

Cibola County Community Wildfire Protection Plan 2020 Update

DRAFT

Signatures

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Executive Summary

The 2020 Cibola County Community Wildfire Protection Plan (CWPP) makes significant progress in documenting and formalizing the past efforts and future ambitions of key partners in the area to prepare residents and forests for wildfire and to create fire adapted communities. Since the previous CWPP in 2006 much has changed in Cibola County and this update captures those changes. These updates include a construction of a Wildland Urban Interface (WUI) area where there was none previously, a thorough designation of all Communities at Risk in the county and an assessment of their fire risk level, and adding many additional elements including structural ignitability, how communities should prepare for smoke, and how to create fire adapted communities.

The most important elements of this CWPP however are the priority actions and priority fuels projects that guide future actions in the county to prepare for wildfire. These were developed in consultation with the Core Team and the Community and are the heart of the CWPP. By fulfilling these recommendations, we believe that Cibola County will become prepared for wildfire and have the resilience to recover quickly.

The following sections provide more detail on wildfire preparedness in general to fill out the recommendations in the priority action tables, recommendations for post fire recovery, the collaboration process used in this CWPP update, the WUI and Communities at Risk update process, and the fire hazard analysis process.

Introduction

What is a Community Wildfire Protection Plan?

A Community Wildfire Protection Plan (CWPP) sets a community on the right path towards being prepared for wildfire. This takes many forms but what we have highlighted in this plan are the priority actions that residents and entities in Cibola County should take to prepare the county, its lands, and its residents for wildfire. These priority actions are formed through the recommendations of a diverse group of dedicated stakeholders called the Core Team. Just as important as the recommendations in this plan though is the process of forming the Core Team and keeping that team together to act on the recommendations of the plan.

The federal government has recognized that many communities in the United States live in or near fire adapted ecosystems that often bring inherent risks of wildfire. The Healthy Forest Restoration Act (HFRA) (Public Law 108-148 2003) acknowledges this and the fact that the federal government cannot provide funds to reduce hazardous wildland fuels for all communities at risk. The HFRA therefore established a mechanism to prioritize communities at risk to ensure that federal funds to reduce hazardous fuels go to those communities at highest risk. This mechanism is the CWPP (Public Law 108-148 2003). With a completed CWPP a community or group of communities can apply for federal funds appropriate to reduce hazardous fuels or other prioritized actions that have been identified through the CWPP process.

The minimum requirements for a CWPP as described in the Healthy Forests Restoration Act are:

- (1) Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
- (2) Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
- (3) Treatment of Structural Ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

The HFRA requires that three entities mutually agree to the final contents of a CWPP:

- The applicable city or county government;
- The local fire department(s); and
- The state entity responsible for forest management.

Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities was released in 2004 and provided a basic outline for CWPP preparation. This was supplemented in 2008 by the more exhaustive *Community Guide to preparing and implementing a Community Wildfire Protection Plan*. Both guidance documents can be accessed at www.forestsandrangelands.gov/communities. These guidance documents are excellent and the links and resources section in the 2008 document is especially useful for CWPP implementation and tracking accomplishments and progress.

CWPP Updates

Planning efforts periodically need updating. The New Mexico Fire Planning Task Force recommends that CWPPs be updated every five years in order to assess new hazards and monitor progress made since the last CWPP update. This evaluation can generate new ideas, recommendations, or changes. Building community resilience to wildfire requires an adaptive approach that uses the lessons of the past to inform future management. It is important to remember that this CWPP update is a living document. As new information becomes available and conditions on the ground change, priorities may need to be updated.

In 2015, the New Mexico Association of Counties (NMAC), in collaboration with New Mexico State Forestry (NMSF) and the Forest Stewards Guild (FSG), developed guidelines for updating CWPPs (NMAC, 2015). The guidelines outline the process for updating existing CWPPs as follows:

1. Review existing CWPP.
2. Host collaborative meetings.
3. Update maps.
4. Reflect changes in risk ratings due to complete projects or changes in landscape.
5. Develop updated priorities.
6. Distribute CWPP update drafts to key stakeholders (including local, state, tribal, and federal partners) for review and input before the final approval.
7. Submit the final document to your local government body, local fire department(s) and State Forestry for required signatures and endorsement.
8. Once signed and endorsed by your local governing parties, submit all documentation to NM State Forestry no later than September 1st for final approval by the New Mexico Fire Planning Task Force.

