



Maricopa County

Community Wildfire Protection Plan Update

September 2014



- Aguila
- Apache Junction
- Avondale
- Buckeye
- Buckeye Valley
- Cave Creek
- Circle City/Morristown
- Carefree
- Chandler
- El Mirage
- Fountain Hills
- Gila Bend
- Glendale
- Gilbert
- Guadalupe
- Goodyear
- Harquahala
- Litchfield Park
- Mesa
- New River
- Peoria
- Phoenix
- Paradise Valley
- Queen Creek
- Rio Verde
- Scottsdale
- Sun City
- Sun City West
- Sunflower**
- Sun Lakes
- Surprise
- Tempe
- Tolleson
- Tonopah
- Wickenburg
- Wittmann
- Youngtown

- Arizona State Forestry Division
- Maricopa County Department of Emergency Management
- US Department of the Interior Bureau of Land Management
- Tonto National Forest
- Fort McDowell Indian Community
- Gila River Indian Community
- Tohono O'odham Indian Nation San Lucy District
- Salt River Pima-Maricopa Indian Community

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ACRONYMS AND ABBREVIATIONS

APS	Arizona Public Service
ASLD	Arizona State Land Department
ASFD	Arizona State Forestry Division
BLM	Bureau of Land Management
CWPP	community wildfire protection plan
HFRA	Healthy Forests Restoration Act of 2003
IGA	intergovernmental agreement
MCDEM	Maricopa County Department of Emergency Management
PPE	Personal protection equipment
SRP	Salt River Project
TNF	Tonto National Forest
WUI	wildland-urban interface

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I. INTRODUCTION

Beginning in September 2009 the Maricopa County Department of Emergency Management (MCDEM) established a Core Planning Team composed of Federal, Tribal and State Wildland Fire Resource Staff, Municipal Fire Department staff, and other wildfire resource specialist, community and individual interested parties to develop a county-wide community wildfire protection plan compliant with the Healthy Forests Restoration Act of 2003 (HFRA) (*MCDEM 2010, Maricopa County Community Wildfire Protection Plan*). The collaborative planning process utilized to develop the Maricopa County Community Wildfire Protection Plan (MCCWPP) is described in Section 1, pages 1–13, of the 2010 MCCWPP. The MCCWPP was completed in April 2010 and was approved or concurred by 70 agency, fire departments and organizations. Since adoption of the MCCWPP the Core Planning Team and cooperating agencies have been actively working toward achieving the goals established in the MCCWPP.

During the MCCWPP planning process MCDEM and the core planning team analyzed the potential of catastrophic wildland fire for all at-risk communities and unincorporated areas in Maricopa County. Figure 1.1 shows land ownership boundaries within Maricopa County and the associate Core Planning Team areas. The analyses resulted in the determination that there are 3,072,461 acres of Wildland Urban Interface (WUI) within 43 Maricopa County communities which are composed of 120,252 acres (4%) of high risk wildland fire risk, 1,749,491 (57%) acres of moderate risk and 1,202,717 (39%) acres of low wildland fire risk (See Appendix A).

During the analysis the Core Team established the following overarching goals of the MCCWPP (MCCWPP 2010:11–12):

- 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 MCCWPP with surrounding community and agency fire management plans

The environmental elements used by the Core Planning Team to identify wildland fire risk to community WUIs include wildland vegetative fuel hazards, comparison of average 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 as an influencing factor in determining wildland fire risk to communities within the WUI. The wildland fire analyses and results are described in Section 2, pages 14–51, of the 2010 MCCWPP.

In order to reduce the risk of, and enhance response to, unwanted wildland fire the Core Planning Team developed recommendations for the management of hazardous wildland fuels; 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. The Core Planning Team also identified the MCCWPP administrators—Maricopa County fire chiefs, Maricopa County Department of Emergency Management (MCDEM), Tonto National Forest (TNF), Arizona State Forestry Division (ASFD), and Bureau of Land Management (BLM)—who will mutually work toward implementing and monitoring the MCCWPP action recommendations.

To prioritize treatments, the Core Team identified 112 wildland treatment management units within 53 sub-WUI designations within Maricopa County (See Appendix B). These treatment units were analyzed and categorized according to potential risk for wildfire. Each unit was also ranked and described along with a recommendation for its preferred treatment type and method (See Appendix C). Preferred treatments were recommended for treatment management units identified as high risk. These treatments are designed to meet the wildland fuel modification objectives, enhanced wildland fire protection and public education and outreach goals of the MCCWPP. The collaborative process for developing wildland fuel reduction recommendations; developing comprehensive wildland fire prevention and loss mitigation recommendations and recommendations for public outreach and education is presented in Section 3 of the 2010 MCCWPP, pages 81–101.

During the development of the MCCWPP, the Core Planning Team identified action recommendations, implementation schedules, and project partners, necessary to achieve priority goals outlined in the 2010 MCCWPP. Action recommendation included identifying priority treatment areas for fuel reduction projects. Treatment areas were identified within the WUI to create survivable space through treatments within the home ignition zone, the use of strategically placed fuelbreaks, and the modification of hazardous wildland fuels. Additional action recommendations identified by the Core Planning Team were designed to reduce structural ignitability. Reduction of structural ignitability is achieved through evaluation; maintenance; and, at times, upgrades to community response facilities, capabilities, and equipment. Action recommendation also described is the promotion of community involvement and the role of community education and outreach, homeowner responsibility and participation in reducing the threat of wildland fire. Priority action recommendations for fuels reduction, reduced structural ignitability, and public outreach is described in Section 4 of the 2010 MCCWPP, pages 102–109.

The Core Planning Team determined that, as needed, the MCDEM, in coordination with the countywide community MCCWPP Working Group, would produce a report detailing the success of MCCWPP project implementation and overall progress toward meeting MCCWPP goals. The MCCWPP Working Group reports successful grant awards received for implementing the MCCWPP action recommendations to the MCDEM. Successful grant awards and projects accomplished are necessary for the production of an annual monitoring report describing accomplishments toward achieving MCCWPP goals. The Core Planning Team established performance measures during the 2010 MCCWPP planning process to be evaluated in each annual monitoring report. The Administrative Oversight, Monitoring, and Reporting recommendations are presented in Section 5 of the 2010 MCCWPP, pages 110–112.

The MCCWPP administrators have produced an annual report of successful grant awards and projects implemented in 2011 and 2012 designed to meet MCCWPP goals. As the cooperating agencies have completed the fifth year of working toward implementation of the MCCWPP action recommendations, the Core Planning Team through MCDEM produced this Five-Year Update of the Maricopa County Community Wildfire Protection Plan combining all agency actions conducted subsequent to the approval of the MCCWPP into a single report and will update Section 4 of the 2010 MCCWPP.

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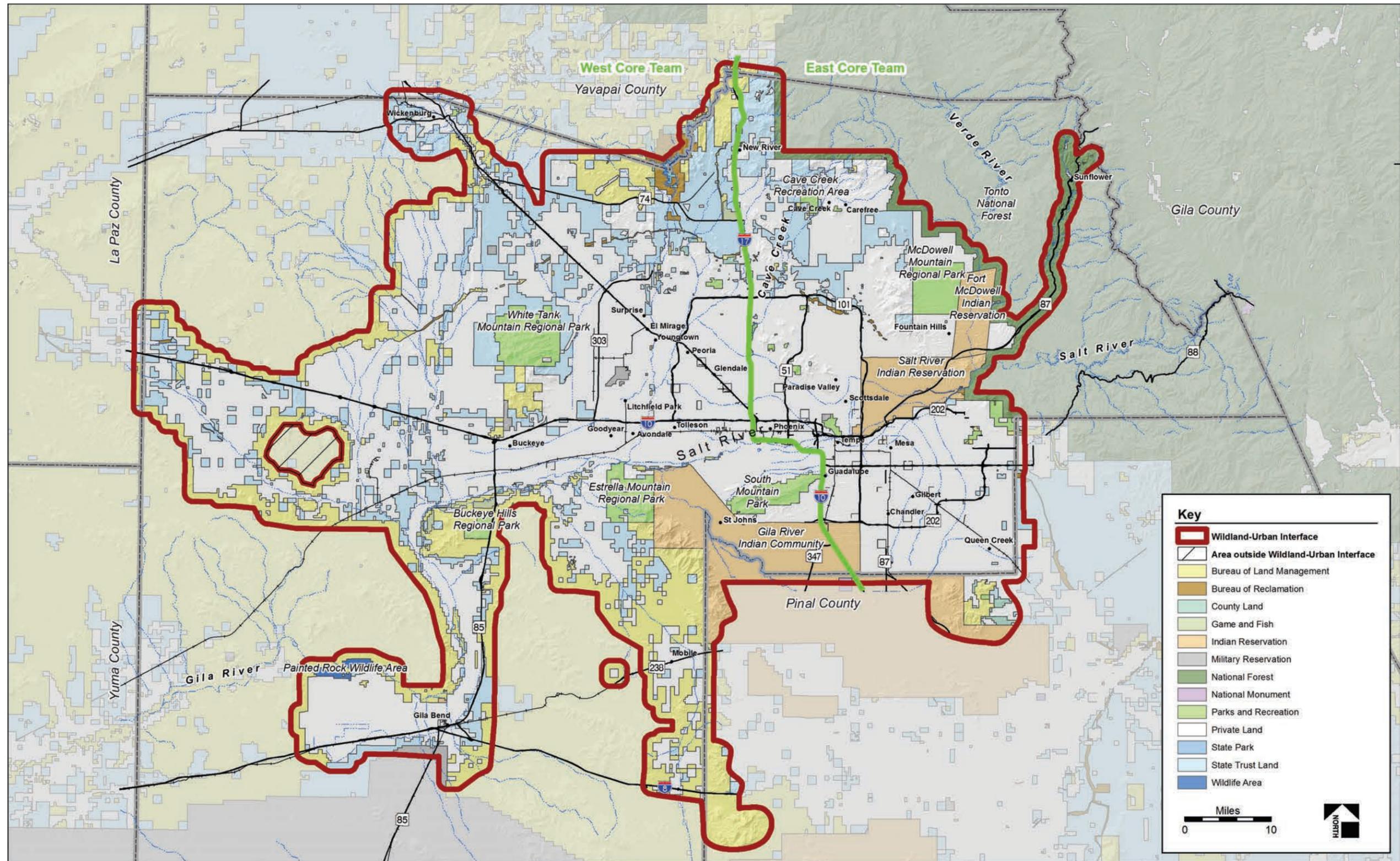


Figure 1.1. Land Ownership and Core Planning Team Areas within Maricopa County WUI

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II. COMMUNITY MITIGATION PLAN

Section 3 of the MCCWPP outlines priorities developed by the Core Planning Team in 2010 for wildland fuels treatments, as well as the recommended methods of treatment and management strategies for mitigating the potential spread of catastrophic wildland fire throughout the WUI. Section 3 also presented recommendations for enhanced wildland fire protection capabilities as well as public education, information, and outreach objectives. During the 2014 review of the MCCWPP the Core Planning Team does not believe the priorities or recommendations developed during the 2009 – 2010 planning process are in need of revision and are in line with current agency and department goals and objectives. To track progress and to continue achieving the goals and objectives set forth in the 2010 MCCWPP, MCDEM and the Core Planning Team agreed that the 2010 MCCWPP should be updated to show accomplishments and include any amended priority recommendations for achieving goals through 2020.

