

PIMA COUNTY

COMMUNITY WILDFIRE PROTECTION PLAN

September 2013



Pima County Board of Supervisors
City of Oro Valley
City of Sahuarita
Town of Marana
City of South Tucson
City of Tucson
Altar Valley Conservation Alliance
Southern Arizona Buffelgrass
Coordination Center
Salt River Project
Tucson Electric Power
TRICO Electric Cooperative
Ajo-Gibson Volunteer Fire Department
Arivaca Fire District
Avra Valley Fire District
Cascabel Volunteer Fire Department
Corona de Tucson Fire Department
Drexel Heights Fire District
Elephant Head Volunteer Fire
Department
Golder Ranch Fire District
Green Valley Fire District
Helmet Peak Volunteer Fire Department
Mescal-J6 Fire District
Mount Lemmon Fire District
Northwest Fire District
Pascua Yaqui Tribe Fire Department
Picture Rocks Fire District
Rincon Valley Fire District
Rural Metro Fire Department
Sonoita-Elgin Fire Department
South Tucson Fire Department
Three Points Fire District
Tucson Fire Department
Why Fire Department
Arizona State Forestry Division
Bureau of Land Management
Pascua Yaqui Tribe
Coronado National Forest
Saguaro National Park
Buenos Aires National Wildlife Refuge

Pima County Community Wildfire Protection Plan

September 2013

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The citizens of Pima County dedicate this Pima County Community Wildfire Protection Plan to the 19 members of the Prescott Fire Department's interagency Granite Mountain Hotshots who died protecting the community of Yarnell from the Yarnell Hill Fire on June 30, 2013, and to all the firefighters who have perished before them responding to fires in the wildland-urban interface. May this plan help reduce the number of fires, lessen fire behavior, and protect lives and property so that such tragedies will never occur in our county.

Andrew Ashcraft ★ Anthony Rose ★ Christopher MacKenzie ★ Clayton Whitted ★ Dustin Deford ★ Garret Zuppiger ★ Grant McKee ★ Jesse Steed ★ Joe Thurston ★ John Percin

In Memory Of The 19 Firefighters of The Granite Mountain Hotshots Who Perished For Their Community



Last Alarm
6.30.13



Kevin Woyjeck ★ Eric Marsh ★ Robert Caldwell ★ Scott Norris ★ Sean Misner ★ Travis Carter ★ Travis Turbyfill ★ Wade Parker ★ William Warnecke

(Graphic courtesy of Palo Verde Signs, Tucson, Arizona)

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ACRONYMS AND ABBREVIATIONS

ASLD	Arizona State Land Department
ASFD	Arizona State Forestry Division
BAER	burned area emergency response
BANWR	Buenos Aires National Wildlife Refuge (US Fish and Wildlife Service)
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BSA	Boy Scouts of America
CWPP	community wildfire protection plan
CNF	Coronado National Forest
drc	diameter at root collar
EMS	emergency medical service
FMU	fire management unit
FRCC	fire regime condition class
FS	Forest Service
GIS	geographic information system
GPS	Global Positioning System
GSA	Girl Scouts of America
HFRA	Healthy Forests Restoration Act of 2003
IGA	intergovernmental agreement
IMS	Internet Mapping Service (Federal Wildland Fire Occurrence)
ISO	Insurance Services Office
NPS	National Park Service
NRCS	Natural Resources Conservation Service
PCOEM	Pima County Office of Emergency Management
MLFD	Mount Lemmon Fire District
MLWD	Mount Lemmon Water District
NFPA	National Fire Protection Association
NPS	National Park Service
RRM	Recreation Resource Management
Rx	prescribed fire
SABCC	Southern Arizona Buffelgrass Coordination Center
SR	state route
SRP	Salt River Project
SWReGAP	Southwest Regional Gap Analysis Project
TEP	Tucson Electric Power
UA	University of Arizona

USDA	US Department of Agriculture
USDI	US Department of the Interior
USFWS	US Fish and Wildlife Service
WFLC	Wildland Fire Leadership Council
WUI	wildland-urban interface

EXECUTIVE SUMMARY:

PIMA COUNTY COMMUNITY WILDFIRE PROTECTION PLAN

The Pima County Community Wildfire Protection Plan (CWPP) was developed in response to the Healthy Forests Restoration Act (HFRA) of 2003 for the at-risk communities and unincorporated areas in Pima County, Arizona, located in and around public lands administered by the US Department of the Interior Bureau of Land Management (USDI BLM) Gila District Office, Coronado National Forest (CNF), National Park Service (NPS) Saguaro National Park, US Department of the Interior Fish and Wildlife Service Buenos Aires National Wildlife Refuge (BANWR), the Tohono O'odham Nation, and the Pascua Yaqui Tribe. HFRA established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. Furthermore, this legislation gives direction to BLM and the US Forest Service to address local community priorities in fuel reduction treatments, even on nonfederal lands. For a community to take full advantage of the opportunities provided in HFRA, it must first prepare a CWPP. A CWPP developed in accordance with HFRA is the most effective way to acquire federal funding for fire preparedness and planning. Pima County, partner agencies, and participating communities wish to adopt a CWPP to better protect their communities from wildfire risk, to better prepare citizens, and to become eligible to apply for and receive federal and other grant monies to implement wildland fire mitigation projects and programs.

To ensure that all residents of Pima County were represented in this planning process, three core teams were formed to implement the agency and public collaboration necessary to develop a CWPP compliant with HFRA: the Northern Planning Zone Core Team consists of the communities of Mount Lemmon, Oro Valley; northwest Tucson, Lukeville; Ajo; Why; Pima County lands adjacent to the Catalina Mountains; Rincon Mountains; Marana; Avra Valley; and Picture Rocks to the Gates Pass area, including Saguaro National Park West and Tucson Mountain Park. The Southern Planning Zone Core Team consists of the developed lands adjacent to the Pascua Yaqui Tribe, Robles Junction, Green Valley, Sahuarita, Arivaca-Sasabe CWPP lands, South Tucson, Vail, Corona de Tucson, Saguaro National Park East, and Pima County lands to the Cochise County boundary. The Central Core Team is composed of the cities of Tucson and South Tucson.

Section I. Introduction

A primary objective of a CWPP is to help local governments, fire departments and districts, and residents identify at-risk public and private lands to better protect those lands from severe wildfire threat. Additional functions of a CWPP are to improve fire prevention and suppression activities, as well as to identify funding needs and opportunities to reduce the risk of wildland fire and enhance public and firefighter safety. Identifying at-risk areas and improving fire protection capabilities helps the communities to prioritize high-risk projects and to expedite overall project planning. Pima County's CWPP was created to meet these objectives at a local level while integrating with overall federal- and state-level fire planning.