In addition to the items listed above, CWPPs and updates must also include the following elements:

1. Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties.
2. Prioritized fuel reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure.
3. Reduction in structural ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan
4. Signatures secured:
 - a. The applicable local government (i.e., counties or cities);
 - b. The local fire department(s); and
 - c. The state entity responsible for forest management.

Previous Wildfire Planning in Cibola County

2006 Community Wildfire Protection Plan

In accordance with the Healthy Forests Restoration Act (HFRA) of 2003, the County completed a CWPP in 2006. The previous Cibola County CWPP was written in 2006 by SEC. Inc. It is available at New Mexico State Forestry website here:

<http://www.emnrd.state.nm.us/SFD/FireMgt/documents/completcwpp.2006.pdf>

The previous plan covers in great detail the background information for the CWPP, including the geographical make-up of the county, its fire history, as well as the variety of available fuel treatments and their effectiveness. Although this information is 14 years old much of it is still valid for the County, so this 2020 update does not attempt to include that information except where applicable. We encourage you to refer to the 2006 plan however for back-ground information for this current update.

The 2020 plan update greatly expands on concrete recommendations to advance wildfire preparedness and features upgraded mapping of values and wildfire risk.

CWPP Implementation

The 2006 Cibola County CWPP identified several priority actions designed to increase wildfire resilience. Some of those actions are ongoing and have been carried over to the 2020 plan. The CWPP core team and members of the public worked together to update the priority actions list and to identify new priority projects that will make Cibola County more fire adapted. This is not an exhaustive list but provides a starting point for action, and other considerations such as funding or interest of residents may further define or shift these actions. Tables 1 through 6 outlines the priority actions for 2020 and beyond. Tables 7 and 8 provide further insight into specific fuels projects and actions specific to particular areas within the county.

Key to accomplishing many of these tasks is formalizing the CWPP core team or creating a new collaborative group to implement the 2020 CWPP action items in collaboration with County Staff, residents, and partners.

Cibola County CWPP Priority Actions

The following tables outline priority actions for the county and the residents and agencies within it to undertake. These actions are based on best practices, local knowledge and recommendations from the core team and stakeholders of the CWPP process. Since all actions in the tables below are priority we have simply ranked them as either priority or high priority, this coarse gradient will allow the Core Team flexibility to accomplish actions and refine their priorities in the short term before the next CWPP update is accomplished. Some of these actions will be long term projects spanning years while others can be accomplished more simply. We have provided some geographic specificity for some of these actions in the Locally-Specific Action Items section, which is located after the priority actions table. As actions are accomplished or new priorities emerge, we recommend updating this table.

Table 1: Community Involvement Priority Actions

Priority Level	Action and Detail
High	Formalize the CWPP group or create a new group that will focus on implementing CWPP priority actions.
	<i>Detail: A collaborative group that focuses on implementing CWPP priority actions is an important component to making this CWPP an actionable plan. Tasks for the CWPP group may include (1) implementing CWPP priority action items, and (2) providing education and outreach to County residents. The group should have regular meetings at least once a year and take meeting minutes to track concerns and ideas for implementing the CWPP. Sub-groups may include wildfire preparedness, evacuation planning, and pursuing funding for project implementation.</i>
High	Link leaders working towards wildfire adaptation with the Fire Adapted Communities New Mexico Learning Network.
	<i>Detail: Develop a network of Fire Adapted Communities New Mexico (FACNM) leaders to improve fire mitigation and community resilience across Cibola County. Reach out to core team members and fire district chiefs to identify community leaders that may be willing to serve as FACNM leaders that can bridge the gap between communities and fire prevention leaders, and emergency managers. Provide leaders with resources from the state-wide network and support their education and outreach efforts within their communities of residence. Access facnm.org for more information.</i>
High	Hire a Wildland Urban Interface Specialist for the County.
	<i>Detail: The WUI specialist will obtain and manage WUI and hazardous fuels reduction grants, coordinate fire prevention activities and public involvement such as the Firewise communities program, coordinate actions with partners (including state and federal land management agencies, tribes, and private landowners), and work with the CWPP group to implement CWPP priority actions.</i>
High	Develop a strategy for targeted outreach and education of wildfire preparedness and prevention to all citizens of Cibola County.
	<p><i>Detail: Conduct fire prevention campaigns during times when fire danger is high. Use newspapers, radio messages, social media, Neighborhood leaders, email, and signs to alert both visitors and residents. A diverse suite of outreach methods will increase the amount of people reached. Outreach is particularly important before and during fire season to encourage prevention and preparedness. Additionally establishing communication methods and networks will help disseminate emergency information since residents will know where to turn for wildfire related information.</i></p> <p><i>Share prevention plans across jurisdictions and identify areas where a coordinated approach may improve outreach and engagement with at risk communities. Include information seasonally in The Cibola Citizen, The Cibola Beacon, The Gallup Independent, and The Gallup Sun on local radio stations, and on social media about</i></p>