A. Wildland Fuel Reduction Priorities

After determining the areas at greatest risk for wildland fire (Section 2 of the 2010 MCCWPP), the Core Teams developed a series of proposed actions, including residential treatments; a series of firebreaks appropriate for the wildland fuel types; and fuel mitigation treatments for undeveloped landscape areas. The wildland vegetative fuel and firebreak recommended treatments developed in 2010 were designed to meet the MCCWPP goals of enhancing firefighter and public safety, reducing hazardous wildland fuels on public and private lands, improving fire prevention and suppression, restoring riparian and rangeland health, involving the community, and expediting project implementation.

To prioritize wildland fuel mitigation projects, the Core Team analyzed wildland fuel hazards, fire history, and at-risk community values. This combined risk assessment was compiled in a single community base map depicting areas of low, moderate, and high-risk evaluations. These risk areas were further identified and categorized into a total of 112 site-specific management areas (treatment management units) within the WUI, with an overall risk value was determined for each treatment management unit (See Appendix B). Hazardous fuels reduction recommendations for each treatment management unit vary by constituting either a single firebreak in appropriate width and length within the WUI or broader land treatment applications of wildland fuel reduction and habitat restoration within the WUI. The complete listing and risk rating of all wildland fire management units and associated treatments is contained within Section 3 of the MCCWPP, pages 84–93.

The following information identifies completed and ongoing projects designed to meet the goals and objectives identified in the 2010 MCCWPP. Figure 2.1 identifies projects in relation to identified treatment management units within the MCCWPP WUI.

1. Fuel Reduction Projects Completed to Date

Rio Verde (RV)

The communities of Rio Verde and Tonto Verde have embraced the Community Wildfire Protection Plan and have become certified Firewise communities under the National Fire Protection Association (NFPA) Firewise program. Jointly, the communities have created a nonprofit 501(c)3, known as the Verdes Wildfire

Protection Association, to raise funding for ongoing fuels maintenance and community wildfire support programs.

Rio Verde RV1

- Completed fuels reduction in all common and riparian areas within the communities of Rio Verde and Tonto Verde
- Completed fuels reduction on all private parcels within the communities of Rio Verde and Tonto Verde
- Complete fuels reduction on the parcel of property known as the Rio Verde Ranch
- Recommended treatments 1,2,3,4,6 and 7 were completed
- All Rio Verde and Tonto Verde properties are included in an ongoing two year fuels maintenance schedule
- National Environmental Protection Act (NEPA) analysis is currently underway as necessary to gain approval for a 100' wide fuels reduction/fuel brake on the eastern border of the Rio Verde and Tonto Verde communities with the Tonto National Forest Cave Creek Ranger District.
- Utility and fire suppression access has been enhanced
- Salt River Project (SRP) supported and participated in the fuels reduction/fuel break project on the eastern border of McDowell Mountain Park and the Rio Verde Fire District.
- SRP and Maricopa County Department of Transportation (MCDOT) constructed road access and an emergency access security gate into the SRP right of way (Photo 2.1).
- The community of Tonto Verde received a sub-grantee award (\$20,000) for a fuels reduction project on the western border of the Tonto Verde Community in an area of volatile fuel conditions and explosive population growth over the past few years.



Photo 2.1. Example of Gate, Access Point, and Piped Culvert within the Rio Verde WUI

Management Area MA 11

- Completed fuels reduction on the East border of McDowell Mountain Park bordering the communities of Rio Verde and Tonto Verde consisting of a 100' wide fuel reduction fuel break
- Fuels reduction along northern fence boundary of park
- Recommended treatments 1,2,3,4,6 and 7 were completed
- Two year maintenance schedules are in place for all treated areas

Gila River Indian Community (GRIC) GRIC6, GRIC5, GRIC3

- SRP fuels reduction within 100 foot ROW from the GRIC/COP border which is Pecos Road, west from I-10 then due west on the City of Phoenix to 51st Avenue have been completed.

Paradise Valley (PV) PV 1

- Wash mapping for potential fuels reduction within washes (Photo 2.2)
- A re-assessment of wildfire risk within and adjacent to the Mummy Mountain Preserve was conducted
- Paradise Valley Town Council adopted ordinance Number prohibiting the use of fireworks within 500 yards of the Mummy Mountain Preserve

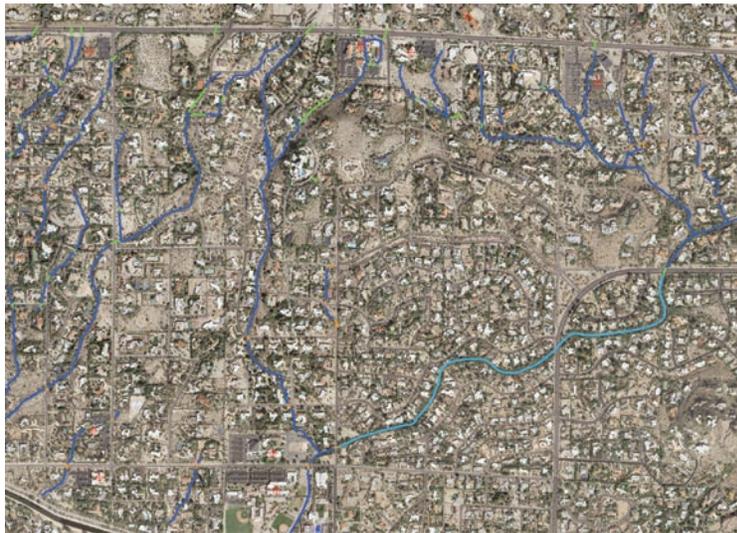


Photo 2.2. Xeroriparian Corridors Mapped for Potential Wildland Fire Hazard in Paradise Valley

Fort McDowell Yavapai Nation (FMD1)

- Fuels reduction along Fort McDowell Road south of Yavapai Road accomplished utilizing Tribal Nation's Response Team Type 2 hand crew while the crew was staffed for severity in June of 2013 (Photos 2.3 and 2.4).
- Fuels reduction completed in July of 2013 by Fort McDowell Yavapai Nation Public Works Department at Fort McDowell Road and the We Ko Pa Trail.

- Additional fuels reduction being conducted on the Verde River north of the Fort McDowell Yavapai Nation Farms building. This thinning is being done by Tribal members in preparation for a cultural ceremony later this year (2014).



**Photo 2.3. Tribal Nations Response Team
Type 2 Hand Crew Conducting Fuels Reduction**



**Photo 2.4. Fuels Reduction along
Fort McDowell Road South of Yavapai Road**

Fountain Hills (FH1)

- Fuels reduction within Ashbrook Wash
- Fuels reduction within Balboa Wash

Phoenix (PHX1)

- Addition of Anthem Firewise community

Scottsdale (S2)

- Addition of Ancala West Firewise community
- Approximate 12 acres of vegetation removal (salt Cedar and desert broom) in Desert Diamond Estates

Scottsdale (S3)

- Approximate 5 acres of vegetative thinning in desert washes

Buckeye (BE1)

- Fuels reduction treatments conducted on vacant residential parcels

Buckeye Valley (BEV2, BEV3)

- Approximately 423 acres of Salt Cedar fuels reduction completed within Gila River corridor

Queen Creek (QC1)

- The Town of Queen Creek has two washes, Queen Creek and Sonoqui, which cross the community from east to west. From Power Rd. to Riggs Rd. “areas along and in the Sonoqui Wash [posed] a low to medium threat” according to the Town of Queen Creek Fire Department 2009 Wildland Fire Risk Assessment. The wash also posed a flooding hazard. The Town in cooperation with the Flood Control District of Maricopa County (FCDMC) undertook several projects to mitigate the flood hazard to the area. The projects had the added benefit of mitigating the wildland hazard due to the need to widen the wash.

Litchfield Park (LP1)

- Starting in 2009, the City of Litchfield Park began a fuel reduction project on a 20 acre plot of land referred to as La Loma Ranch, the Paul Litchfield Homestead. This plot of land was gifted to the City by Paul Litchfield’s family. The 20 acre plot is located on the corner of Litchfield Road and Camelback Rd. in Litchfield Park. The land is home to Paul Litchfield’s La Loma Ranch home and several out buildings. Paul Litchfield, the founder of Litchfield Park, had his home during the developing years of the City of Litchfield Park. His daughter Edith Denny and her husband continued to live in the home until their deaths 2008 and 2009. After the City accepted the gift of the property, the first project was to clear the land on and around the property to reduce available fuel. This project cleared available fuel 30 feet from the home and throughout the 20 acres. This is ongoing and is being maintained each year.

Goodyear (GY4)

- Maricopa County and the BLM have entered into Cooperative Agreement #L09AC15613 whereas BLM has agreed to provide grant funding to the County through Catalog of Federal Domestic Assistance (CFDA) #_15.242 to support the National Fire Plan. Pursuant to this Agreement,

Maricopa County would reimburse certain Arizona political subdivisions for approved costs and expenses incurred in connection with the Maricopa County Community Wildfire Protection Program.

- In 2014 the City of Goodyear entered in to a subgrantee reimbursement agreement to mitigate fuels in Management Area 7. The project area is in the Corgett Wash, located in the northwest area of the Estrella Mountain Park development (Photos 2.5 and 2.6).
- An IGA was reached between the City of Goodyear and the Arizona Department of Forestry which provided sawyer teams for the project. The Goodyear Wildland Response Team also participated in the effort. Multiple chevron fire breaks were cut and general thinning, chipping and removal of debris from non-native plant species occurred over a roughly 3 to 5 acre area.



Photo 2.5. Vegetation Condition within Corgett Wash before Fuels Reduction



Photo 2.6. Vegetation Condition within Corgett Wash after Fuels Reduction

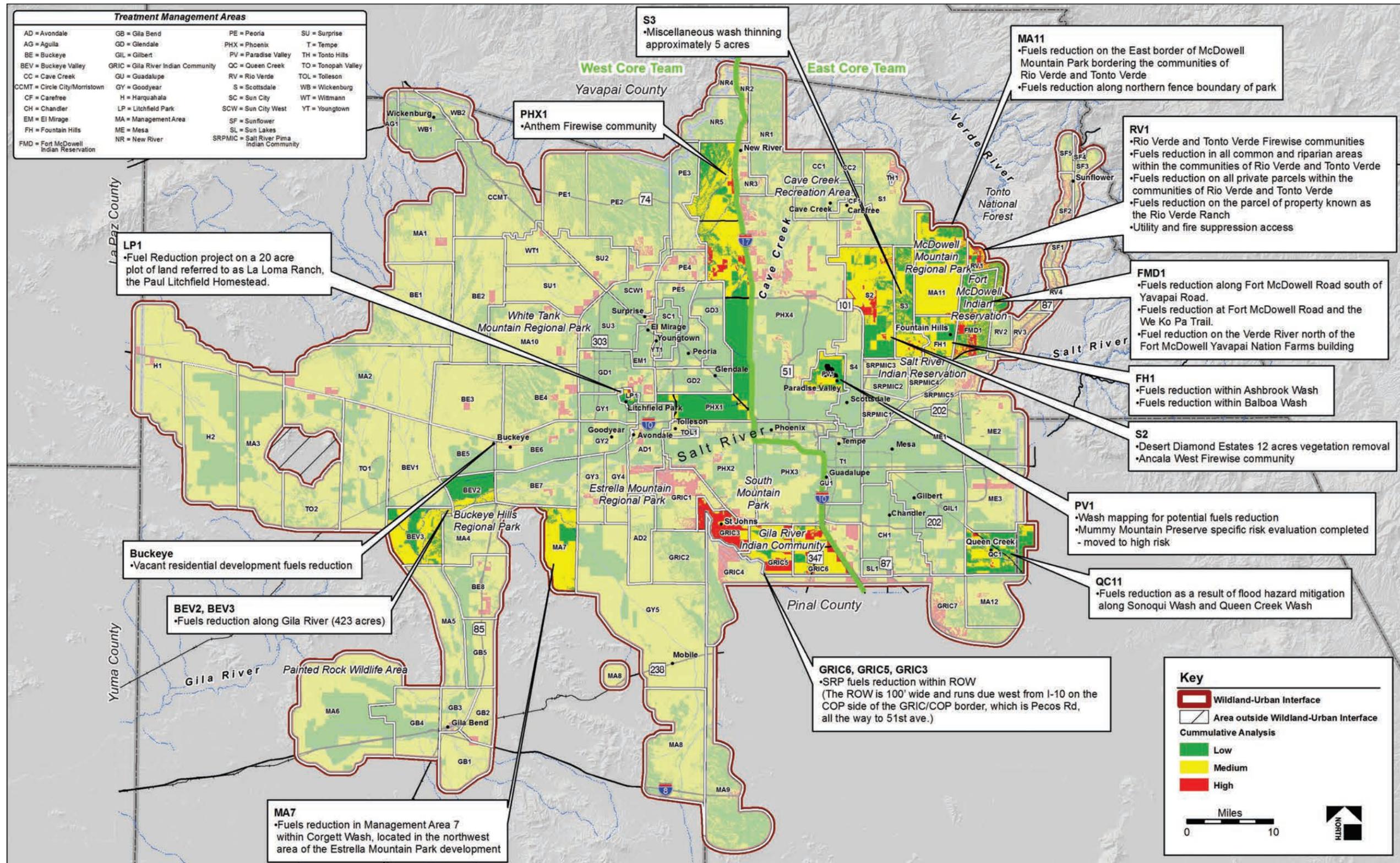


Figure 2.1. Projects in Relation to Maricopa County WUI

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B. Prevention and Loss Mitigation