The Core Teams identified needed agency and organization partners and interested parties to initiate the collaborative process and to establish the following overarching goals of the Pima County CWPP:

- Improve fire prevention and suppression, emphasizing firefighter and public safety
- Reduce hazardous fuels, emphasizing public and private property protection

- Restore forest, rangeland, and riparian health
- Promote community involvement and provide for community protection
- Recommend measures to reduce structural ignitability in the wildland-urban interface (WUI)
- Encourage economic development in the communities from vegetative treatments
- Promote development of wildfire emergency evacuation and communication plans
- Integrate use of the CWPP with surrounding community and agency fire management plans

The Core Teams developed and concurred with the process that was to be followed in developing the Pima County CWPP. This section establishes all necessary planning components and clearly articulates the intent of the Pima County CWPP, discloses the communities identified for analysis, and ensures that the Pima CWPP is compliant with HFRA.

Section II. Community Assessment

Section II covers the methods used in community wildfire risk assessments; the identification of the WUI; and the identification of communities with high, moderate, and low wildland fire risk within the WUI. The Pima County CWPP was developed through quantitative analyses of wildland fire risk across Pima County, designing mitigation measures and priority needs to implement mitigation measures, whether for wildland fire fuel manipulations, resource response, reduced structural ignitability or public education and outreach.

Environmental elements used by the Core Teams to identify the WUI include wildland vegetative fuel hazards, comparison of normal and extreme rainfall years, consideration of aspect and local topography, historical fire occurrence, and wildfire ignition history. These environmental factors were coupled with community-based characteristics and values, such as local fire resource preparedness, infrastructure, evacuation routes, and population/structure density. An external element, the Fire Insurance Service Organization ratings, was also used in determining wildland fire risk to communities within the WUI. These elements were all identified and combined using spatial analysis within a geographic information system (GIS). As a result of the GIS analysis, a WUI and sub-WUI boundary map and a wildfire risk rating map were created. Sub-WUIs were divided into treatment management areas, according to high, moderate, and low fuel hazard. Several components, including slope, aspect, fire behavior models for each vegetation type, and presence of nonnative/invasive plants, were used to make fuel hazard determinations. The Pima County CWPP analysis consisted of 5,877,578 acres of federal, state, and private lands, of which 1,579,699 acres were classified as the WUI. Cumulative risk levels across the Pima County CWPP community WUIs include 121,511 acres (8%) of high wildland fire risk, 926,760 acres (59%) of moderate risk, and 531,189 acres (34%) of low risk.

Section III. Community Mitigation Plan

Section III prioritizes the areas in need of wildland fuel mitigation and recommends the types and methods of treatment and management necessary to mitigate the potential for catastrophic wildland fire in the WUI. Also presented in this section are the Pima County CWPP communities' recommendations for enhanced wildland fire protection capabilities; public education, information, and outreach; and support for businesses and industries centered on local wood products, woody biomass, and wildland vegetative fuel management.

As part of the community mitigation plan, the Core Teams identified the Pima County CWPP administrators—Pima County fire chiefs, Pima County Office of Emergency Management (PCOEM), CNF, Arizona State Forestry Division (ASFD), Tohono O’odham Nation, Pascua Yaqui Tribe, and BLM—who will be mutually responsible for implementing and monitoring Pima County CWPP action recommendations in coordination with the future-established countywide community CWPP Working Group. Pima County CWPP administrators are responsible for ensuring implementation of the Pima County CWPP, for preparing reports and work plans, and for developing community bulletins and public service announcements that inform residents of wildfire dangers and preventive measures. Additional tasks include assisting federal and state agencies and private landowners to identify appropriate funding sources to implement action recommendations of the Pima County CWPP, as well as continued coordination with communities outside the analysis area. Pima County CWPP administrators are also responsible for the monitoring and reporting of implementation actions that will allow for enhanced coordination of management programs and that will reduce inconsistencies among local, state, and federal agencies.

To prioritize treatments, the Core Teams identified 95 wildland treatment management units within 23 sub-WUI designations of the WUI. These treatment units were analyzed and categorized according to potential risk for wildfire. The Core Teams ranked and described each unit, then provided a recommendation for each unit’s preferred treatment type and method. Preferred treatments were recommended for treatment management units identified as high risk. These treatments are designed to meet the fuel reduction and modification objectives of the Pima County CWPP.

Section IV. Pima County CWPP Priorities: Action Recommendations and Implementation

To achieve the goals outlined in the CWPP, the Core Teams identified priority action recommendations, which are presented in Section IV. The first action recommendation was to identify priority treatment areas for fuel reduction projects. Treatment areas were identified within community WUIs to create survivable space through treatments within the home ignition zone, the use of strategically placed fuelbreaks, and the modification of hazardous wildland fuels. The objective of a fuels reduction project is to create an acceptable vegetation condition class for community and infrastructure protection and public and firefighter safety. Priority treatment management areas were designated in areas identified as high risk. Table 4.1 in Section IV lists the priority action recommendations for the reduction of hazardous fuels within the Pima County CWPP area. The second action recommendation identified by the Core Teams was to reduce structural ignitability. Reduction of structural ignitability is achieved through evaluation; maintenance; and, at times, upgrades to community response facilities, capabilities, and equipment. The third action recommendation identified was to promote community involvement through education, information, and outreach.

Section V. Monitoring Plan

The monitoring plan, outlined in Section V, describes how monitoring the implementation of the Pima County CWPP will occur. The Pima County CWPP administrators are responsible for implementation and monitoring. Implementation begins by securing grants and other funding necessary to execute the action items.

The Pima County CWPP administrators will report successful grant awards and projects implemented as a result of those awards to the CWPP signatories. The administrators will also update work plans based on projects completed in the previous years.

Acknowledgments

The following communities and agencies were involved in the collaborative process in preparation of and are assisting as appropriate in the implementation of the Pima County CWPP:

- Pima County Office of Emergency Management
- Arizona State Forestry Division
- Municipal fire departments and local fire districts and fire chiefs from the following communities:

Ajo-Gibson Volunteer Fire Department	Tucson Fire Department	Helmet Peak Volunteer Fire Department
Arivaca Fire District	Green Valley Fire District	Sonoita-Elgin Fire Department
Avra Valley Fire District	Cascabel Volunteer Fire Department	Picture Rocks Fire District
Three Points Fire District	South Tucson Fire Department	Mescal-J6 Fire District
Golder Ranch Fire District	Elephant Head Volunteer Fire Department	Pascua Yaqui Tribe Fire Department
Rural Metro Fire Department	Why Fire Department	Drexel Heights Fire District
Corona de Tucson Fire Department	Arivaca Fire District	Northwest Fire District
Mount Lemmon Fire District	Rincon Valley Fire District	

- US Department of the Interior, Bureau of Land Management
- US Forest Service, Coronado National Forest
- National Park Service, Saguaro National Park
- US Fish and Wildlife Service, Buenos Aires National Wildlife Refuge
- Pascua Yaqui Tribe
- Southern Arizona Buffelgrass Coordination Center
- Altar Valley Conservation Alliance
- Salt River Project
- Tucson Electric Power
- Trico Electric Cooperative