	<p><i>actions that residents can take to reduce wildfire risk, increase emergency preparedness, etc.</i></p> <p><i>Host an annual wildfire preparedness day in conjunction with the national day for County residents. Preparedness days can take place in various parts of the county. Local volunteer fire departments (VFDs) would be good hosts for this outreach effort. Residents can learn about steps they can take to make their homes and properties more defensible and learn about ongoing efforts in the county to reduce wildfire risk.</i></p> <p><i>Promote the Ready, Set, Go! program to County residents and make resources available in print and on the County website. Ready, Set, Go! is a national effort to educate residents how to prepare ahead of time for an evacuation order. http://www.wildlandfirersg.org/ Consciously target vulnerable populations in outreach and education. The elderly and low-income individuals and families face a greater wildfire risk. Targeted outreach will help ensure these residents have the same access to education and outreach materials as well as cost-share programs to reduce wildfire risk.</i></p>
	<p>Challenge the USFS to implement projects next to large areas of private land and key communities.</p>
	<p><i>Detail: Where there are adjacent private landowners whom are willing to allow access for fuel breaks, work with the Forest Service to encourage implementation near high risk communities and large areas of private land. The USFS should also be encouraged to move forward with NEPA clearance on more accessible and treatable land in order to expand treatment on the national forest.</i></p>
	<p>Reduce the number of human caused wildfire ignitions from refuse burning and abandoned campfires.</p>
	<p><i>Detail: Education on burn bans and restrictions and effective enforcement of county rules will be key to reducing this type of wildfire ignition. A diverse and broad education program should be implemented. This effort may be best focused around the I-40 corridor and around summer holidays like Memorial Day, The Fourth of July, and Labor Day. These messages can be shared through billboards, radio announcements, signs, posters, social media advertisements, and television ads.</i></p>
	<p>Work with New Mexico State Forestry to establish Firewise communities in Cibola County</p>
	<p><i>Detail: Attaining Firewise status for a community is often the catalyst for further action to engage community members in fuels reduction, wildfire preparedness, and other actions related to becoming a more fire adapted community. The CWPP group can help identify potential Firewise communities and community members to lead those efforts. Work with NMSF to support Firewise communities by providing resources like chippers, community brush disposal days, and training opportunities to Firewise communities.</i></p>
	<p>Promote implementation, education, and training about prescribed fire.</p>
	<p><i>Detail: Prescribed burns are the most cost-effective way to reduce fuels and range from pile burns after fuels treatment to broadcast burns. Promote prescribed burning across all lands in the county to reintroduce fire and reduce fuels.</i></p>

<p><i>Promote prescribed burning where appropriate on private and public land</i></p> <p><i>Promote VFDs to participate in prescribed burns with neighboring agencies to gain training and skills.</i></p> <p><i>Consider developing a Prescribed Burn Association (PBA). PBAs pool equipment and resources to formalize relationships between landowners who are interested in implementing prescribed burns on their property. This model has been very successful in supporting expanded use of prescribed fire on private property.</i></p>