The MCCWPP is intended be used as a resource to help coordinate long-term interagency mitigation of catastrophic wildfire events in at-risk communities within Maricopa County. The MCCWPP Core Team established specific goals for wildland fire prevention and loss mitigation as follows during the development and implementation of the 2010 MCCWPP:

- Improve fire prevention and suppression for firefighter and public safety and to protect private property
- Promote community collaboration, involvement, and education
- Recommend measures to reduce structural ignitability in the Maricopa County MCCWPP WUI
- Preserve the aesthetics and Wildfire values within riparian areas
- Identify funding needs and opportunities
- Expedite project planning through partnerships with ASFD, BLM, and other private and public entities in managing wildland fire risk within the WUI

A major component of prevention and loss mitigation is cooperative agreements between agencies and public utilities to accomplish similar goals and objectives. In the development of the 2010 MCCWPP the MCDEM and Core Team discussed the advantage of working cooperatively with Salt River Project (SRP) and Arizona Public Service (APS) utility companies in maintaining acceptable wildland fuel conditions within their respective rights-of-way and easements as well as cooperative agreements for vegetation management on lands adjacent to APS and SRP right-of-way. This cooperative agreement has allowed agencies and public utilities to implement fuels reduction treatments and implement access points in high hazard areas as identified in the Fuels Reduction Section of this update.

The Core Planning Team has responded to many wildland fires throughout the Maricopa County WUI communities. Subsequent to the adoption of the 2010 MCCWPP approximately 420 wildland fire ignitions have occurred within or adjacent to the Maricopa County WUI communities. The continuing need for highly trained and efficiently equipped fire fighters remains evident. The overarching goal of fire fighter and public safety protection from unwanted wildfire is paramount to the Core Planning Team. The Core Planning Team has worked cooperatively to implement the prevention and loss mitigation goals established in the 2010 MCCWPP. During the years of 1980 through 2009, prior to developing the MCCWPP there were 5010 wildfire ignitions reported through the Federal and State agencies, averaging 167 wildfire ignitions per year (<http://wildfire.cr.usgs.gov/firehistory/>, Arizona State Forestry Division 2009). Wildfire ignition data from 2010 to current is incomplete. Federal wildfire ignition history data is available for 2010 through 2013 (<http://wildfire.cr.usgs.gov/firehistory/>). Wildland fire ignitions from the Arizona State Forestry Division were not available for 2010, 2011, and 2012, but are available for 2013 through early September 2014. These data sets recorded 417 wildfire ignitions from 2010 to early September 2014, averaging 104 fires per year. Figure 2.2 shows wildfire ignitions occurring within and adjacent to the WUI from 1980 through 2009 and 2010 through early September 2014.

1. Prevention and Loss Mitigation Projects Completed to Date

During the 2010 MCCWPP planning process the Core Planning Team stated that actions which reduce fire risks and promote effective responses to wildland fires and reducing the risk of wildland fire igniting and spreading throughout the WUI must be undertaken. Therefore in 2010 the Core Planning Team developed the following recommendations to enhance protection capabilities for at-risk communities within Maricopa County:

- Obtain one fully functional Type 6 engine and one fully functional Type 1 engine for wildland fire response by local fire departments and districts.
 - Actions Implemented
 - Rural Metro has permanently placed a Type 6 brush engine in Cave Creek
 - Sun Lakes Fire District acquired a Type 6 Brush Truck through a grant from the Gila River Indian Community
 - Queen Creek Fire and Medical Department upgraded Tender 411 from a Type 2 Support Only to a Type 1 Tactical unit.
- Develop additional wildland fire preplans for all high-hazard locations across Maricopa County where they have not been adopted.
 - Actions Implemented
 - Salt River Indian Community completed the Fire Management Plan and Fuels Reduction Plan.
 - In 2013 the Queen Creek County Island Fire District (QCCIFD) was created. On May 1st, the Queen Creek Fire and Medical Department became the fire and emergency medical service provider for the QCCIFD. The QCCIFD includes a four square mile section of the southern portion of the Town of Queen Creek. This area begins the wildland urban interface transition to the foothills of the San Tan Mountains Regional Park.
 - Since 2009 the Chandler Fire Department has responded to over 300 natural vegetation fires within their district boundary
- Develop and maintain mutual-aid agreements with neighboring fire departments or districts for wildland and structural fire response support and other emergency response.
 - Actions Implemented
 - A4 - All mutual aid agreements with agencies that border the Rio Verde Fire District are in place.
 - Queen Creek Fire and Medical Department has also supported the Southwest Type 2 Incident Management Team (IMT) with an assigned team member since 2012.
- Arrange for the acquisition, operation, and maintenance of a green-waste disposal site within reasonable proximity to the citizens and encourage the use of the disposal site for all vegetative material removed during wildland fuel treatments on private lands within the WUI.
 - Actions Implemented
 - A2 - Green waste disposal is available to all residents within the Rio Verde Fire District.

- Encourage fire departments and districts to participate in annual multi-agency wildland fire safety training conducted prior to the fire season.
 - Actions Implemented
 - A5 - An all hazard emergency management plan is being developed with the cooperation of MCDEM
 - Continue support for wildfire training available annually through Fire Central
- Develop new water sources developed in key areas
 - Actions Implemented
 - Rio Verde Fire Department identified potential water sources on their golf course for helicopter dipping
 - Scottsdale Fire Department identified potential water sources on their golf course for helicopter dipping
 - Ft. McDowell Fire Department will continue to work with Goldfield community to improve water supplies
 - Identify helicopter dip sites in the vicinity of the communities of Goldfield and Sunflower

2. Promote Community Involvement and Improved Public Education, Information, and Outreach

The Core Team developed recommendations for implementing public outreach programs to help create a citizenry that was informed of wildfire danger and supportive of actions designed to reduce the number and effects of wildland fire incidents. The goal, as stated in the 2010 MCCWPP, is to “have residents support concepts of Firewise landscaping and naturally functioning wildland systems through restoration management and rapid response to wildland fire.” The components of the public outreach recommendations include the following:

- 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 districts, and the development of specific promotional materials by Maricopa County.
 - Actions Implemented
 - A3 - Within the Rio Verde Fire District a fire awareness program is in place with annual community fire safety meetings.
- Place fire-danger information signs on major access roads throughout the WUI. Community bulletins and other public service announcements concerning wildfire threat and preparedness should be developed with assistance from ASFD, BLM, and Maricopa County.
 - Actions Implemented
 - A7 - Roadside fire danger signs are in place for the Rio Verde Fire District.
- Replace and maintain fencing adjacent to high-use and illegal off-road-vehicle use areas within or adjacent to the WUI.

- Actions Implemented
 - I4 - Coordinated with the Cave Creek Ranger District to construct new fencing north and south of the Rio Verde Ranch to control and direct off road vehicle use along the West bank of the Rio Verde river riparian area.
- Improve dispatch and alerting capabilities by establishing a community emergency alert system. The County and local communities will continue to jointly investigate an emergency contact autophone redial system for emergency public communication.
 - Actions Implemented
 - Queen Creek Fire and Medical Department added a new VHF mobile radio to Tender 411 that is field programmable and cloneable.
 - E3 - The Rio Verde Fire District purchased 3 new multi-band King radios for wildland communications.
- Provide enhanced and coordinated firefighting training and equipment, such as personal protective equipment (PPE) and second-generation fire shelters, for newly certified wildland firefighters and volunteer firefighters.
 - Actions Implemented
 - Queen Creek Fire and Medical Department instituted annual department-wide wildland urban interface training in 2012. The training is department designed and area specific.
 - Through a combination of new hires and existing personnel receiving additional training, Queen Creek Fire and Medical has increased its number of wildland trained personnel (S130/S190) from two in 2010 to six in 2014.
- Assist in implementing a Firewise Communities/USA Recognition program in communities where the program is supported by the local fire departments and districts. The Firewise Communities approach emphasizes community and individual responsibility for safer home construction and design, landscaping, and maintenance. The Core Team will also help identify high-priority communities that would most benefit from a Firewise Communities program.
 - Actions Implemented
 - Currently there are four communities in Maricopa County that have the Firewise designation (one in Anthem, one in Scottsdale and one in Rio Verde and one on Tonto Verde).
 - The ASFD is supporting several communities that are in the process of becoming Firewise communities.