I. INTRODUCTION

The Pima County Community Wildfire Protection Plan (CWPP) was developed in response to the Healthy Forests Restoration Act of 2003 (HFRA) for the at-risk cities and unincorporated areas in Pima County, Arizona (Figure 1.1), located around public lands administered by the following agencies: the US Department of the Interior, Bureau of Land Management (USDI BLM), Gila District Field Office; the Coronado National Forest (CNF); the National Park Service (NPS), Saguaro National Park (SNP); Organ Pipe Cactus National Monument (OPCNM); the US Fish and Wildlife Service (USFWS), Buenos Aires National Wildlife Refuge (BANWR); the Arizona State Land Department (ASLD); and the Pascua Yaqui Tribe. HFRA established unprecedented incentives for communities to develop comprehensive wildfire protection plans in a collaborative, inclusive process. Furthermore, this legislation gives direction to BLM and the US Forest Service (FS) to address local community priorities in fuel reduction treatments, even on nonfederal lands.

Congress passed HFRA in November 2003, and the President signed it into law that December. When certain conditions are met, Title I of HFRA authorizes the Secretaries of Agriculture and the Interior to expedite the development and implementation of hazardous fuel reduction projects on federal, tribal, state, and private lands. HFRA requires federal agencies to collaborate with communities in developing hazardous fuel reduction projects and places priority on treatment areas identified by communities through the creation of a CWPP. Priority areas include the wildland-urban interface (WUI), municipal watersheds, areas affected by windthrow or by insect or disease epidemics, and critical wildlife habitat that would be negatively affected by a catastrophic wildfire.

In compliance with Title I of HFRA, the CWPP requires agreement among local governments, local fire departments and districts, and the state agency responsible for forest management. For the Pima County CWPP, this agency is the Arizona State Forestry Division (ASFD). The CWPP must also be developed in consultation with interested parties and the applicable federal agency managing the public lands surrounding the at-risk communities. The majority of lands surrounding the at-risk communities and unincorporated intermixed community zones within Pima County are located adjacent to “public lands,” as defined in Sections 3.1.A and B of HFRA; Indian tribal lands, as defined in Section 3.2 of HFRA; and Arizona State Trust lands.

The Pima County CWPP has been developed to assist local governments, fire departments and districts, and residents to identify lands—including federal lands—at risk from severe wildfire threat and to identify strategies for reducing hazardous vegetative fuels within the WUI while improving watershed and rangeland health, restoring ecosystem processes, creating resilient ecosystems, keeping people engaged, supporting local industry and local economies, and improving public and firefighter safety and response capabilities through innovative and scientific approaches. The Pima County CWPP is based on the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a); the *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013), the *Coronado National Forest Plan* (US Department of Agriculture [USDA] CNF 1988, as amended); the *Coronado Fire Management Plan* (USDA FS 2010); the Arizona FireScape Project (<http://www.azfirescape.org/home>); the *Saguaro National Park Fire Management Plan* (USDI NPS 2007); the *Tohono O’odham Fire Management Plan* (Tohono O’odham Nation 2004); the *Wildland Fire*

Management Plan Pascua Yaqui Tribe (Bureau of Indian Affairs [BIA] Salt River Agency 2012a); and the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007). This CWPP has been developed in consultation with the BLM Gila District, the NPS Saguaro National Park, and CNF to help Pima County, local municipalities, and the State of Arizona implement the recommendations of the Pima County CWPP. Cooperating fire agencies include the Pascua Yaqui Tribe and the participating fire departments/districts of South Tucson, Tucson, Ajo, Arivaca, Avra Valley, Cascabel, Corona de Tucson, Drexel Heights, Elephant Head, Golder Ranch, Green Valley, Helmet Peak, Hidden Valley, Picture Rocks, Mountain Vista, Mount (Mt.) Lemmon, Northwest, Rincon Valley, Sonoita-Elgin, Rural Metro, Sabino Vista, Tanque Verde Valley, Tucson Country Club Estates, and Three Points. The Pima County CWPP also encourages these entities to identify strategies for reducing vegetative fuels within the WUI while improving health of native habitats and undeveloped lands within Pima County, making recommendations for reducing structural ignitability, developing wildfire public education and outreach programs, and improving public and firefighter safety and response capabilities. The Pima County CWPP is based on guidance from the *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee et al. 2004), the *Community Guide to Preparing and Implementing a Community Wildfire Protection Plan* (Communities Committee 2008), and the *Southwest Community Wildfire Protection Plan Guide* (Southwest Strategy 2004).

To ensure that all residents of Pima County were represented in this planning process, three core teams were formed to implement the agency and public collaboration necessary to develop a CWPP compliant with HFRA: the Northern Planning Zone Core Team consists of the communities of Mt. Lemmon; Oro Valley; northwest Tucson; Lukeville; Ajo; Why; Pima County lands adjacent to the Catalina Mountains; Rincon Mountains; Marana; Avra Valley; and Picture Rocks to the Gates Pass area, including Saguaro National Park West and Tucson Mountain Park. The Southern Planning Zone Core Team consists of the developed lands adjacent to the Pascua Yaqui Tribe, Robles Junction, Green Valley, Sahuarita, Arivaca-Sasabe CWPP lands, South Tucson, Vail, Corona de Tucson, Saguaro National Park East, and Pima County lands to the Cochise County boundary. The Central Core Team is composed of the city of Tucson. The Core Teams agreed to and established an efficient process to be followed throughout the Pima County CWPP development. The Core Teams analyzed 5,877,578 acres for potential risk from catastrophic wildland fire within Pima County (Figure 1.1). This analysis resulted in describing 1,579,699 acres of community WUI to be managed for the protection of 33 individual communities determined to be “at risk” from wildland fire (Table 1.1).

In addition, the Core Teams were formed to ensure that local, state, and federal management recommendations for wildland fire protection, watershed, and riparian health were addressed in the Pima County CWPP. The Core Teams represent all identified at-risk communities and developed areas within Pima County. As additional guidance documents become available, changes or amendments will be incorporated into the Pima County CWPP as necessary.

The following sections detail the background and process used to develop the Pima County CWPP and define the associated WUI. In addition, the desired future condition of lands covered by the Pima County CWPP is described; current fire policies and programs are identified; and current projects and future needs are discussed. Finally, the goals of the Pima County CWPP are presented along with an outline of planning methods to achieve those goals.