Table 2: Reducing Structural Ignitability Priority Actions

Priority Level	Action and Detail
High	Defensible space thinning on private property is a high priority across the county. Pursue funding for defensible space and general thinning projects on private lands in the County.
	<i>Detail: Cost share and grant programs exist to help offset the costs of fuel reduction projects. Promote these opportunities to interested parties. Develop ways to link these opportunities to support continuous projects and funding for mitigation crews. Alternatively seek funding to develop programs to assist residents in achieving this work. Additionally, coordinate with private landowners that want to complete large-scale thinning projects, and seek funding to complete these.</i>
High	Conduct home hazard assessments of resident’s property.
	<i>Detail: Assessments of individual’s home risk are a valuable tool for residents to prioritize and take action. Methods include quick curbside assessments completed by an agency, in depth assessments completed by an agency and the resident together, and assessments completed by residents themselves using a guide. All of these methods are valuable as the goal is simply to inform residents how to reduce their risk. The FSG and the Wildfire Network have developed an assessment guidebook for resident to do self-guided assessment. This resource is available on the Fire Adapted Communities New Mexico website, at www.facnm.org.</i>
	Develop brush disposal sites.
	<i>Detail: Brush disposal sites incentivize residents to reduce fuels near their homes by providing a place for them to take the fuels with little to no costs to themselves. Community brush disposal sites have been implemented in other regions through agreements between the county and local Forest Service ranger districts. The brush disposal sites are hosted on county land, typically in old gravel pits, and administered by county personnel. The Forest Service or other agency routinely provides the personnel and resources to burn the piles collected at brush disposal sites.</i>
	Improve wildfire insurance coverage for residents.
	<i>Detail: Work with insurers and fire managers to find ways to improve coverage in areas that need wildfire insurance. A possible example could include home assessments</i>

	<i>completed by qualified individuals in the county with action items to reduce fire risk, that would lead to reduced insurance premiums.</i>
	Consider adopting county codes and ordinances that address wildfire risk.
	<i>Detail: Codes and ordinances are tools available to local governments to address the shared wildfire risk within a community. Codes and ordinances may address fire resistant materials being required on <u>new</u> construction, defensible space implementation around existing structures, and reducing fuel loads adjacent to roadways. Examples of WUI codes and ordinances are available from other counties and municipal areas throughout New Mexico. A summary of Santa Fe County’s WUI Code can be found here: https://www.santafecountynm.gov/userfiles/file/resident/UrbanWildland.pdf</i>
	Promote accurate signage of addresses to aid in firefighter response.
	<i>Detail: 4-inch-high reflective signage that indicates that address of each residence should be placed in a visible location so first responders can quickly assess the location of residences. Once the county has completed its current signage ordinance it should share it with neighboring jurisdictions as a potential model.</i>
	Pursue cost share programs to upgrade residential home building materials such as roofing, siding, and deck materials.
	<i>Detail: Upgrades to homes that reduce structural ignitability are often prohibitively expensive. Finding and securing this sort of funding can help offset the costs of these upgrades to County residents. This could be a task undertaken by a County Wildfire Coordinator or the CWPP Core Team.</i>

Table 3: First Responders and Equipment Priority Actions

Priority Level	Action and Detail
High	Host a pre and post wildfire season coordination meeting for all agencies that are responsible for responding to wildfire.
	<i>Detail: This meeting will help to identify resource gaps and where other agencies can assist, coordinate response plans, and coordinate communication frequencies so that agencies can communicate on the fire line. We expect this meeting will also have many unanticipated benefits when emergency managers from across the community gather.</i>
High	Cross-training area fire departments and local government officials with state and federal agencies.
	<i>Detail: Recruitment of new members into the VFDs has been identified as a challenge to meeting capacity needs for fire response. Forming a group to focus on this task would be an important responsibility of the continuing Core Team group or the Fire Chief’s Association. Consider advertising on the web, on social media, in print and at public events.</i>