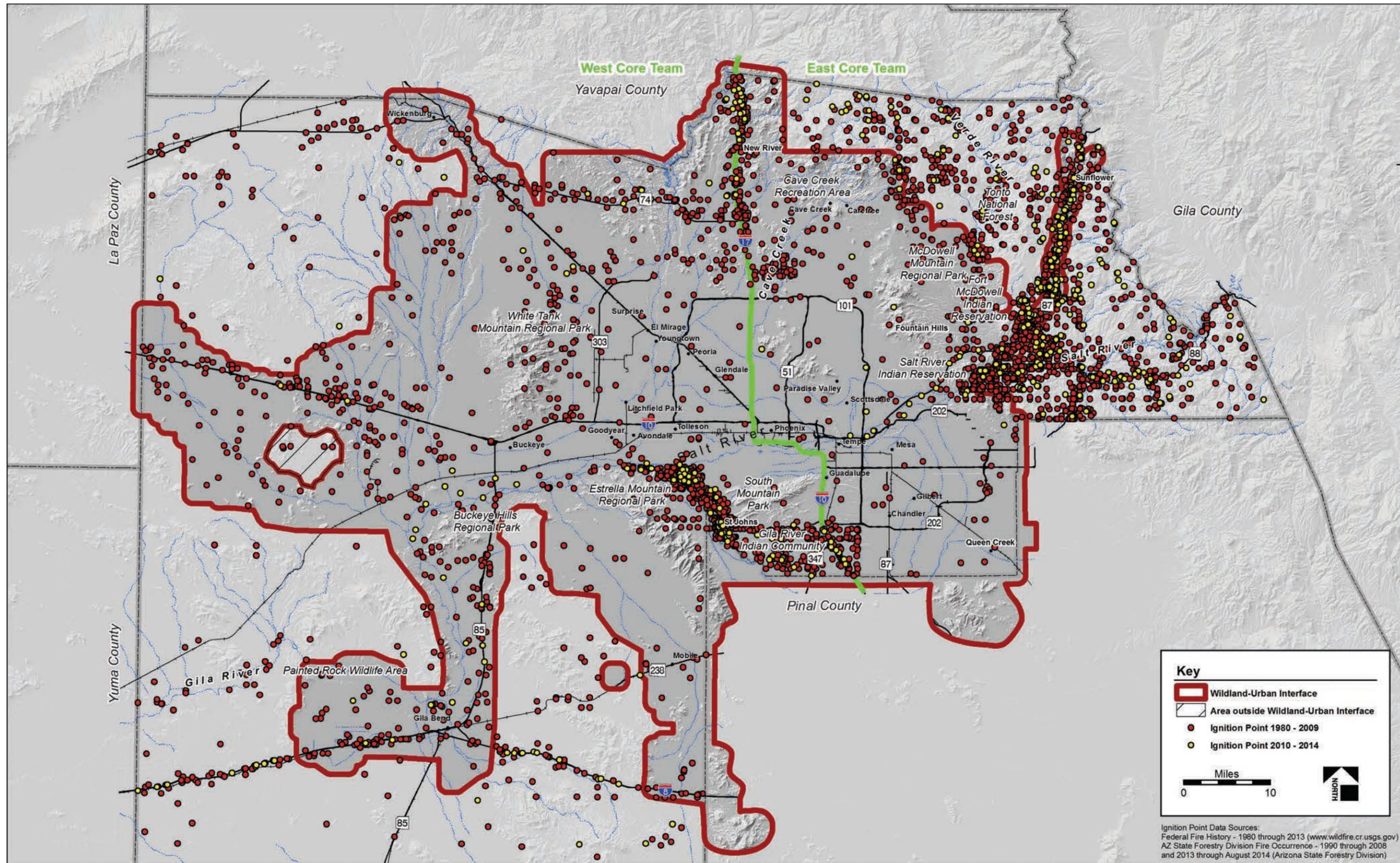


Figure 2.2. Wildfire Ignitions Occurring within or adjacent to the Maricopa County WUI from 1980 through 2009 and 2010 through early September 2014

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III. ACTION RECOMMENDATIONS AND IMPLEMENTATION

The Core Planning Team developed action recommendations during the 2010 planning process that are necessary to meet the MCCWPP goals and objectives. The series of recommendations are intended to reduce structural ignitability, improve fire prevention and suppression, and enhance public outreach.

At the end of each year, projects implemented from the 2010 MCCWPP action recommendations were to be monitored for effectiveness of meeting MCCWPP objectives. The Core Planning Team envisioned that for the life of the MCCWPP, recommendations for additional projects would be made for each future year on the basis of project performance from the previous implemented projects. During the Five-Year Update the action recommendations within the 2010 MCCWPP were reviewed for current status. Action recommendations that have been completed are to be replaced by new priority actions while those that have not been completed will remain a priority. The table below reflects the current status of 2010 action recommendations and includes new priority recommendations. The Core Planning Team is committed to working toward implementation of the 2014 Action Recommendations presented below through 2020.

Table 3.1 displays the 2014 priority for constructing firebreaks and landscape wildland fuel treatments within the WUI as recommended by the Core Planning Team. Table 3.2 identifies wildland fuel reduction projects implemented from 2010 through 2014.

Table 3.1. 2014 Action Recommendations for Wildland Fuel Modification

Management Area ^a	Location and Description	Project Partner	Estimated Treatment Cost ^b	Status
SF2	Lands along SR 87 to the south of the community of Sunflower	MCDEM, ASFD, and TNF	2,153 high-risk acres, 30% of lands to be treated over 3 years estimated to be 215 acres/year in FY 2011–14 = \$72,250.00/year; cost estimated to average \$350.00/acre on federal, ASFD, and private lands	Continue priority to 2019
R3	Lands along the I-10 corridor, south of the community of New River	MCDEM, ASLD, ASFD, and Daisy Mountain Fire District	1,412 high-risk acres, 30% of lands to be treated over 3 years estimated to be 140 acres/year in FY 2011–14 = \$49,000.00/year; cost estimated to average \$350.00/acre on federal, ASLD, and private lands	Continue priority to 2019
GRIC1	Gila River corridor west of St. Johns	MCDEM, Gila River Indian Community, and Bureau of Indian Affairs Pima Agency	8,180 high-risk acres, 30% of lands to be treated (riparian acres) over 3 years estimated to be 90 acres/year in FY 2011–14 = \$315,00.00/year; cost estimated to average \$350.00/acre on tribal lands	SRP right-of-way fuels reduction completed. Remains a priority to 2019.
GB2	Gila Bend Valley north of the community of Gila Bend	MCDEM, ASFD, BLM, and Gila Bend Fire District	403 high-risk acres, 30% of lands to be treated (riparian acres) over 3 years estimated to be 40 acres/year in FY 2011–14 = \$14,000.00/year; cost estimated to average \$350.00/acre on private lands	Continue priority to 2019

Table 3.1. 2014 Action Recommendations for Wildland Fuel Modification

Management Area ^a	Location and Description	Project Partner	Estimated Treatment Cost ^b	Status
Firebreak maintenance	1- to 2-year rotating maintenance of fine and light fuels in Firebreaks SF1, NR2, GR4, and GB2	ASLD, ASFD, CNF, TNF, MCDEM, and participating fire departments and districts	500 acres/year of light understory fuel treatments in excess of 4 acres treated/10-hour day at \$830.00/day costs = \$415,000.00/year	Land within Rio Verde Fire District is on a 2 year rotating maintenance plan Continue priority to 2019

^a SF = Sunflower; NR = New River; GRIC = Gila River Indian Community; GB = Gila Bend.

^b Total acres to be treated during the life of the plan; one-third of acres estimated to be treated based on site-specific analysis, which will determine actual acres available for treatment in each area.

Table 3.2. Wildland Fuel Reduction Projects Implemented 2010–2014

Management Area ^a	Location and Description	Project Partner	Treatment	Status
MA 11	McDowell Mtn. Regional Park	Rio Verde FD, MCDEM, ASFD	East Border McDowell Mt Park, Northern fence line park boundary	Completed/ ongoing
RV1	Lands north and east on Fort McDowell Indian Community	Rio Verde FD, MCDEM, ASFD	Common and riparian areas, Rio Verde Ranch, Eastern border of McDowell Mt Park,	Completed/ ongoing
RV1	Lands north and east on Fort McDowell Indian Community	Rio Verde FD, MCDEM, ASFD	Western border of Tonto Verde	Completed/ ongoing
GRIC6, GRIC5, GRIC3	Lands north of Beltline Road to north boundary of GRIC Lands north of Beltline Road to north boundary of GRIC Lands along SR 347 east and west of I-10 corridor to the tribal boundary	GRIC, SRP	Fuel reduction in SRP ROW	Completed/ ongoing
PV1	Municipality of Paradise Valley	Paradise Valley FD	Washes mapped for hazard fuels, Risk assessment on Mummy Mt Preserve, Ordinance prohibiting fireworks in Mummy Mt Preserve	Completed/ ongoing
FMD1	Tribal trust lands of Fort McDowell Indian Community	Fort McDowell Yavapai Nation FD	Fort McDowell RD, We Ko Pa Trail, Verde River north of Fort McDowell Yavapai Nations Farm	Completed/ ongoing
FH1	Town of Fountains Hills	Fountain Hills FD, ASFD, MCDEM	Ashbrook Wash, Balboa Wash	Completed/ ongoing
PHX1	North of I-10/I-17 junction, east of Tolleson, west of I-17 north to the community of New River	MCDEM, ASFD	Addition of Anthem Firewise Community	Completed/ ongoing
S2	Lands north of Salt River Pima-Maricopa Indian Community and SR 101 corridor	Scottsdale FD, ASFD, MCDEM	Addition of Ancala West Firewise Community, Desert Diamond Estates	Twelve acres thinned

Table 3.2. Wildland Fuel Reduction Projects Implemented 2010–2014

Management Area^a	Location and Description	Project Partner	Treatment	Status
S3	Lands adjacent to west boundary of McDowell Mtn.	Scottsdale FD, ASFD, MCDEM	Vegetation thinning in washes	Approximately five acres thinned
BE1	Lands in the NE corner of the municipal boundary	Buckeye FD	Vacant residential parcels in Buckeye	Completed/ongoing
BEV2, BEV3	Lands SE of Buckeye adjacent to north boundary of Buckeye Hills Regional Park Lands west of Buckeye Regional Park, including Gila and Hassayampa River confluence	BLM	Salt Cedar reduction in the Gila River corridor	Approximately 423 acres
QC1	Municipality of Queen Creek	Queen Creek and Flood Control District of Maricopa County	Queen Creek and Sonoqui wash channel enhancement	Completed
LP1	Municipality of Litchfield Park	Litchfield FD	La Loma Ranch	Approximately 20 acres
GY4	Lands south of the city of Goodyear, including portions of Estrella Mtn. Regional Park and Gila River	MCDEM, BLM, Goodyear FD	Corgett Wash adjacent to Estrella Mountain Park development	Completed

^a MA = Management Area, RV = Rio Verde, GRIC = Gila River Indian Community, PV = Paradise Valley, FMD = Fort McDowell Yavapai Nation, FH = Fountain Hill, PHX = Phoenix, S = Scottsdale, BE = Buckeye, BEV = Buckeye Valley, QC = Queen Creek, LP = Litchfield Park, GY = Goodyear, SF = Sunflower; NR = New River; GRIC = Gila River Indian Community; GB = Gila Bend.

A. Identified Action Items for Protection Capability and Reduced Structural Ignitability

The Core Team and collaborators have worked collaboratively to evaluate; maintain; and, where necessary, upgrade community wildfire preparation and response facilities, capabilities, and equipment. Table 3.3 lists the 2014 and remaining 2010 action recommendations proposed by the Core Team for consideration by individual fire departments and districts for structural ignitability and public outreach within their respective jurisdictions.

The MCDEM and the Core Planning Team has implemented public outreach and education programs for residents to heighten awareness and understanding of the threat that wildland fire poses to the communities. The MCCWPP 2014 priority recommendations for promoting community involvement awareness and participation in fire prevention are presented in Table 3.4.