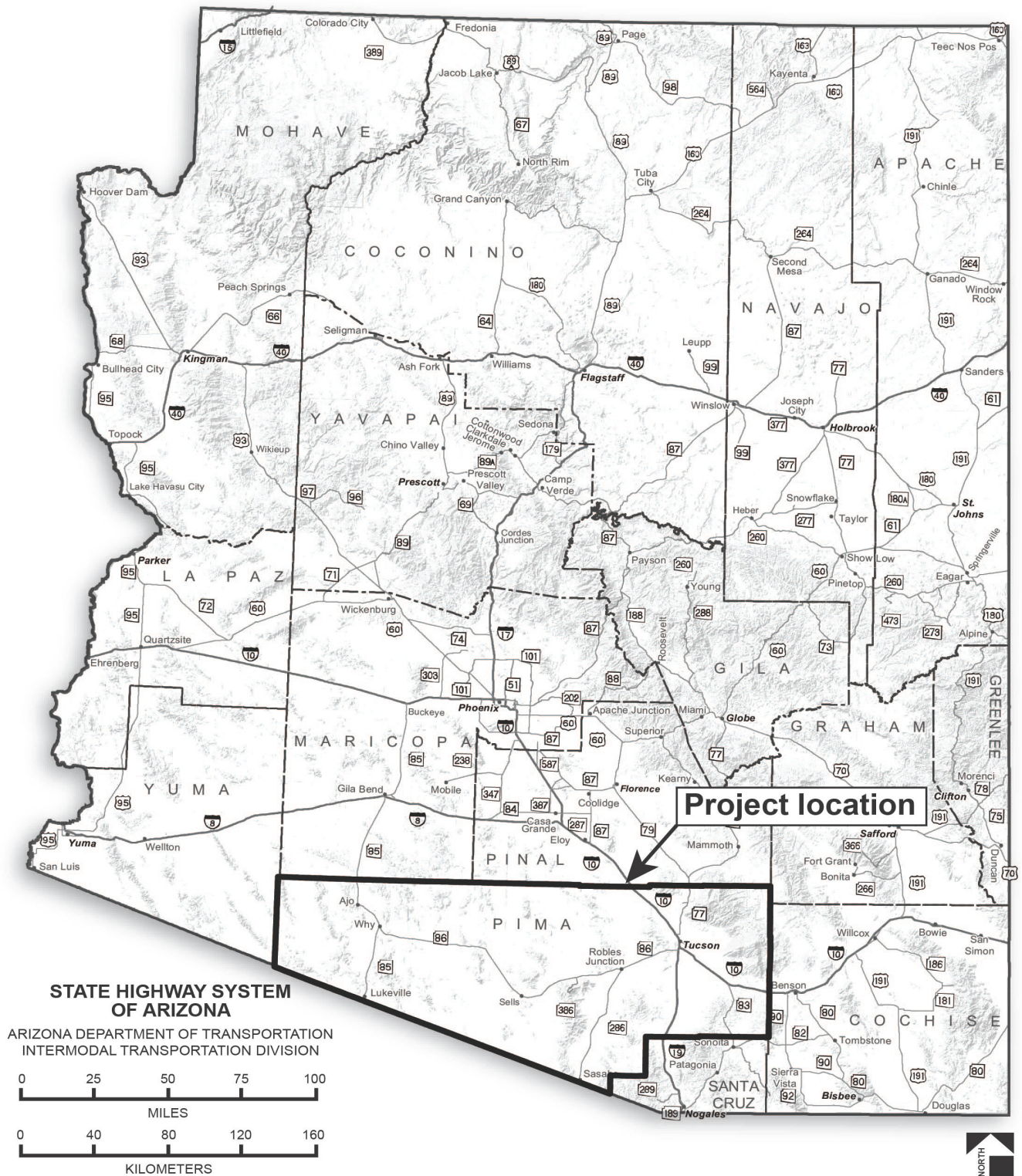


Figure 1.1 Pima County CWPP Analysis Area

Table 1.1. Pima County CWPP Recommended At-Risk Community WUIs and Communities

Community WUI and Risk^{a,b}	Communities in Each WUI	Fire Department/District	Community WUI and Risk^{a,b}	Communities in Each WUI	Fire Department/District
Ajo/M	Ajo	Ajo-Gibson Volunteer Fire Department	Cascabel/M	Redington	Cascabel Volunteer Fire Department
Arivaca/H	Arivaca	Arivaca Fire District	Tucson and South Tucson/L	Tucson South Tucson	Tucson Fire Department South Tucson Fire Department
Avra Valley/M	Avra Valley	Avra Valley Fire District	Lukeville/M	Lukeville and Port of Entry	Not applicable
Three Points/M	Robles Junction	Three Points Fire District	Picture Rocks/H	Picture Rocks	Picture Rocks Fire District
Golder Ranch/H	Catalina Saddle Brook 1 and 2 Florence Junction Mountain Vista Fire Department Oro Valley	Golder Ranch Fire District	Mescal-J6/H	Mescal-J6 Ranch and developments	Mescal-J6 Fire District
Catalina Foothills*/H	Tucson Country Club Estates Sabino Vista Hidden Valley Tanque Verde Valley	Rural Metro Fire Department	Pascua Yaqui/M	Pascua Yaqui Indian communities	Pascua Yaqui Tribe Fire Department
Corona de Tucson/M	Corona de Tucson	Corona de Tucson Fire Department	Rincon Valley/H	Vail	Rincon Valley Fire District
Mt. Lemmon/H	Summerhaven Loma-Sabino Pines Willow Canyon, Soldier's Camp, Mt. Lemmon Ski Valley, Fern Ridge, Soldier Camp, Bear Wallow, Willow Canyon, Organization Ridge	Mt. Lemmon Fire District	Sasabe/H	Sasabe and Port of Entry	Buenos Aires National Wildlife Refuge
Drexel Heights/M	Drexel Heights communities	Drexel Heights Fire District	Why/M	Why	Why Fire Department
Tohono O'odham/M	Tohono O'odham Indian communities, including Sells and Kitt Peak San Xavier	Tohono O'odham Nation Fire Department	Green Valley/M	Green Valley Sahuarita Helmet Peak	Green Valley Fire District Elephant Head Volunteer Fire Department Helmet Peak Volunteer Fire Department
Northwest WUI/M	Marana Flowing Wells Tucson Mountains Dove Mountain	Northwest Fire District	Sonoita-Elgin/H	Sonoita Elgin Canelo	Sonoita-Elgin Fire District

^a Summerhaven listed as high; Arivaca, Kitt Peak, and Catalina listed as moderate; and Sasabe listed as low on the 2009 *Arizona Communities at Risk Matrix* (www.azsf.az.gov).

^b Wildland fire risk: L = low, M = moderate, H = high.

* Through agreement with Rural Metro Fire Department.