High	Ensure that every fire department has equipment to respond to wildfires including at least one type 6 engine and a water tender.
	<i>Detail: As of the 2020 update, Bluewater Village needs a type 6 engine, San Rafael needs a type 6 engine, Candy Kitchen needs a type 6 engine, and Fence Lake needs an additional water tender.</i>
	Implement an improved and more regular stipend program to incentivize Volunteer Fire Department (VFD) participation in trainings.
	<i>Detail: Create incentive programs to ensure that VFDs participate in county-wide wildfire preparedness and continuously improve their qualifications.</i>
	Expand wildland firefighting capability of all wildland fire responders in the County by adding equipment.
	<i>Detail: Identify equipment needs throughout the county and work to fill them. Develop a supply cache and apparatus that is capable of supporting wildland firefighting activities in the county. This includes purchasing new fire engines and water tenders, as well as maintain and expanding supplies of hand tools, PPE, radios, etc.</i>
	Identify community liaisons who can relay relevant information between emergency personnel and residents in the event of a wildfire or other emergency.
	<i>Detail: Identifying community members to work with emergency personnel and residents is part of planning for during and after wildfires and other emergencies. A community liaison will help keep residents informed, providing a trusted and familiar voice to compliment more official channels. This liaison will likely need to be trained in the incident command system and to maintain some basic NWCG qualifications.</i>
	Review and update mutual aid agreements with neighboring counties and state and federal jurisdictions.
	<i>Detail: Improved relationships with solid MOUs would aid in cross jurisdictional response in the many districts that are adjacent to other agencies and counties.</i>

Table 4: Evacuation Planning Priority Actions

Priority Level	Action and Detail
High	Promote the Code Red Reverse 911 system
	<i>Detail: Reverse 911 can send notifications to residents within a discrete area quickly and efficiently to land line phones, cell phones and email. By asking residents to sign up Reverse 911 first responders can also access crucial information about emergency callers. Coupled with other notification techniques will aid in effectively warning residents of wildfires, evacuations, and other emergencies.</i>

High	Work with communities and fire districts to develop evacuation plans.
	<p><i>Detail: Evacuation plans at the appropriate scale that designate routes (including a map), safety zones, roles and responsibilities, and procedures for residents (including their families and livestock) and emergency personnel will make for safer evacuations in the event of an emergency.</i></p> <p><i>Evacuation planning can be accomplished through community or fire district-level workshops. Participants may utilize the integrated fire hazard map viewer to estimate how fire could behave in their area.</i></p> <p><i>The New Mexico Ready, Set, Go! Personal Wildfire Action Guide contains instructions for evacuation planning.</i></p> <p>http://www.emnrd.state.nm.us/SFD/FireMgt/documents/FINAL-new-mexico-RSG-guide-2017_000.pdf</p>
High	Establish safety zones and/or evacuation staging areas for each fire district or community.
	<p><i>Detail: Having pre-determined safety zones or areas where residents can go to in the event of an evacuation for further instruction will limit confusion in the event of an evacuation. These areas should be established under guidance of a wildfire professional. More information can be found about safety zones can be found at:</i></p> <p>https://www.firelab.org/project/firefighter-safety</p>
High	Involve the County Sherriff's Department, State Police, and other co-operators in reviewing and updating current All Hazard Plan and conducting field exercises.
	<p><i>Detail: Emergency personnel that will be directly involved in implementing an evacuation should be consulted when developing the County evacuation plan.</i></p>
	Support evacuation drills.
	<p><i>Detail: Evacuation drills can help to expose gaps in notification systems and evacuation procedures. In coordination with first responders drills should be carried out at the neighborhood, community, or multi-community scale.</i></p>
	Thin vegetation along roadways and at intersections and maintain previous treatments to allow for evacuation during a wildfire.
	<p><i>Detail: Thinning along roadways is particularly important along evacuation routes and near safety zones. Treatments along roads should be sufficient to create a survivable space for evacuation. More extensive treatments that allow firefighters the opportunity to halt forward spread of a wildfire.</i></p>

Table 5: Communication Priority Actions

Priority Level	Action and Detail
High	Improve radio communications and remove dead spots.
	<p><i>Detail: Much progress has been made in removing dead spots (areas where there is no radio communication) but a continual process of identifying areas with limited communication and working to improve reception in those areas is a priority. Additionally, VFDs need increased access to interagency aviation and tactical channels through the purchase of radios and cooperation with partners.</i></p> <p><i>Known dead spots include:</i></p> <ul style="list-style-type: none"> • <i>South of Gallup</i> • <i>Ramah area needs repeater</i> • <i>Timberlake area, especially in canyons</i>
High	Improve cellular communications and remove cellular dead zones.
	<p><i>Detail: Cell coverage aids first responders but also allows residents to receive up to date emergency information. Known dead zones or areas with no cellular coverage that need to be covered in the county include:</i></p> <ul style="list-style-type: none"> • <i>Fence Lake</i> • <i>Candy Kitchen</i> • <i>Lobo Canyon – spotty Verizon coverage</i> • <i>El Morrow- Verizon only</i>