Table 3.3. 2014 Action Recommendations for Structural Ignitability and Public Outreach

Project Partner	Project	Specific Recommendation	Estimated Cost	Timeline	Status
MCDEM and Queen Creek Fire Department	E1 —Wildland Fire Protection and Reduced Ignitability	Purchase one Type 3 fire engine for use by Queen Creek Fire Department	New acquisition with standard equipment \$280,000.00	Begin grant applications in 2010; purchase in 2011	Decision made not to purchase
MCDEM and Sun Lakes Fire District	E2 —Wildland Fire Protection and Reduced Ignitability	Purchase one Type 6 fire engine for use by Sun Lakes Fire District	New acquisition with standard equipment \$131,000.00	Begin grant applications in 2010/2011; purchase in 2011/2012	Completed
MCDEM, TNF, CNF, ASFD, ASLD, and associated fire departments and districts	A1 —Wildland Fire Protection and Reduced Ignitability	Construct a series of 5,000-gal water-storage facilities located strategically throughout residential areas	Install water-storage facilities/year: \$5,000.00/facility	Locate and install one water-storage facility in 2010	Continue priority to 2019
MCDEM and Gilbert Fire Department	A2 —Enhanced Public Education, Information, and Outreach	Wildfire Public Education Brochures	Produce and publish community specific wildfire informational brochures	Begin grant applications in 2010; continue on an ongoing basis in 2011	Completed
MCDEM and Rural/Metro, Cave Creek, and Carefree Fire Departments	E3 —Wildland Fire Protection and Reduced Ignitability	Obtain one Type 6 brush truck for wildland fire response within the Cave Creek and Carefree communities	New acquisition with standard equipment \$131,000.00	Begin grant applications in 2010; purchase in 2011	Rural Metro has placed one Type 6 from fleet at Rural Metro's fire station in Cave Creek
MCDEM, TNF, CNF, ASFD, ASLD, and associated fire departments and districts	E4 —Wildland Fire Protection and Reduced Ignitability	Obtain 10 handheld programmable radios for firefighter dispatch and communication	King digital programmable handheld radios, \$1,380.00/radio: \$13,800.00	Obtain grant funding in 2010	The Rio Verde Fire District purchased 3 new multi-band King radios for wildland communications
MCDEM, TNF, TNF, ASFD, ASLD, and associated fire departments and districts	A2 —Enhanced Public Education, Information, and Outreach	Work with land agencies for the acquisition, operation, and maintenance of a green-waste disposal site within reasonable proximity to community	Locate and coordinate with land management agency; excavate pit and fence: \$20,000.00	Begin planning with agencies in FY 2009/10; implement in FY 2010/11	Green waste disposal is available to all residents within the Rio Verde Fire District Continue priority to 2019
MCDEM, TNF, CNF, ASFD, ASLD, and associated fire departments and districts	A3 —Enhanced Public Education, Information, and Outreach	Develop a fire-safety awareness program for community groups	Promote and conduct a community fire-awareness day at local fire departments and districts: \$2,000.00	Solicit funds for promotion, brochures, and event materials in 2014; conduct in 2015	Continue priority to 2019
		Create fire-safety and fire-awareness posters for public places	Development, printing, and distribution costs: \$5,000.00	Solicit funds for production and printing in 2014; publish and post in 2014	Rio Verde FD has a fire awareness program with annual community fire safety meetings. Continue priority to 2019

Table 3.3. 2014 Action Recommendations for Structural Ignitability and Public Outreach

Project Partner	Project	Specific Recommendation	Estimated Cost	Timeline	Status
MCDEM and Glendale Fire Department	E5 —Wildland Fire Protection and Reduced Ignitability	Obtain one Type 6 brush truck and a water tender for wildland fire response within Glendale	New acquisition with standard equipment \$131,000.00; 1,500-gal water tender, 4-wheel drive: \$186,000	Begin grant applications in 2010; purchase in 2011	Continue priority to 2019
MCDEM and Sun City West Fire District	E6 —Wildland Fire Protection and Reduced Ignitability	Obtain one Type 3 engine and a water tender for wildland fire response within the Sun City West Fire District	New acquisition with standard equipment \$215,000; 2,500 gal water tender. \$350,000: 1,000 gpm/600 gal Type 3 Engine.	Continue grant applications, Solicit/acquire Capital funding for purchase in 2015.	These units would respond from new fire station 104 under construction and opening in Spring 2015
MCDEM and Paradise Valley Fire Department	E7 —Wildland Fire Protection and Reduced Ignitability	Purchase two water tenders for use by Paradise Valley Fire Department	New acquisition with standard equipment \$225,000.00; 3,600-gal water tender	Begin grant applications in 2015; purchase in 2017	2014 update addition
MCDEM, ASFD, BLM, Buckeye FD	A6 — Wildland Fire Protection and Reduced Ignitability	MCDEM, BLM, ASFD meet annually to pre-plan fire attack, areas of needed fuels mitigation and monitoring of treated areas in BE1, BE2, and BE3	Staff hours anticipated to be no more than 40 hours per agency staff annually for pre-planning	Establish in spring 2015 and annually each spring thereafter	2014 update addition
MCDEM, ASFD, CNF, TNF, BLM, APS, SRP, and associated fire departments and districts	A7 —Work with SRP and APS on vegetative management treatments within and adjacent to utility corridors where opportunities exist	APS will coordinate annual ROW vegetative management treatment coordination meeting.	Staff time, coordination efforts, research, and meetings: \$5,000.00	Begin planning in FY 2010/11; implement in FY 2012	Continue priority to 2019

^a Projects are designated by project type (E = equipment; A = administrative) but not ranked in order of importance.

Table 3.4. 2014 Additional Recommendations for Enhanced Public Education, Information, and Outreach

Project Partner	Project^a	Equipment/ Expense	Timeline	Status
MCDEM, CNF, TNF, BLM, ASFD, and associated fire departments and districts	A8 —Establish and maintain roadside fire-danger warning signs and other informational and directional road signs along major roads as determined by the Maricopa County Fire Officers Association	Construction and placement: \$5,000.00	Construct and implement in FY 2010/11	Continue priority to 2019
	A9 —Create and distribute community bulletins	Development, printing, and distribution costs: \$5,000.00	Develop in FY 2010; distribute continually	Continue priority to 2019
	I2 —Acquire Redzone, or equivalent software, and field data recorders or PDAs (personal digital assistants) to complete home fire assessments and implement fire-safe recommendations	Software and data recorder: \$1,300.00 Assessment completion: \$2,000.00	Acquire software and complete assessments in FY 2010/11; implement recommendations in FY 2011	Continue priority to 2019
	I3 —Encourage private businesses that perform Firewise land treatments; encourage market development of WUI by-products from vegetative fuel mitigation programs	Marketing plan to be developed	Initiate community marketing planning meetings in FY 2011	Continue priority to 2019
	I4 MCDEM, CNF, TNF, BLM, ASFD, and associated fire departments and districts Replace and maintain fencing adjacent to high OHV (off-highway vehicle) use areas	Assess in 2011, initial plan for 1 mile of new or repaired fencing	Estimate \$6,000.00m per mile of standard 4-wire fencing	Cave Creek Ranger District and Rio Verde FD constructed fencing north and south of the Rio Verde Ranch to control and direct off road vehicle use along the West bank of the Rio Verde river riparian area.
MCDEM, CNF, TNF, BLM, ASFD, and associated fire departments and districts	A10-Firewise Garden – Develop one or more Firewise Gardens to serve as a visual tool for potential Firewise Communities.	The BLM would pay for the plants and installation and the organizations would provide upkeep.	Initiate planning to locate site in 2015, implement in 2015	2014 update addition
MCDEM, CNF, TNF, BLM, ASFD, and associated fire departments and districts	A11- Firewise Community Recognition Program material for WUI Communities	Funding for materials, staffing community meetings and support	Continue to promote Firewise Communities USA program to WUI communities in 2015	2014 update addition

^a Projects are designated by project type (A = administrative; I = infrastructure) but not ranked in order of importance.

IV. MONITORING PLAN

Monitoring is essential to ensure that the MCCWPP goals are met. The MCCWPP administrators, local fire departments and districts, MCDEM, ASFD, TNF and BLM agreed to monitor the progress of the of the 2010 MCCWPP action recommendations to determine the effectiveness of completed and ongoing projects within and adjacent to the WUI. Effective monitoring of the MCCWPP and documentation of projects and goals achieved allows for a cohesive CWPP and assists in determining future projects that are in line with the goals and objectives of the MCCWPP.

The CWPP Working Group is tasked with identifying appropriate grant and other funding opportunities necessary to implement the action recommendations of the MCCWPP. Grant information should be routinely searched to identify updated grant application cycles and requirements.

The Maricopa County Annual Report form which is located in Section 5, page 112, of the 2010 MCCWPP is updated and presented in Table 4.1. The Annual Report form outlines the performance measures that the MCCWPP Working Group uses to assess MCCWPP performance against goals for any planning year or span of years. In addition to monitoring the listed performance measures the MCCWPP administrators assess the current status of wildland fuel hazards and include any new or developing issues not covered by the 2010 MCCWPP. As new issues arise, recommendations to address needs are identified, and the MCCWPP is updated as necessary to meet the MCCWPP goals.

Table 4.1. Summary of Community Wildfire Protection Goals Completed 2010–2014

Goal	Performance measure
Improve fire prevention and suppression	<p>Reduction of wildland fire occurrence and acres burned (unplanned) in the WUI:</p> <ul style="list-style-type: none"> • Green-waste disposal sites available in high-risk communities. <ul style="list-style-type: none"> • In place in the Rio Verde FD • Type 3 fire engine acquired by Queen Creek Fire Department. <ul style="list-style-type: none"> • Queen Creek FD will not move forward remove from priority recommendation • Type 6 brush truck acquired for use in Carefree and Cave Creek sub-WUIs. <ul style="list-style-type: none"> • Completed • Type 6 brush truck acquired for use in Sun Lakes sub-WUI. <ul style="list-style-type: none"> • Completed • Effectiveness monitoring of fire prevention and suppression will include the following: <ul style="list-style-type: none"> —Acres burned and degree of severity of wildland fire <ul style="list-style-type: none"> • Ongoing —Percentage of wildland fire controlled on initial attack <ul style="list-style-type: none"> • Ongoing —Number of homes and structures lost to wildland fire <ul style="list-style-type: none"> • Ongoing • New water sources developed in key areas. • Consistent fire training in use. • Wildland firefighter PPE (personal protection equipment) acquired as needed. <ul style="list-style-type: none"> • Ongoing

Table 4.1. Summary of Community Wildfire Protection Goals Completed 2010–2014

Goal	Performance measure
Reduce hazardous vegetative fuels	<p>Effective treatment of high-risk areas by acre:</p> <ul style="list-style-type: none"> • Number of treated acres of nonfederal WUI lands that are in Condition Class 2 or 3 are identified as high priorities by the Maricopa County MCCWPP and should be moved to Condition Class 1 or another acceptable level of wildland fuel loading and continuity. <ul style="list-style-type: none"> • Ongoing • Acres treated to acceptable fuel levels within priority treatment management areas. <ul style="list-style-type: none"> • Ongoing • Total acres treated through any fuel-reduction measures, including prescribed fire, that are conducted in, or adjacent to, the WUI. The change of condition class should be determined for small projects or treatment areas through the use of the LANDFIRE database. <ul style="list-style-type: none"> • Ongoing
Restore watershed health	<p>Acres of fuel reduction or watershed enhancement treatments that meet restoration treatment guidelines for riparian habitats:</p> <ul style="list-style-type: none"> • Coordination with and support of MCDEM, ASFD, ASLD, TNF, and BLM in implementing and determining social, economic, and environmental effects of riparian restoration treatments (Treatments 7 and 9, see Table 3.1 in Mitigation Plan). <ul style="list-style-type: none"> • 0 acres • Acres of saltcedar-invaded riparian areas identified and undergoing restoration treatments. <ul style="list-style-type: none"> • Wash Channelization in Queen Creek • Fuel reduction in riparian areas in Rio Verde and Tonto Verde • Paradise Valley fuels reduction in washes • Fountain Hills fuel reduction in Ashbrook and Balboa Washes
Promote community involvement	<p>Initiation of public outreach programs:</p> <ul style="list-style-type: none"> • Countywide community MCCWPP Working Group initiated. <ul style="list-style-type: none"> • Completed in 2011 • Public outreach programs and promotions implemented to enhance volunteer efforts to reduce hazardous fuels. <ul style="list-style-type: none"> • Initialed in Rio Verde • Number and areas (community or dispersed residents) of private landowners supporting and implementing fuel reduction projects. <ul style="list-style-type: none"> • Four Firewise communities other communities in the process • MCDEM and local fire departments and districts developed and implemented evacuation plans for identified high-risk areas. <ul style="list-style-type: none"> • Ready-Set-Go is being implemented • Roadside fire-danger warning signs in English and Spanish installed at strategic points within the WUI. <ul style="list-style-type: none"> • English signage in Rio Verde • Green-waste disposal and processing site secured and operational. <ul style="list-style-type: none"> • Available since 2011 • Fire-awareness articles printed in local newspapers. <ul style="list-style-type: none"> • None to date • Fire-safety awareness program, posters, and information available in public places. <ul style="list-style-type: none"> • Initialed in 2011
Encourage economic development	<p>Wood-products industry growth and diversification to use all sizes of material removed by fuel-reduction treatments:</p> <ul style="list-style-type: none"> • Number of value-added wood products developed by the community. <ul style="list-style-type: none"> • None to date • Number of new markets (local firewood sales) for local products created. <ul style="list-style-type: none"> • None to date