A. Background

The process for developing this CWPP consisted of evaluating Pima County—including tribal trust lands—to identify communities, infrastructure, and remote private lands at risk from catastrophic wildland fire. During this analysis the County solicited federal, state, and local governments; fire chiefs; and interested individuals to participate in the Core Teams. The Core Teams were created to define and locate interface and intermix communities in which significant community values and infrastructure are at risk because of the potential of wildland fire.¹ The Pima County Office of Emergency Management (PCOEM) requested that local governments, fire departments and districts, BLM, NPS, CNF, ASFD, and interested individuals throughout Pima County participate in the Core Teams to develop the Pima County CWPP. Pima County is the local government authority for the unincorporated communities identified as at risk, while the city or town councils of the cities of Marana, Oro Valley, Sahuarita, South Tucson, and Tucson are the appropriate municipal government authorities for cooperating fire departments in developing and agreeing to the Pima County CWPP. Pima County and the Core Teams recognize the value of conveying information developed from the Pima County CWPP process to local citizens. This process established by the Core Teams ensures an open public process, with the goal of all community interests being represented during the development of the Pima County CWPP. The Core Teams, in association with planned public involvement, meets all collaborative guidance criteria established by the Wildland Fire Leadership Council (WFLC 2002).

The Core Teams and collaborators developed this CWPP to increase preparedness, to reduce hazardous wildland fuels, to reduce impacts from catastrophic wildfire, and to prepare recommendations for reducing structural ignitability. In addition, the Core Teams developed this CWPP to increase communication with local, county, state, and federal emergency response personnel by determining areas of high risk from unwanted wildland fire; by developing mitigation measures to reduce hazardous wildland fuels; by improving emergency response to unplanned wildfire; by preventing wildfire ignitions from state and public lands from spreading into the WUI and into the communities; and by preventing wildfire ignitions within the WUI from spreading to adjacent state and public lands.

During initial analyses for the proposed wildland fuel mitigation recommendations, as well as the development of the Pima County CWPP, the Core Teams reviewed the following documents:

- “Urban Wildland Interface Communities within the Vicinity of Federal Lands That Are at High Risk from Wildfire,” *Federal Register* Vol. 66, Nos. 3 and 160 (USDA and USDI 2001a, 2001b)
- *Field Guidance: Identifying and Prioritizing Communities at Risk* (National Association of State Foresters 2003)
- *Arizona Wildland Urban Interface Assessment* (Arizona State Forester 2004)
- *Arizona-Identified Communities at Risk* (Arizona State Forester 2009)
- *Statewide Strategy for Restoring Arizona’s Forests* (Governor’s Forest Health Councils 2007)
- *Forest Health Landscape-scale Restoration Recommendations*. (Western Governors’ Association Forest Health Advisory Committee 2010)

¹*Interface communities* exist where structures directly abut wildland fuels; *intermix communities* exist where structures are scattered throughout a wildland area (USDA and USDI 2001a).

- *Landscape Conservation and Restoration Strategic Action Plan* (USDA FS 2011)
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan* (USDA FS and USDI BLM 2002)
- *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a)
- *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013)
- *Coronado National Forest Plan* (USDA FS 1988, as amended)
- *Coronado National Forest Fire Management Plan* (USDA FS 2010)
- *Saguaro National Park Fire Management Plan* (USDI NPS 2007)
- *Organ Pipe Cactus National Monument Fire Management Plan* (USDI NPS 2004)
- *Tohono O'odham Nation Wildland Fire Management Plan* (Tohono O'odham Nation 2004)
- *Pascua Yaqui Tribe Wildland Fire Management Plan* (BIA Salt River Agency 2012a)
- *Pascua Yaqui Tribe Fuels Management Plan* (BIA Salt River Agency 2012b)
- Arizona FireScape Project (<http://www.azfirescape.org/home>)
- *Southern Arizona Buffelgrass Strategic Plan: A Regional Guide for Control, Mitigation and Restoration* (Rogstad 2008)
- *Mt Lemmon Wildland-Urban Interface Plan for Forest Health and Wildland Fire Management* (2004)
- *Catalina Community Wildfire Protection Plan* (Golder Ranch Fire Department 2007)
- *Sonoita-Elgin Community Wildfire Protection Plan* (Sonoita Fire Department 2007)
- *Arivaca-Sasabe Community Wildfire Protection Plan* (Arivaca Fire Department 2007)
- *Cascabel Community Wildfire Protection Plan* (Cascabel Fire Department 2006)
- *Altar Valley Fire Management Plan* (Natural Resources Conservation Service [NRCS] 2008)

The Core Teams also reviewed Section 101.16.B.iii of HFRA to determine an area adjacent to an evacuation route for hazardous fuel reduction measures to provide safer evacuation from an at-risk community. Since 1980, there have been 3,226 wildfire ignitions within the Pima County analysis area reported in federal and state databases. Large wildfires have become increasingly common in the desert vegetation zones due to the presence of invasive plant species, primarily nonnative annual and perennial grasses. In total, there have been nine large wildfires which burned approximately 137,000 acres of wildland habitat within and adjacent to the Pima County CWPP WUI in the 6-year period of 2002 through 2007. In 2003, a wildfire destroyed more than 314 buildings, including most of the businesses in Summerhaven and the Mt. Lemmon WUI. The fire departments and districts within the county have responded to and suppressed numerous wildland fires within the WUI during the past several years. The areas with the greatest potential for fire ignition, either from natural or human (though unplanned) causes,

are found within the communities of Sells and Summerhaven and along the eastern edge of Pima County (<http://wildfire.cr.usgs.gov/firehistory/>). Many of these wildland fire ignitions have occurred within areas infested with nonnative grasses such as buffelgrass (*Pennisetum ciliare*), red brome (*Bromus rubens*), and Mediterranean grass (*Schismus barbatus*); within xeroriparian corridors; and within higher-elevation chaparral and woodland vegetation associations that threaten the at-risk communities of Pima County with the potential for catastrophic wildland fire. Continued extreme weather conditions, dry fuels, increased nonnative invasive vegetation, and increased fuel loading on federal and nonfederal lands contribute to the potential for catastrophic wildland fires within Pima County (Photo 1.1). As a result, the fire departments and districts and governmental agencies have initiated fire preparedness and land-treatment planning efforts to deal with the types and densities of wildland fuels that significantly threaten communities with potential catastrophic wildfire.



**Photo 1.1. Saltcedar-Infested Riparian Corridor in Pima County
(courtesy of Northwest Fire Department)**

Wildland fire behavior as it relates to weather can be basically divided into four periods equating to the four seasons. Wildfires occurring during the late spring and early summer often exhibit erratic behavior due to dry lightning and heavy fuels from high average daily temperatures and seasonal droughts. In recent years, the southwestern United States has experienced widespread and intense drought, which has been stressing forests (Karl et al. 2009). Record wildfires are also being driven by rising temperatures and related reductions in spring snowpack and soil moisture (Westerling et al. 2006). Associations between wildfire and hydroclimate in western forests indicate that increased wildfire activity over recent decades may be tied to reduced winter precipitation and an early spring snowmelt, particularly in mid-elevation forests (Westerling et al. 2006). If the Southwest becomes warmer and drier, as projected by many climate models, wildland fire seasons are anticipated to increase in length and severity driven by rising spring and summer temperatures and related reductions in spring snowpack and soil moisture (Karl et al. 2009; Westerling et al. 2006; USDA 2012). If periods of extended drought and warmer temperatures become more common in Pima County, increases in wildland fire occurrences, particularly in higher-elevation vegetation associations, and fire severity can be anticipated.