Table 6: Water Resource Protection Priority Actions

Priority Level	Action and Detail
High	Identify high priority watersheds and water sources that are risk of post fire impacts and work collaboratively to reduce fire risk.
	<p><i>Detail:</i></p> <ul style="list-style-type: none"> • <i>Coordinate between fire services, land managers, water utilities or other water governing bodies.</i> • <i>Conduct analysis to locate and define areas at risk.</i> • <i>Identify water sources that are at risk of post-fire erosion through analysis and local knowledge. Work with water utility providers or other water governing bodies to identify areas that are currently experiencing soil erosion before wildfire.</i> • <i>Take measures to mitigate the risk of high severity wildfire in these areas through targeted fuel reduction and post-fire recovery planning.</i>

	Document the location of community water infrastructure including wells and water tanks.
	<i>Detail: Mapping community water infrastructure will help prioritize mitigation measures designed to protect them.</i>
	Support projects to develop new water resources/enhance existing water resources.
	<i>Detail: Encourage agencies and residents to develop water resources. Invest in water resources such as tanks or ponds, that will have water available for firefighting resources.</i>

Priority Fuels Treatments

According to the 2015 CWPP Update Guidelines (2015), all CWPP updates should include updated priorities for fuels treatments. Effective fuel treatments increase firefighters' chances of suppressing unwanted wildfires and to change landscapes to a reference or desired condition. (Agee & Skinner, 2005; Kennedy & Johnson, 2014). Through phone interviews, surveys, and public meetings, the CWPP core team worked with CWPP stakeholders to identify priority fuels reduction projects in Cibola County. The most important projects as identified by the Core Team are identified below, these are not listed in order of importance.

Table 7: Priority Fuels Treatments

Fuel Reduction Thinning	Along the westside of Bluewater acres subdivision and within Bluewater subdivision
	Oso Ridge and Cibola Trails subdivisions.
	Salt Cedar along Rio San Jose.
	Along I-40 corridor, Thoreau, west of Grants, running into checkerboard area in the Southwest corner of the county to Ft. Wingate
	Treatments around schools and infrastructure near Thoreau, Ft. Wingate, and other communities through the checkerboard area in the Southwest corner of the county.
	Along the Northwest area of the Cubero district
	The community of McGaffey Pines subdivision.
	The communities of Pinehaven and Bread Springs
	The community of Pine Meadows
	Along County rd. 42
	The Whites project (Confirm this name) on Ramah Navajo land using mechanical and pile burning.
	WUI thinning surrounding Pueblo of Acoma.
	WUI areas of Timberlake and El Morro ranches.
	Paguete and Encinal canyons to protect water resources for the Pueblo of Laguna.
WUI areas around La Jara and within La Jara subdivisions	

	WUI and defensible space around Lobo Canyon and Lobo Camp communities.
	Along roads in High Country Ranch and Mujeres Ranch.
	Along Water Canyon to protect from the effects of high severity wildfire.
Thinning and Prescribed Fire	Along the boundary of private and forest service land along Oso ridge, El Morro, and Timberlake Areas.
Fuel Breaks and Safety Zones	Fuel break along the Southwest side of El Morro Ranches and thinning along roads
	Fuel break and safety zones in high-risk the community of Candy Kitchen
Pile Burning	Between mile marker 25 and 28 on highway 36 in Fence Lake community
	The Cerro Alto project on Ramah Navajo land.
Managed wildfire and Landscape Prescribed Fire	El Malpais National Monument
	Cibola National Forest
Defensible space	Lobo Creek and Lobo Canyon
	Timberlake
	Candy Kitchen
	El Moro Ranches
	Bluewater Village
	La Jara Subdivision
Key Water Sources	Paguete and Encinal Canyons
	Bluewater Creek
	Rio San Jose
	Water Canyon
	San Mateo Springs and Reservoir
	La Mosca Tank
	Rinconada Canyon