APPENDIX A. CUMULATIVE RISK LEVELS, BY PERCENTAGE OF EACH COMMUNITY WUI

Cumulative Risk Levels, by Percentage of Each Community WUI

Maricopa County CWPP Community Sub-WUI	High Risk (%)	Acres	Moderate Risk (%)	Acres	Low Risk (%)	Acres	Total Acres
Aguila	0	0	17	728	83	3,692	4,420
Apache Junction							3,239*
Wickenburg	<1	34	34	12,837	65	24,338	37,209
Circle City/Morristown	<1	42	45	23,029	55	28,648	51,719
Buckeye	2	6303	66	190,471	32	92,722	289,497
Peoria	3	3,994	44	69,920	53	82,569	156,483
Chandler	1	568	29	12,317	70	30,356	43,241
Tonopah Valley	1	601	72	69,087	27	26,180	95,868
El Mirage	3	228	19	1,392	78	5,709	7328
Buckeye Valley	0	0	73	56,010	27	20,692	76,703
Gila Bend	1	1,015	73	65,602	26	23,719	90,336
Harquahala	1	1,247	74	91,175	25	31,015	123,436
Goodyear	1	998	70	112,438	29	47,723	161,159
Youngtown	1	8	25	374	74	1,123	1,503
Gila River Indian Community	24	42,324	53	94,066	23	39,725	176,114
Phoenix	5	18,568	44	157,858	51	185,007	361,433
Cave Creek	0	0	52	16,437	48	15,122	31,560
Sunflower	18	4,536	65	16,033	17	4,252	24,820
Scottsdale	4	5,642	58	72,237	38	48,307	126,185
Tempe	<1	5	13	3,062	87	20,832	23,989
Rio Verde	18	5,740	58	18,744	24	7,616	32,100
Mesa	3	4,012	40	46,981	57	67,805	118,798
Gilbert	<1	191	29	14,013	71	34,228	48,432
Guadalupe	0	0	1	10	99	689	699
Queen Creek	1	254	36	9,032	63	15,895	25,181
Carefree	<1	37	67	3,952	33	1,938	5,927
Paradise Valley	1	133	51	5,409	48	5,037	10,579
Fountain Hills	1	116	63	7,836	36	4,563	12,515
Salt River Pima-Maricopa Indian Community	5	2,968	57	32,475	38	21,866	57,309
Avondale	6	2,585	63	27,968	31	13,983	44,537
Litchfield Park	7	164	31	659	62	1,360	2,183

Cumulative Risk Levels, by Percentage of Each Community WUI

Maricopa County CWPP Community Sub-WUI	High Risk (%)	Acres	Moderate Risk (%)	Acres	Low Risk (%)	Acres	Total Acres
Glendale	4	2,199	25	15,666	71	43,882	61,747
Fort McDowell Indian Community	11	2,834	42	10,355	48	11,937	25,126
Surprise	3	2,670	63	48,967	33	25,898	77,535
Sun City	1	120	9	726	90	8,254	9,100
Sun City West	7	1310	46	8004	47	8203	17,517
Sun Lakes	5	210	29	1,121	66	2,533	3,864
Tonto Hills	11	55	19	87	70	338	480
Tolleson	<1	11	69	2,727	30	1,230	3,967
Wittmann	1	189	91	14,547	8	1,308	16,044
New River	5	3,769	45	36,469	50	40,568	80,807
Management Area 1	2	816	78	27,502	20	7,116	35,433
Management Area 2	2	1,385	84	60,714	14	10,110	72,209
Management Area 3	0	0	72	37,765	36	19,006	52,771
Management Area 4	0	0	72	19,636	28	7,677	27,313
Management Area 5	0	0	74	21,261	26	7,514	28,775
Management Area 6	<1	70	57	50,048	42	36,691	86,810
Management Area 7	0	0	84	18,934	16	3,655	22,589
Management Area 8	0	0	78	44,611	22	12,791	57,402
Management Area 9	1	322	38	17,129	61	27,541	44,992
Management Area 10	3	1,197	82	37,155	15	6,547	44,898
Management Area 11	1	513	79	31,179	20	7,730	39,422
Management Area 12	2	270	49	11,118	49	11,095	22,483
Total*	4	120,252	57	1,749,492	39	1,202,717	3,072,461

Source: Logan Simpson Design Inc.

*Treatment areas not equal to area risk assessment due to data-rounding errors.

APPENDIX B. IDENTIFIED TREATMENT MANAGEMENT UNITS

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
Avondale	AD1	M	City of Avondale north and south of I-10	1,2,3,4,7,9	25,856	424	3,861	21,388	184
	AD2	M	Lands south of AD1, including portions of Estrella Mtn. Park	1,2,3,8	8,958	2	2,631	2,273	6,325
Aguila	AG1	L	Lands immediately west of Wickenburg boundary	1,2,3,8,9	4,760	0	4,271	490	0
Apache Junction^b	AJ1	L	Municipal boundary of Apache Junction in Maricopa County	1,2,3	3,329				
Buckeye	BE1	M	Lands in the NE corner of the municipal boundary	1,2,3,4,7,8,9	56,203	13,989	4,341	37,368	0
	BE2	M	Lands north of, and adjacent to, west boundary of White Tank Mtn. Regional Park	1,2,3,4,7,8,9	48,435	1,672	14,469	32,295	0
	BE3	M	Lands NE of community center	1,2,3,4,7,8,9	41,963	1,843	6,261	33,859	0
	BE4	M	Lands NE of town and south of White Tank Mtn. Regional Park	1,2,3,7,9	40,655	10,861	10,546	19,248	0
	BE5	L	Lands SW of town and north of Gila River, including Palo Verde Nuclear Generating Station	1,2,3,6,8	23,306	0	1,740	21,566	0
	BE6	L	Lands SE of town, north of Gila River	1,2,3,8	25,684	0	1,257	24,427	0
	BE7	L	Lands SE of town, including Gila River	1,2,3,4,5,6, 7, 9	28,798	5,289	1,511	21,998	0
	BE8	M	Lands south of Buckeye Hills Regional Park within and east of Gila River	1,2,3,4,5,6, 7, 9	25,818	7,182	4,727	13,909	0
Buckeye Valley	BV1	M	Lands west of the town of Buckeye adjacent to Hassayampa River	1,2,3,4,5,6, 7, 8,9	36,681	357	12,133	25,191	0
	BV2	L	Lands SE of Buckeye adjacent to north boundary of Buckeye Hills Regional Park	1,2,3,4,5,6, 7, 8,9	13,329	1,746	78	11,505	0
	BV3	M	Lands west of Buckeye Regional Park, including Gila and Hassayampa River confluence	1,2,3,4,5,6, 7, 8,9	26,893	11,304	5,980	9,609	0

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		
							Trust Acres	Nonfederal Acres	Tribal Acres
Cave Creek	CC1	M	Town of Cave Creek, Cave Creek Recreation Area, north to TNF boundary	1,2,3,4,5,8	24,043	2,718	8,556	12,769	0
	CC2	L	Lands NE of Cave Creek to TNF boundary	1,2,3,4,5, 8	7,551	2,424	676	4,452	0
Circle City/Morristown	CCMT1	L	Town of Circle City/Morristown and immediate surrounding lands	1,2,3,4,5, 8	52,608	9,100	28,723	14,785	0
Carefree	CF1	M	Town of Carefree and immediate surrounding lands	1,2,3,4,5, 8	5,927	0	79	5,849	0
Chandler	CH1	L	Municipality of Chandler	1,2,3	43,241	0	90	43,151	0
El Mirage	EL1	L	Municipality of El Mirage	1,2,3	7,328	66	3	7,259	0
Fountain Hills	FH1	M	Town of Fountains Hills	1,2,3,4,8	12,515	0	0	12,486	29
Fort McDowell Indian Community	FMD1	M	Tribal trust lands of Fort McDowell Indian Community	1,2,3,4,7,8,9	25,126	76	42	152	24,855
Gila Bend	GB1	M	Lands SE of Gila Bend south of I-8	1,2,3,4,5,8	20,877	12,719	1,306	6,852	0
	GB2	M	Lands NE of Gila Bend north of I-8	1,2,3,4,5,8	11,886	4,073	6,445	1,368	0
	GB3	M	Lands NW of Gila Bend, primarily agricultural lands	1,2,3,5,7,8,9	11,393	1,265	1,746	8,159	224
	GB4	M	Lands in western municipal boundary of Gila Bend and north and south of I-8	1,2,3,5,7,8,9	30,441	8,895	2,424	18,938	184
	GB5	M	Lands north of Gila Bend along SR 85 corridor	1,2,3,5,7,8,9	17,508	6,245	3,601	7,662	0
Glendale	GD1	L	Lands on western municipality boundary	1,2,3,7,9	25,797	2,253	196	23,349	0
	GD2	L	Lands in eastern municipality, including SR 60 and SR 303 corridors	1,2,3,7,9	16,924	0	60	16,864	0
	GD3	L	Lands north of city center, north along the municipal boundary to SR 101	1,2,3,7,9	19,027	10	952	18,064	0
Gilbert	GIL1	L	Municipality of Gilbert	1,2,3,7,9	48,432	2	61	48,369	0

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		
							Trust Acres	Nonfederal Acres	Tribal Acres
Gila River Indian Community	GRIC1	M	Tribal lands adjacent to Gila River, NW of St. Johns	1,2,3,5,6,7,8,9	26,135	0	40	854	25,251
	GRIC2	M	Tribal lands west of St. Johns on east-facing slopes of Estrella Mtns.	1,2,3,5,6,7,8,9	24,827	11,962	3,241	674	8,950
	GRIC3	H	Community of St. Johns and surrounding Gila River riparian corridor	1,2,3,5,6,7,8,9	13,596	0	14	102	13,480
	GRIC4	M	Lands SW of St. Johns, along Gila River to Pinal County east to I-10 corridor	1,2,3,5,6,7,8,9	37,211	626	3	518	36,064
	GRIC5	M	Lands north of Beltline Road to north boundary of GRIC	1,2,3,5,6,7,8,9	17,712	0	0	0	17,752
	GRIC6	H	Lands along SR 347 east and west of I-10 corridor to the tribal boundary	1,2,3,5,6,7,8,9	18,426	0	0	0	18,426
	GRIC7	M	Lands east of I-10 corridor south of Maricopa County along Gila River riparian corridor	1,2,3,5,6,7,8,9	40,947	234	0	1,057	39,656
Guadalupe	GU1	L	Municipality of Guadalupe	1,2,3	699	0	0	699	0
Goodyear	GY1	L	Lands at the north municipal boundary north of I-10 corridor	1,2,3	12,223	0	1,572	10,651	0
	GY2	L	Community of Goodyear south of I-10 corridor	1,2,3	13,824	0	101	13,723	0
	GY3	M	Lands south of the city of Goodyear along west boundary of Estrella Mtn. Regional Park, including the Gila River	1,2,3, 4,7,9	15,674	530	734	14,410	0
	GY4	M	Lands south of the city of Goodyear, including portions of Estrella Mtn. Regional Park and Gila River	1,2,3, 4,7,9	14,453	137	8,765	5,552	0
	GY5	M	Lands south of Estrella Mtn. Regional Park to the municipal boundary, including the community of Mobile and SR 238	1,2,3, 4,7,9	105,808	52,477	12,703	40,362	266