In 2003, Governor Janet Napolitano created the Forest Health Advisory Council and the Forest Health Oversight Council in response to the increasing number, frequency, and intensity of unwanted wildfires threatening Arizona communities and forests (Executive Order 2003-16). The councils were directed to develop scientific information and policy recommendations to advise the Governor's administration on matters of forest health, unnaturally severe forest fires, and community protection. In 2005, the councils established a subcommittee to begin work on a 20-year strategy to restore forest health, protect communities from fire, and encourage forest-based economic activity. Governor Napolitano approved and signed the *Statewide Strategy for Restoring Arizona's Forests* in June 2007. Governor Janice Brewer issued Executive Order 2007-17, re-establishing the Forest Health Council on July 9, 2009. The Core Teams have reviewed the strategy—specifically, the Sky Islands landscapes—to ensure that the recommendations adopted by the Core Teams and presented within the Pima County CWPP comply with, and complement, the *Statewide Strategy for Restoring Arizona's Forests*. The Core Teams have also reviewed the goals and objectives of the Arizona FireScape Project to ensure that the Pima County CWPP is compatible with and complementary to the FireScape Project. Using the information gathered from these supporting documents, the Core Teams and collaborators agreed that the Pima County communities listed in the *Arizona-Identified Communities at Risk* (Arizona State Forester 2009), as well as other developed areas identified as at risk within the Pima County CWPP WUI, constitute interface or intermix communities (see USDA and USDI 2001a; Arizona State Forester 2007) at risk from wildland fire.

B. WUI and Delineation Process

In 2009, five Pima County communities (Kitt Peak, Summerhaven, Arivaca, Sasabe, and Catalina) were included in *Arizona-Identified Communities at Risk* (Arizona State Forester 2009) and were given a WUI risk rating for catastrophic wildland fire. The Core Teams and collaborators concur with this 2009 listing of at-risk communities maintained by the Arizona State Forester. The Core Teams and collaborators recommend maintaining the listing of those five communities, based on the results of the Pima County CWPP wildland fire analysis, and further recommend including 28 other Pima County communities, along with their associated WUI risk ratings, in the 2009 *Arizona-Identified Communities at Risk* (see Table 1.1).

The Pima County CWPP analyzes risk and makes recommendations to reduce the potential for unwanted wildland fire to the 23 at-risk community WUIs composed of 33 individual communities in Pima County, including tribal trust lands. The Pima County CWPP analysis further refines components of wildland fire risk and prioritizes community recommendations for reducing wildland fire potential through vegetative fuel management and public outreach/education for reducing structural ignitability. Figure 1.2 summarizes the process that the Core Teams followed to produce the Pima County CWPP. At the far right of each tier is the “product” resulting from the activities in that tier. These tiers correspond to the sections in the Pima County CWPP and serve as a guide for the rest of this document.



According to HFRA, an “(1) At-risk community . . . means an area – (A) that is comprised of – (i) an interface community . . . or (ii) a group of homes and other structures with basic infrastructure and services . . . within or adjacent to Federal land; (B) in which conditions are conducive to a large-scale wildland fire disturbance event; and (C) for which a significant threat to human life or property exists as a result of a wildland fire disturbance event” (Secs. 101.1.A.i–ii, 101.1.B, and 101.1.C).

The at-risk communities within Pima County are adjacent to federal lands, including public lands administered by BLM, NPS, and CNF, and are consistent with the Arizona State Forester’s definition of an *intermix* or *interface community* (2007:1):

The Intermix Community exists where structures are scattered throughout a wildland area. There is no clear line of demarcation; wildland fuels are continuous outside of and within the developed area. The developed density in the intermix community, ranges from structures very close together to one structure per forty acres. Local fire departments and/or districts normally provide life and property fire protection and may also have wildland fire protection responsibilities.

The Interface Community exists where structures directly abut wildland fuels. There is a clear line of demarcation between wildland fuels and residential, business, and public structures. Wildland fuels do not generally continue into the developed area. The development density for an interface community is usually three or more structures per acre, with shared municipal services. Fire protection is generally provided by a local fire department with the responsibility to protect the structure from both an interior fire and an advancing wildland fire.

In addition to a community’s listing status, the current condition of the wildland fuels within and adjacent to at-risk communities significantly contributes to the possibility of a catastrophic wildfire capable of damaging or destroying community values—such as houses; infrastructure; recreational sites; businesses; wildlife; and unique plant communities, especially desert areas with saguaro cactus—which are important economically for maintaining property values and tourism. Establishing a CWPP to enhance the protection of community values and to minimize the potential loss of property, while ensuring public and firefighter safety during a catastrophic wildfire, remains the overriding priority recommendation of the Pima County CWPP.

The WUI is commonly described as the zone where structures and other features of human development meet and intermingle with undeveloped wildland or vegetative fuels. Communities in the WUI face substantial risk to life, property, and infrastructure. Wildland fire in the WUI is one of the most dangerous and complicated situations firefighters face. The *National Cohesive Wildland Fire Management Strategy Phase II National Report* (WFLC 2012) emphasizes working collaboratively with communities in the WUI to reduce their risk from large-scale wildfire. HFRA builds on existing efforts to restore healthy wildland conditions in the WUI and empowers local communities to determine the extent of the WUI; to determine appropriate wildland fuel mitigation measures; to enhance public education for the prevention of wildland fire; and to authorize expedited environmental assessments, administrative appeals, and legal review for qualifying projects on federal land.

The Pima County CWPP process of delineating WUI boundaries for at-risk communities involved collaboration among local, state, and federal government representatives, as well as interested individuals within the communities (Photo 1.2).



**Photo 1.2. Pima County CWPP
Core Planning Team Meeting**

The Pima County CWPP WUI is the minimum area needed to provide protection to each community and its surrounding community values. The identified WUI includes a total of 1,579,699 acres composed of a mix of private, county, state, tribal trust, and federal lands. The WUI lands that surround the communities are in a condition conducive to a large-scale wildland fire, and such a wildfire could threaten human life and properties (Photo 1.3).



