, and federal fire agencies, planning departments, and schools to see what programs are already being offered. From Community Action Group: which outreach programs are most effective and could be expanded or enhanced?</p>
<p>Enhancing Local Wood Products-Related Industries</p>	<p>The CWPP communities need to continue to support and promote private contractors who perform fire-safe mitigation work (e.g., fuel hazards reduction). Set priorities for enhancing local wood products-related industries.</p>	<p>CAG discussions: trained and available work force as a significant asset to wood products industry.                  Describe fuel mitigation priorities that provide material suitable for local industries from local wood product producers and small businesses within the community                  Describe how forest products removed in fuel mitigation projects can be used to the maximum extent to reduce costs of treatments and support the local economy(-ies)</p>
<p>Funding Request</p>	<p>An overall first-year fiscal budget should be developed that depicts needed funding for administrative oversight, hazardous fuel reduction treatments, structural fire protection and reduced ignitability, public education and outreach, and enhancement of local forest products-related industry(-ies). These monies will come from HFRA funds that have been appropriated to the FS and to the State Forester for CWPP implementation.</p>	<p>&lt;<a href="http://www.southwestareagrants.org">www.southwestareagrants.org</a>&gt;                  &lt;<a href="http://www.stateforesters.org">www.stateforesters.org</a>&gt;                  &lt;<a href="http://www.fireplan.org">www.fireplan.org</a>&gt;                  &lt;<a href="http://www.fs.fed.us/">www.fs.fed.us/</a>&gt;                  &lt;<a href="http://www.training.fema.gov">www.training.fema.gov</a>&gt;</p>

<b>VI. Monitoring Plan</b>	Monitoring is essential in determining progress in meeting goals of the CWPP, both for local governments as well as the federal agencies.	HFRA requires a representative sample of the authorized projects to be monitored and a report on the progress of meeting the goals of HFRA. Must be submitted every 5 years.
Administrative Oversight, Monitoring and CWPP Reporting	Establish a monitoring plan to ensure that the goals and objectives of the CWPP are met. Establish performance measures that will be used to assess the CWPP on a yearly basis. The concept of "plan-do-monitor-evaluate and plan-do-etc" cycle is what should be implemented.	<i>USDA Forest Service Multiparty Monitoring and Assessment Guidelines</i> <i>The Multiparty Monitoring Handbook Series</i>
Effectiveness Monitoring	After the first year, the plan is monitored with specific performance measures, modified through adaptive management principles, and planned for through the next set of action recommendations.	<i>Wildland Fire: Protecting Communities and the Environment</i> (GAO report 04-705) < <a href="http://fpa.nifc.gov">http://fpa.nifc.gov</a> > Fire Program analysis system < <a href="http://www.frcc.gov">www.frcc.gov</a> > Fire Regime Condition Class < <a href="http://www.doi.gov/oepec/esms">www.doi.gov/oepec/esms</a> > Office of Environmental Policy and Compliance
<b>VII. Declaration of Agreement</b>	Gather the signatures of the appropriate members of the local, state, and federal agencies and local fire department chiefs. Relay the results of the collaborative process to the community and key partners The process used to agree to the CWPP has press opportunities (e.g., press releases) that could be used to further inform the public.	Need to coordinate with local, state, and federal processes and fire department chiefs to obtain the appropriate signatures
Additional References	Reference additional material that should be reviewed.	< <a href="http://www.azgfd.com">www.azgfd.com</a> > Arizona Game and Fish Department < <a href="http://www.dem.state.az.us">www.dem.state.az.us</a> > AZ Division of Emergency Services < <a href="http://www.gao.gov/docdb/lite/form.php">www.gao.gov/docdb/lite/form.php</a> > GAO Reports < <a href="http://www.azleg.state.as.us">www.azleg.state.as.us</a> > AZ State Government and Legislative information < <a href="http://www.access.gpo.gov/nara/cfr/cfr-table-search.html">www.access.gpo.gov/nara/cfr/cfr-table-search.html</a> > Available CFR titles < <a href="http://thomas.loc.gov">http://thomas.loc.gov</a> > National Legislative information < <a href="http://www.werc.usgs.gov/fire">www.werc.usgs.gov/fire</a> > Western Ecological Research Center, Fire Ecology Research < <a href="http://www.adeq.state.as.us">www.adeq.state.as.us</a> > Arizona Department of Environmental Quality < <a href="http://www.epa.gov">www.epa.gov</a> > Environmental Protection Agency < <a href="http://www.nps.gov">www.nps.gov</a> > National Park Service < <a href="http://www.fs.fed.us/recreation/map/finder.shtml">www.fs.fed.us/recreation/map/finder.shtml</a> > < <a href="http://www.fema.gov">www.fema.gov</a> >



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