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		Tribal Acres
							Trust Acres	Nonfederal Acres	
Harquahala Valley	H1	M	Lands on eastern boundary of WUI along I-10 corridor	1,2,3,4,5,8	61,838	21,038	18,033	22,767	0
	H2	M	Lands south of I-10 corridor, including Harquahala Valley and Centennial Wash	1,2,3,4,5,8	63,240	8,735	7,045	47,460	0
Litchfield Park	LP1	L	Municipality of Litchfield Park	1,2,3	2,183	0	0	2,183	0
Management Area 1	MA1	M	Open lands in NW portion of WUI	1,2,3,4,5,8	36,177	8,717	1,823	25,638	0
Management Area 2	MA2	M	Lands north of I-10 corridor, west of Buckeye city limits	1,2,3,4,5,8	72,563	7,956	6,150	58,457	0
Management Area 3	MA3	M	Lands to east, primarily south of Harquahala Valley and east of Tonopah	1,2,3,4,5,8	53,536	20,605	8,442	24,489	0
Management Area 4	MA4	M	Buckeye Hills Regional Park and surrounding lands west of SR 85	1,2,3,4,5,8	27,753	19,437	6,483	727	0
Management Area 5	MA5	M	Lands south of Buckeye/Arlington Valley along Gila corridor to north of Gila Bend	1,2,3,4,5,8	29,581	14,052	1,167	14,362	0
Management Area 6	MA6	M	Developed lands west of Gila Bend municipal boundaries along I-8 corridor	1,2,3,4,5,8	89,003	26,752	6,808	55,444	0
Management Area 7	MA7	M	Lands adjacent to Santa Cruz River, south of Gila/Santa Cruz River confluence	1,2,3,4,5,7,8,9	23,456	11,524	3,086	8,846	0
Management Area 8	MA8	M	Lands north of I-8 along Santa Cruz River corridor to south of SR 238	1,2,3,4,5,7,8,9	58,727	38,271	1,480	18,976	0
Management Area 9	MA9	L	Lands north of I-8, west of the Santa Cruz River, north to the GRIC boundary	1,2,3,4,5,8	46,440	42,415	2,052	1,970	3
Management Area 10	MA10	M	White Tank Mtn. Regional Park	1,2,3,4,5,8	44,898	0	40,826	4,026	0
Management Area 11	MA11	M	McDowell Mtn. Regional Park	1,2,3,4,5,8	39,953	5,945	20,892	13,095	21

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		
							Trust Acres	Nonfederal Acres	Tribal Acres
Management Area 12	MA12	L	Lands at SE WUI boundary, including portions of San Tan Mtn. Regional Park	1,2,3,4,5,8	22,940	6,617	729	15,579	16
Mesa	ME1	L	City of Mesa south of SR 202/SR 87 to SR 60	1,2,3,4	49,838	126	949	48,252	511
	ME2	M	Lands east of Mesa south of SR 87, including SR 202 corridor	1,2,3,4,5,8	38,318	6,708	4,417	26,945	247
	ME3	M	Lands SE of Mesa north of Queen Creek, including SR 202 corridor	1,2,3,4,5,8	32,165	0	5,239	26,627	0
New River	NR1	L	Lands east of I-17 corridor, adjacent to Cave Creek Recreation Area, north to TNF boundary	1,2,3,4,5,8	41,375	8,739	24,253	8,383	0
	NR2	M	Lands immediately west of I-17, north of the community to New River to the WUI boundary	1,2,3,4,5,8	6,283	2,532	3,521	229	0
	NR3	M	Lands south of the community of New River to north of SR 74	1,2,3,4,5,8	8,859	172	1,937	6,750	0
	NR4	M	Lands north of New River, west of I-17 at Yavapai County boundary	1,2,3,4,5,8	6,158	5,173	78	907	0
	NR5	L	Lands NE of New River, west of I-17	1,2,3,4,5,8	19,512	10,074	5,232	4,206	0
Peoria	PE1	L	Lands north and south of SR 74, northwest of the community of Peoria	1,2,3,4,5,8	31,071	3,366	14,376	13,329	0
	PE2	L	Lands north and south of SR 74, north of the community of Peoria	1,2,3,4,5,8	68,295	23,123	19,382	25,790	0
	PE3	M	Lands north and south of SR 74, east of PE2, north of the community of Peoria	1,2,3,4,5,8	23,794	1,314	11,699	10,780	0
	PE4	M	Lands north and south of SR 74, south of PE3, north of the community of Peoria	1,2,3,4,5,8	11,882	180	844	10,859	0
	PE5	L	City of Peoria	1,2,3	22,323	2	588	21,733	0

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		Tribal Acres
							Trust Acres	Nonfederal Acres	
Phoenix	PHX1	L	North of I-10/I-17 junction, east of Tolleson, west of I-17 north to the community of New River	1,2,3,4,5,8	91,637	2,419	34,608	54,610	0
	PHX2	M	South of Tolleson to South Mtn. Regional Park, including Gila River	1,2,3,4,5,6,7,9	68,295	23,123	19,382	25,790	0
	PHX3	M	South Mtn. Regional Park north of I-10 corridor	1,2,3,4,7,9	60,070	10	12,144	47,915	0
	PHX4	L	North and west of I-17 corridor to north of Cave Creek Road	1,2,3,4,7,9	158,978	819	33,766	124,393	0
Paradise Valley	PV1	L	Municipality of Paradise Valley	1,2,3	10,579	0	0	10,579	0
Queen Creek	QC1	M	Municipality of Queen Creek	1,2,3,5,8	25,457	0	1,547	23,910	0
Rio Verde	RV1	M	Lands north and east on Fort McDowell Indian Community	1,2,3,4,5,6,7,9	10,413	9,098	0	1,301	14
	RV2	L	Lands east of Fort McDowell Indian Community, east of Verde River, north of SR 87	SR 87 corridor to vicinity of Four Peaks Road	5,802	1,552	0	4,205	44
	RV3	M	SR 87 corridor, NE of Verde River	1,2,3,4,5,6,7,9	9,979	8,462	0	1,506	11
	RV4	M	SR 87 corridor to vicinity of Four Peaks Road	3,4,5,8	7,709	7,709	0	0	0
Scottsdale	S1	M	Lands east of Carefree to the TNF boundary to the north and east WUI boundary	1,2,3,5,8	42,332	9,269	13,136	19,926	0
	S2	M	Lands north of Salt River Pima-Maricopa Indian Community and SR 101 corridor	1,2,3,5,8	41,252	0	3,410	37,843	0
	S3	M	Lands adjacent to west boundary of McDowell Mtn. Regional Park and Fountain Hills	1,2,3,5,8	21,467	0	4,603	16,864	0
	S4	L	City of Scottsdale	1,2,3	21,607	62	538	20,144	863
Sun City	SC1	L	City of Sun City	1,2,3	9,100	0	0	9,100	0
Sun City West	SCW1	L	City of Sun City West	1,2,3	17,517	378	3,793	13,346	

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment^a	Total Acres	Federal Acres	State Trust Acres	Nonfederal Acres	Tribal Acres
Sunflower	SF1	M	SR 89 corridor north of Four Peaks Road	2,3,4,5,8	6,901	6,871	0	30	0
	SF2	M	SR 89 corridor immediately south of Sunflower	2,3,4,5,8	6,633	6,408	0	225	0
	SF3	M	Community of Sunflower	2,3,4,5,8	6,954	6,779	0	175	0
	SF4	H	Sunflower along Sycamore Creek	3,4,5,6,7,8,9,	1,320	1,320	0	0	0
	SF5	M	Lands NE of Sunflower, east of SR 87	2,3,4,5,8	5,079	4,868	0	211	0
Sun Lakes	SL1	L	Community of Sun Lakes	1,2,3	3,864	0	0	3,859	4
Salt River Pima-Maricopa Indian Community	SRPMIC 1	M	East of Scottsdale boundary along Gila River	1,2,3,7,9	11,884	0	6	467	11,411
	SRPMIC 2	L	East of Scottsdale boundary, north of Gila River	1,2,3	7,592	0	0	0	7,592
	SRPMIC 3	M	East of Scottsdale boundary, north to the north SRPMIC boundary	1,2,3	7,165	0	0	104	7,061
	SRPMIC 4	M	Northern SRPMIC boundary	1,2,3	10,716	0	0	244	10,472
	SRPMIC 5	M	SRPMIC southern boundary, east along Gila River to east boundary and adjacent lands	1,2,3,7,9	20,200	3,326	0	1,443	15,431
Surprise	SU1	M	NE of the city of Surprise along the US 60 corridor, including Trilby Wash Basin	1,2,3,5,7,8,9	32,117	254	11,558	20,306	0
	SU2	M	Lands NE of the city of Surprise along US 60 corridor	1,2,3,5,8	20,455	0	3,476	16,978	0
	SU3	L	City of Surprise	1,2,3	24,964	0	97	24,867	0
Tempe	T1	L	Municipality of Tempe	1,2,3	23,898	84	555	23260	57
Tonto Hills	TH1	L	Tonto Hills subdivision	1,2,3	480	39	0	442	0
Tonopah Valley	TO1	M	Lands south of I-10, east of community of Tonopah, adjacent to Palo Verde Nuclear Generating Station	1,2,3,4,5,8	49,982	6,863	8,225	34,894	0
	TO2	M	Tonopah Valley, including community of Tonopah south of I-10 corridor	1,2,3,4,5,8	47,235	22,824	7,281	17,130	

Identified Treatment Management Units

Treatment Management Unit	Map ID	Risk Value	Location and Description	Recommended Treatment ^a	Total Acres	Federal Acres	State		
							Trust Acres	Nonfederal Acres	Tribal Acres
Tolleson	TOL1	M	Community of Tolleson	1,2,3	3,967	0	3	3,964	0
Wickenburg	WB1	L	City of Wickenburg, Hassayampa River, and lands immediately west	1,2,3,4,5,7,8,9	26,927	1,078	11,818	14,030	0
	WB2	M	City of Wickenburg and lands immediately west	1,2,3,4,5,8	11,457	1,491	4,686	5,280	0
Wittmann	WT1	M	Lands surrounding the community of Wittmann	1,2,3,4,5,8	16,044	0	3,375	12,669	0
Youngtown	YT1	L	City of Youngtown	1,2,3	1,503	0	24	1,479	0

Note: L = low, M = moderate, H = high.

^a See Appendix C for recommended treatments.

^b Apache Junction is included in the 2009 Pinal County CWPP.