**Photo 1.3. Wildland Fire in Pima County
(courtesy of Northwest Fire Department)**

General elements used in creating the WUI for Pima County at-risk communities include the following:

- Fuel hazards, local topography, vegetative fuels, and natural firebreaks
- Historical fire occurrence
- Community development characteristics
- Firefighting preparedness and response capabilities
- Infrastructure and evacuation routes
- Recreation, scenic, and wildlife values

C. Desired Future Condition and Wildfire Mitigation in the WUI

The desired future condition of Pima County CWPP lands includes the maintenance of, or return to, wildland fire resiliency status and the maintenance of, or return to, the vegetation component of the historical plant potential community and appropriate management of nonnative vegetation across Pima County. The historical plant potential community is composed of desert scrublands, shrublands (mesquite uplands), riparian corridors, and semidesert grasslands and oak woodland, pine-oak woodland, and pine and mixed conifer forests—all of which have an associated understory of grasses and shrubs. Some historical plant communities have become invaded and colonized by invasive grasses or woody species and may have undergone a permanent type conversion (NatureServe 2004; Gori and Enquist 2003). The Core Teams intend the Pima County CWPP to complement BLM, NPS, and CNF wildland fire management objectives; the *Statewide Strategy for Restoring Arizona's Forests* (Governor's Forest Health Councils 2007); the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a); the *Coronado National Forest Plan* (USDA FS1988, as amended), *Coronado National Forest Fire Management Plan* (USDA FS 2010) and the *Saguaro National Park Fire Management Plan* (USDI NPS 2007), *Organ Pipe Cactus National Monument Fire Management Plan* (USDI NPS 2004), *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013), and the Arizona FireScape Project (<http://www.azfirescape.org/home>).

The desired future condition of public lands is consistent with those described by the Core Teams—community wildfire protection, watershed and rangeland restoration, and protection of community values, as well as the restoration of native vegetation to historical wildfire return intervals. However, in the face of changing climate conditions, historical vegetation communities may not be achievable. The Core Teams encourage land-management agencies to develop landscape-scale restoration of vegetation communities that restore critical wildlife habitat, ensure healthy functioning watersheds, and safeguard our communities. Vegetative types maintained in this condition allow natural processes such as fire to be incorporated into long-term management practices to both sustain habitat health and meet Pima County CWPP management goals while providing for community protection from unwanted wildland fire. Public education and land treatment projects in the Pima County CWPP area—coupled with current efforts of local governments, fire departments and districts, CNF, NPS, Pascua Yaqui Tribe, and BLM—will create a better-informed constituency capable of protecting at-risk communities through restoration and vegetative fuels mitigation efforts within the WUI. Federal wildfire reduction policy on public lands is planned and administered primarily by BLM, NPS, USFWS, Pascua Yaqui Tribe, and CNF, which are the federal and

tribal governing entities for the public lands associated with the Pima County CWPP planning area. These agencies and tribes manage wildland fire to help reduce unnaturally high wildland fuel loads that contribute to catastrophic wildland fire, to help encourage the return of fire to a more natural role in fire-adapted ecosystems, to achieve ecosystem goals, to keep fire out of fire-sensitive desert and riparian plant communities, to reduce economic impacts, and to enhance public and firefighter safety.

The desired future condition of federal lands includes improving public and firefighter safety from wildland fire, using wildland fire as a management tool to achieve resource objectives where appropriate, managing hazardous wildland fuels within and adjacent to the WUI, providing adaptive wildland fire response and suppression, and returning public lands to Condition Class I status. Federal lands in this condition class can carry wildfire without significant impacts on habitat components. Current federal fire policy allows wildland fires to be concurrently managed for one or more objectives, and objectives can change as the fire spreads across the landscape (USDA and USDI 2009). The BLM, NPS, Pascua Yaqui Tribe, and CNF adhere to federal policy when managing all unplanned wildfire ignitions on public lands within the WUI. Federal policy for reducing wildfires on public lands (that is, BLM, NPS, Pascua Yaqui Tribe, and FS lands) is planned and administered locally through the BLM's field offices, Saguaro National Park, Pascua Yaqui Tribe, and the CNF. In Saguaro National Park, all fires are suppressed in desert areas where plants are not adapted to fire. In fire-adapted plant communities at higher elevations, fire may be managed to achieve resource objectives depending on the current and predicted situation. At Organ Pipe Cactus National Monument, desert areas are protected from fire. The Tohono O'odham Nation and Pascua Yaqui Tribe manage tribal wildland fire programs.

Under the proposed action described in the *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a), BLM-administered public lands are assigned one of two land use allocations for fire management: Allocation 1 includes areas suitable for wildland fire use for resource management benefit, and Allocation 2 includes areas not suitable for wildland fire use for resource benefit. The *CNF Fire Management Plan* (USDA FS 2010) has identified two fire management units (FMUs). These FMUs maintain consistency with the management objectives as outlined in the CNF Plan (1988, as amended). FMU 1 includes a full range of responses, from aggressive initial attack to managing natural ignitions to achieve desired CNF Plan objectives when risk is within acceptable limits. FMU 2 is generally located at elevations less than 4,500 feet in the Santa Catalina, Santa Rita, Galiuro, and Tumacacori Ecosystem Management Areas. In this FMU, resource protection is the only objective, as it contains non-fire-adapted vegetation, which, within the CNF, consists of the southwestern desert scrub vegetation associations.

The basic objectives of the management policies at Saguaro National Park are the protection and perpetuation of naturally operating ecosystems to the fullest extent consistent with safeguarding public safety, cultural resources, and private property. As described in the *Saguaro National Park Fire Management Plan* (USDI NPS 2007), fire is a natural process in the Park's ecosystems, and consequently, fire must be managed so that it can assume its natural role, either as wildland fire use or through prescribed burning. Management-ignited prescribed fire will be used to re-establish the natural influence of fire and restore natural fuel loadings through the reduction of hazardous fuel accumulation. All projects that include prescribed burning will include specific burning prescriptions which will ensure that the fire can be

controlled within established boundaries and that the burning will meet the desired fire management objectives for the resource.

The desired future condition of private lands in the WUI is for landowners to comply with the National Firewise Communities program (<http://www.firewise.org/>) or to meet home-ignition-zone landscaping (<http://www.fireadapted.org/>) or fire-safe landscaping recommended by the Pima County CWPP fire departments and districts in compliance with local ordinances. The Fire Adapted Communities Web site offers information and specific actions homeowners can take to reduce wildfire risk. Firewise is a national program that helps communities reduce wildfire risks and provides them with information about protecting themselves against catastrophic wildfires and mitigating losses from such fires. Within Arizona, the State Forester administers the Firewise certification program. Fire departments and districts and local governments in Pima County would like to make this information available to their citizens and to encourage its application. Residential and other structures that comply with Firewise standards significantly reduce fire-ignition risks in a community, as well as the potential for fires to spread to surrounding habitats. Additionally, structures that comply with Firewise recommendations are more likely to survive wildland fires that do spread into a community (Cohen 2008).

The Core Teams are aware that wildland fuel accumulations primarily associated with the invasion of woody species and nonnative grasses, together with community growth in the WUI, have produced areas at high risk from catastrophic wildfire. The Core Teams aspire to achieve restored, self-sustaining, biologically diverse habitats of mixed open space and developed areas that contribute to a quality of life demanded by Pima County citizens. The Core Teams recognize that protection from catastrophic wildland fire requires collaboration and implementation through all levels of government and through an informed and motivated public. The Core Teams considered the restoration of forest, rangeland, desert, and riparian health; community protection, and public and firefighter safety while developing this CWPP.