APPENDIX C. FUEL MODIFICATION AND TREATMENT PLANS

Fuel Modification and Treatment Plans

Treatment No.	1 Developed private parcels <2 acres				2 Undeveloped private parcels or single-structure parcels >2 acres		3 Grassland firebreaks		4 Oak/pinyon/juniper and shrublands within the WUI	
	Zone 1 (0–10 feet from structures)	Zone 2 (10–30 feet from structures)	Zone 3 (30–100 feet from structures)	Zone 4 (100–600 feet around home)	Slopes <20%	Streambeds, channels, and slopes ≥20%	Slopes <20%	Slopes ≥20%	Landscape treatment outside firebreaks	Firebreaks
Vegetation	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet to reduce flammable vegetation. Remove and destroy insect-infested, diseased, and dead trees and shrubs. Grasses and forbs may be cut with a mower to a 4-inch stubble. Remove dead plant material from ground; prune tree limbs overhanging roof; remove branches within 10 feet of chimney; remove flammable debris from gutters and roof surfaces.	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet; remove and destroy 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 a clear space around brush or planting groups. Grasses and forbs may be cut with a mower to a 4-inch stubble. All snags and vegetation that may grow into overhead electrical lines, other ground fuels, ladder fuels, dead trees, and thinning from live trees must be removed.	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 10 feet; remove and destroy insect-infested, diseased, and dead trees. Maximum density of trees (whichever is greater: 60 BA at 80–100 trees/acre or average density of 100 trees/acre). Grasses and forbs may be cut with a mower to a 4-inch stubble.	For natural areas, thin selectively and remove highly flammable vegetation. Carefully space trees; choose Firewise plants. ^a	Remove ladder fuels by pruning the lower third of trees or shrubs up to a maximum of 8 feet; remove and destroy insect-infested, diseased, and dead trees. Maximum density of trees (whichever is greater: 60 BA at 80–100 trees/acre or average density of 100 trees/acre) See fuel modification plan (this section) developed to promote riparian health, to prevent spread of fire to adjacent property, and to create defensible space with considerations for wildlife and groundwater protection. Single structure or structures on parcels exceeding 2 acres should include Treatment 1 in proximity to structures and Treatment 2 for remaining acres.	Remove dead, diseased, and dying trees. Fell dead trees away from stream channels with defined bed and banks. Areas should be hand-thinned and hand-piled; inaccessible areas may be treated with periodic Rx. Develop fuel modification plan (this section) for treatments.	Grassland types may be mechanically treated, including mowing, chopping, or mastication, to reduce or remove vegetation or may be grazed to a stubble height. Ensure that removal of vegetation within a designed firebreak of >1 chain (66 feet) in width and length is sufficient to protect federal, state, or private land values. Fuel reduction treatments within grassland vegetation types may include multiple-entry burns to maintain stand structure and reduce fine fuels. Trees and shrubs >8 inch drc should be thinned to a variable distance of 15–35 feet between trees. Trees and shrubs <8 inches drc should be removed. Mechanical/chemical or grazing treatment may be used to maintain firebreaks on private lands. See the fuel modification plan (this section) developed to prevent spread of fire to adjacent property and to create defensible space with considerations for wildlife and groundwater protection.	Same as for slopes <20%. Fuel treatments may require hand-thinning and hand-piling or grazing in steep slopes. Rx may be used to reduce high fire potential (see Treatment 5). Designated firebreaks may be increased to no more than 2 chains in steep slopes where herbaceous (fine fuels) and subshrub species fuel loads increase to pretreatment levels within 3 years. See fuel modification plan (this section) developed to promote forest health, to prevent spread of fire to adjacent property, and to create defensible space with considerations for wildlife and groundwater protection.	Spacing may be variable with a 20- to 35-foot minimum to promote (1) wildlife habitat while breaking horizontal fuel loading, which allows for patches of closely spaced trees for adequate cover, and (2) other habitat components while incorporating openings to increase herbaceous forage production, to maximize edge effect, and to promote fire-resilient stands. Mechanical thinning and Rx (see Treatment 5) can be used to reduce vegetative fuels and move stands toward potential natural vegetation groups as described in the <i>FRCC Interagency Handbook</i> (FRCC Interagency Working Group 2005a) or grazed to like conditions. All trees >10 inches drc will be targeted as “leave trees” unless removal is necessary to achieve the desired spacing.	Woodland and shrub trees <8 inches drc will be thinned to a spacing of 15 feet between trees, or Rx will be applied to achieve like conditions. Shrub and tree trunks <4 inches from the ground. Mechanical treatments, such as crushing, chipping, mastication, and Rx, may be used to create open stands that produce flame lengths of ≤4 feet to minimize crown-fire potential and to produce vegetative fuel conditions conducive to suppression action. Herbaceous and subshrub understory may be mechanically treated, including mowing, chopping, and masticating, or grazed to limit fine-fuel loading while protecting soil integrity from rainfall runoff.
Slash	Remove or reduce natural flammable material 2–4 feet above the ground around improvements. Remove vegetation that may grow into overhead electrical lines, ladder fuels, and dead trees. Thinning from live trees must be removed (chipped, etc.). Remove all leaf litter to a depth of 1 inch.	Control soil erosion from small waterflow channels by using rock or noncombustible velocity-reducing structures. Remove all leaf litter to a depth of 1 inch.	Same as Zones 1 and 2.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, turned, or grazed for like treatment.	All slash, snags, and vegetation that may grow into overhead electrical lines; other ground fuels; ladder fuels; dead trees; and thinning from live trees must be removed, mechanically treated (chipped, etc.), or piled and burned along with existing fuels.	Clean dead and down debris in channels where debris may be mobilized in floods and thus create downstream jams. Some slash and debris can be scattered and retained in small, ephemeral streambeds in which slash can help retain runoff and sediment and provide headcut stabilization.	Slash from grassland treatments may be burned, removed, masticated, or turned (disked).	Same as for slopes <20%; however, slash may be hand-piled and ignited with Rx as the primary slash reduction treatment.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, or turned.	Slash may be burned, piled and burned, or chipped and removed. Slash from grassland treatments may be burned, removed, masticated, or turned.

Continued

Fuel Modification and Treatment Plans

Treatment No.	5	6	7	8	9	
	Prescribed fire	Escape and resource transportation corridors (federal and nonfederal lands)	Riparian areas (federal, nonfederal, and private lands)	Conditional suppression areas (federal and nonfederal lands)	Saltcedar removal for restoration purposes (federal and nonfederal lands)	
Treatment Category	Federal, state, or private lands	Federal, state, or local government where designated as escape route	Federal or state lands	Federal, state, or private lands	Federal, state, or private lands	
Vegetation	<p>Rx will be used as a tool to accomplish specific resource management objectives in accordance with ASLD, ASFD, CNF, TNF, and/or BLM standards and guides.</p> <p>Rx on federal land is authorized if part of an approved Rx burn plan. As additional areas within the WUI are identified, Rx may be used as a treatment tool provided that a wildland fire implementation plan is in effect and that all conditions set forth have been met.</p> <p>Rx can occur at low, moderate, and high intensity. High-intensity fire will be used to create openings by removing all aboveground vegetation.</p>	<p>Reduce fuel loading by thinning trees <10 inches drc. Reduce trees to 15-foot spacing. Shrub and tree trunks will be cut no less than 4 inches from the ground. Stands will be variable across the landscape, such as retention of bands of higher-density vegetation with sufficient understory to maintain functionality of important wildlife movement corridors in areas of low structure density.</p> <p>Mechanical treatments may include chipping, piling and burning, or removal and Rx in the project area.</p> <p>Trees may be left in clumps with fuel ladders removed from below. Dead, diseased, and dying trees of all sizes will be emphasized for removal. Some trees >8 inches drc may be cut to reduce safety hazards or when needed to reach desired 15-foot spacing.</p> <p>Escape and resource transportation corridors may serve as firebreaks in all vegetative types.</p> <p>Firebreaks for each vegetative type, as described in this table, would be implemented at appropriate distance from the centerline of the escape and resource transportation corridors to produce fire-resilient stands and to enhance evacuation and response access.</p> <p>Emphasis will be placed on removing nonnative and flammable species.</p> <p>Grasses and forbs may be cut with a mower to 4-inch stubble.</p>	<p>Riparian treatments will be limited in scope. The majority of riparian areas that fall within the WUI boundary will be avoided unless deemed a fuel hazard.</p> <p>Clearing or cutting of any material by mechanized equipment within 10 feet of any stream on federal land may be prohibited to prevent the risk of accelerating erosion.</p> <p>Treatments may include some overstory removal of deciduous riparian trees and shrubs in areas where encroachment has increased heavy woody fuels (emphasizing removal and control of saltcedar and other invasive trees).</p> <p>Treatments will emphasize nonnative species. Snags >8 inches may be retained. All presettlement trees, including snags, will be targeted for retention.</p> <p>Restricting the removal of the vegetative overstory in the riparian areas to the period of October 15–March 31 will prevent the disturbance of any nesting by neotropical migrant bird species, including the southwestern willow flycatcher. Fuels reduction should occur October 15–March 31 in riparian areas, as long as fire danger is not extreme.</p> <p>Emphasis will be placed on removing species listed in Appendix A.</p>	<p>Private land treatment should use hand tools, chain saws, or mowers. Dead vegetation and slash should be removed. Ladder fuels, including limbs and branches, should be removed up to a maximum of 8 feet aboveground.</p> <p>All mechanized equipment must meet state and local fire-department/district standards. Perform treatments October–March annually. Treatment of annuals may be best when annuals are green.</p>	<p>This prescription includes lands with desert shrub/scrub vegetative types in which no fuel modification treatments have been identified as necessary to provide protection from wildland fire. The threat from catastrophic wildland fire is low or non-existent. This includes areas in which fire never played a historical role in developing and maintaining ecosystems. Historically, in these areas, fire return intervals were very long. These are areas in the WUI in which fire could have negative effects unless fuel modifications take place. These include areas in which the use of fire may have ecological, social, or political constraints and areas in which mitigation and suppression are required to prevent direct threats to life or property. Wildland fire growth within these areas will be monitored for private-property, ecological, and cultural threats before initiating suppression. Agency and fire-department/district policy provisions will determine suppression response.</p>	<p>Areas of monotypic saltcedar or in mix with mesquite or other riparian tree species may be treated mechanically or chemically or by controlled burning and reburning to reduce stem density, canopy, and excessive fuel loading. Mechanical removal for saltcedar by cutting below the root collar during November–January is preferred. Mechanical whole-tree extraction has achieved as high as 90% mortality on initial treatments and may be considered a preferred treatment. Low-volume oil-based herbicide applications in late spring through early fall would be considered for controlling small plants (<2 inches drc). Low-volume cut-stump herbicide applications will be considered in combination with mechanical treatment. Preferred phenological stage for burning is peak summer months and postavian breeding months. Black lines and appropriate headfires should be initiated depending on site-specific vegetative and burning conditions. Maintenance, revegetation, restoration, and monitoring should follow as needed for each treatment area.</p>
Slash	<p>Slash, jack piles, and down logs may be burned as appropriate in consideration of local conditions and distance from private property. Pile or Rx can be used to remove fuel from private land as designated. Snags and down woody material may be retained in areas where fire resilience is not compromised.</p>	<p>Snags, slash, and down logs will be removed in proximity to private land. Pile burning or Rx can be used to remove fuel. Snags and down woody material may be retained in areas where fire resilience is not compromised. Vehicle pullouts should be planned in appropriate numbers and locations where vegetation, slope, and terrain permit.</p>	<p>After removal of heavy woody fuels, fine fuels may be maintained by cool-season low-intensity Rx that moves slowly downslope or into prevailing winds to midslope. Large down woody material and snags (≥12 inches) may be retained in riparian areas.</p>	<p>Fuel treatments and woody material removal will occur on existing roads. Cool-season low-intensity Rx may be used for maintenance of fine fuels. Pile or jackpot burning will not occur in ephemeral, intermittent, or perennial stream channels.</p>	<p>Response will be full suppression when firefighter and public safety, property, improvements, or natural resources are threatened.</p> <p>Created slash will be made available for woody biomass use. If not used for wood-related products, slash will be piled with preexisting fuels and burned, or otherwise used for soil stabilization. Disturbed areas should be immediately revegetated with a native plant community that contains no invasive species and meets other land use objectives, such as wildlife habitat enhancements or recreational-use benefits.</p>	

Note: BA = basal area, Rx = prescribed fire, drc = diameter at root collar.

^aList of Firewise plants can be found in the Firewise literature listed in Appendix C, Educational Resources.