Financial commitments required to reduce the risk of catastrophic wildfire can be extensive for municipal, county, state, and federal governments; for fire districts; and for the small rural communities surrounded by public lands. Pima County, CNF, NPS, Pascua Yaqui Tribe, and BLM have implemented wildland fuel mitigation projects within or near the Pima County CWPP WUI. Fire departments and districts have improved wildland fire suppression response and continue public education and outreach programs concerning wildland fire threat and home-ignition-zone recommendations. However, the availability of federal, state, and local funding for mitigation of wildland fire risk and for enhanced response and public education will drive the ability of the Cooperators to meet the goals of the Pima County CWPP (that is, treatments depend on fund availability). The CWPP Core Team recognizes the importance of partnering with organizations such as the Southern Arizona Buffelgrass Coordination Center (SABCC) to assist in meeting CWPP goals and objectives. Pima County fire departments and districts have standing automatic-aid agreements allowing for closest resources to provide initial-attack response. The fire departments and districts of Pima County maintain wildland fire response teams supported by various engines and support equipment—including ambulances, brush trucks, fire engines, ladder trucks, and heavy-rescue vehicles—and various other specialized response vehicles to help suppress wildland fires (Photo 1.4).



**Photo 1.4. Type 6 Wildland Fire Truck
(courtesy of Northwest Fire Department)**

Additionally, the fire departments and districts have taken proactive measures to encourage willing property owners to reduce fire risk on private property (HFRA, Sec.103.d.2.B). Wildland fire response teams are composed of personnel with various levels of wildland firefighting training, including red-carded firefighters. The response teams have coordinated radio frequencies to improve communications between initial-attack and responding firefighting agencies and departments. Specially trained wildland fire response teams not only provide suppression response to brush fires but also provide community awareness programs and structural-fire risk assessments. The Core Teams, BLM, NPS, Pascua Yaqui Tribe, and CNF collaborators are proposing additional wildland fuel treatments and wildland fire suppression enhancements and have been proactive in pursuing funding for wildland fire public outreach programs and fire-suppression training and equipment.

D. Goals for the Pima County CWPP

To reduce the risks to life and property from catastrophic wildland fire, and as a collaboration of communities and agencies, the Core Teams have agreed on the following primary goals of the Pima County CWPP:

- Improve fire prevention and suppression, emphasizing firefighter and public safety
- Reduce hazardous fuels, emphasizing public and private property protection
- Maintain and appropriately restore forest, rangeland, and riparian health
- Promote community involvement and provide for community protection
- Recommend measures to reduce structural ignitability in the WUI

- Encourage economic development in the communities from vegetative treatments
- Promote development of wildfire emergency evacuation and communication plans
- Use the CWPP in conjunction with surrounding community and agency fire management plans

E. Planning Process

During initial analysis, and to aid the overall development of this plan, the Core Teams reviewed the following documents and studies:

- “Urban Wildland Interface Communities within the Vicinity of Federal Lands That Are at High Risk from Wildfire,” *Federal Register* Vol. 66, Nos. 3 and 160 (USDA and USDI 2001a, 2001b)
- *Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities* (Presidential Policy 2002)
- *HFRA*
- *The Healthy Forests Initiative and Healthy Forests Restoration Act: Interim Field Guide* (USDA FS and USDI BLM 2004)
- *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (Communities Committee et al. 2004)
- *Field Guidance: Identifying and Prioritizing Communities at Risk* (National Association of State Foresters 2003)
- *Arizona Wildland Urban Interface Assessment* (Arizona State Forester 2004)
- *Arizona-Identified Communities at Risk* (Arizona State Forester 2009)
- *Identifying Arizona’s Wildland/Urban Interface Communities at Risk: A Guide for State and Federal Land Managers* (Arizona State Forester 2007)
- *Statewide Strategy for Restoring Arizona’s Forests* (Governor’s Forest Health Councils 2007)
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: 10-Year Comprehensive Strategy Implementation Plan* (USDA FS and USDI BLM 2002)
- *Approved Arizona Statewide Land Use Plan Amendment for Fire, Fuels, and Air Quality Management and Decision Record* (USDI BLM 2004a)
- *Arizona BLM Gila District Fire Management Plan* (USDI BLM 2013)
- *Coronado National Forest Plan* (USDA FS 1988, as amended)
- *Coronado National Forest Fire Management Plan* (USDA FS 2010)
- *Saguaro National Park Fire Management Plan* (USDI NPS 2007)
- *Organ Pipe Cactus National Monument Fire Management Plan* (USDI NPS 2004)

- *Southern Arizona Buffelgrass Strategic Plan* (Rogstad 2008)
- *Wildland Fire Use Implementation Procedures Reference Guide* (USDI and USDA 2005)
- *Wildland Fire Suppression (Including Wildland Fire Use) and Rehabilitation in Riparian and Aquatic Habitats (RA)* (USDI BLM 2004b)
- *Guidance for Implementation of Federal Wildland Fire Management Policy* (USDA and USDI 2009)
- *Pima County Multi-Jurisdictional Hazard Mitigation Plan* (PCOEM 2012)
- *Pascua Yaqui Tribe Wildland Fire Management Plan* (BIA Salt River Agency 2012a)
- *Pascua Yaqui Tribe Fuels Management Plan* (BIA Salt River Agency 2012b)
- *Tohono O'odham Nation Wildland Fire Management Plan* (Tohono O'odham Nation 2004)
- Pima County Ordinance No. 2012-34: "Adopting by Reference the 2012 International Wildland-Urban Interface Code with Local Amendments (Applicable Only to Areas Designated Rural Forest Village under the Pima County Comprehensive Plan and Areas Encircled Thereby)" (Pima County 2012)
- Arizona FireScape Project (<http://www.azfirescape.org/home>)

Action recommendations for at-risk areas within the Pima County CWPP WUI boundaries have been developed as part of this planning process. Treatments for wildland vegetative fuels and additional wildland fire mitigation measures are recommended to be implemented in specific time frames and with associated monitoring to determine and document measurable outcomes. Successful implementation of the Pima County CWPP will require collaboration by fire departments and districts, governments, resource-management agencies, and private landowners. The cooperating agencies must develop processes and systems that ensure recommended actions of the Pima County CWPP comply with applicable local, state, and federal environmental regulations. The dedication of the Core Teams and collaborators in implementing the Pima County CWPP ensures that all agencies, groups, and individuals involved will develop any additional formal agreements necessary for the timely implementation, monitoring, and reporting of the Pima County CWPP. The Core Teams were formed not only to meet collaborative requirements of HFRA but also to represent all of the different interests and diversity within Pima County communities, with all parties being involved and committed to the development and implementation of the Pima County CWPP.

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