Locally-Specific Priority Actions

Through phone interviews, surveys, and public meetings, the CWPP core team identified action items that were specific to communities within Cibola County. Although many of these actions are covered in general in the priority actions tables above, these are actions that were highlighted in the planning process in 2020 as particularly important to specific areas or jurisdictions. We feel that although this is a county wide plan it is important to retain these particular actions. These locally specific actions are identified below, and are not listed in order of importance:

Table 8: Locally Specific Priority Actions

Create East/West egress from Forest Road 157.
Improve BIA and New Mexico State Fire response times to Pueblo of Laguna.
Educate Pueblo of Laguna and Pueblo of Acoma residents about emergency notification systems.
Work with Navajo Nation to create evacuation plans that are specific to Navajo chapter houses in Cibola County.
Evaluate restrictive covenants that may impede wildfire risk reduction in Fencelake subdivisions, Candy Kitchen, Indian Knolls, and Shadow Canyon.
Manage naturally ignited wildfire for resource benefit across the Zuni Mountains landscape on Forest Service land.
Provide the training needed to red-card wildland firefighters in Navajo communities.
Provide training in Pueblo of Acoma and Pueblo of Laguna to improve wildland firefighting capacity.
Connect with and educate the volunteer fire department and the homeowners association of El Morro Ranches about Firewise.
Connect with and educate the Fence Lake community about wildfire preparedness and home hardening.
Conduct evacuation drills for the El Morro Ranches area.
Create an evacuation plan for the Candy Kitchen Community.
Improve notifications about prescribed fire to Southern Pueblos Agency to protect cultural resources.
Improve community risk awareness of wildfire risk in Pueblo of Laguna and Pueblo of Acoma.

Wildfire Preparedness

The following sections provide descriptions, definitions, and detail that expands on some of the key concepts that appear in the priority action tables. These sections provide a starting point to engage in a more in-depth discussion into each of these topics.

Fire Adapted Communities

The core idea of a Fire Adapted Community (FAC) is an acknowledgement that the community is located in a fire adapted ecosystem where fires will occur at some point. Communities must become resilient to wildfire just as a fire adapted ecosystem is adapted to frequent wildfires.

The risk of wildfire is shared between neighbors, communities, and jurisdictions. The reduction of that risk is best accomplished through both top-down and grassroots approaches. Top-down strategies (regulations, zoning, ordinances, etc.) provide guidelines for residents to follow that require them to take responsibility for their own safety, as well as that of their communities and neighbors. Past ordinances regarding wildfire mitigation have been opposed by some rural communities in New Mexico (Weinstein, 2014). In contrast, Fire Adapted Communities (FAC) utilizes a grassroots method focused on outreach, education, and the direct involvement of individuals residing in the WUI (citation or link to national or FACNM page?). By promoting and developing a FAC, local governments and land managers may find alternatives to ordinances and regulations or find a more receptive and educated public when proposing such measures as defensible space thinning.

FACs are listed as one of the three goals, along with resilient landscapes and safe and effective wildfire response, by the National Cohesive Wildland Fire Management Strategy. This strategy is “a strategic push to work collaboratively among all stakeholders and across all landscapes, using best science, to make meaningful progress towards the three goals (“The National Strategy,” 2019).” FAC provides a framework for engaging community stakeholders and land management agencies at varying levels in order to help reduce the risk of wildfire. FAC partners include federal agencies, non-governmental organizations, businesses, individual homeowners, and anyone interested in reducing wildfire risk in their community. FAC concepts are useful for helping individuals and communities reframe how they think about and live with wildfire on the landscape. The diagram above illustrates all the potential pieces that make up a fire adapted community. In the western United States, wildfires are a natural component of the landscape. The presence and reoccurrence of wildfires has led to the development of ecosystems and vegetation that are fire adapted. Acknowledging this fact is an important step towards becoming a more fire adapted community, and a good starting point for education and outreach to community members. As individuals and communities that live on landscapes that are adapted to wildfire, we too must become adapted to wildfire.

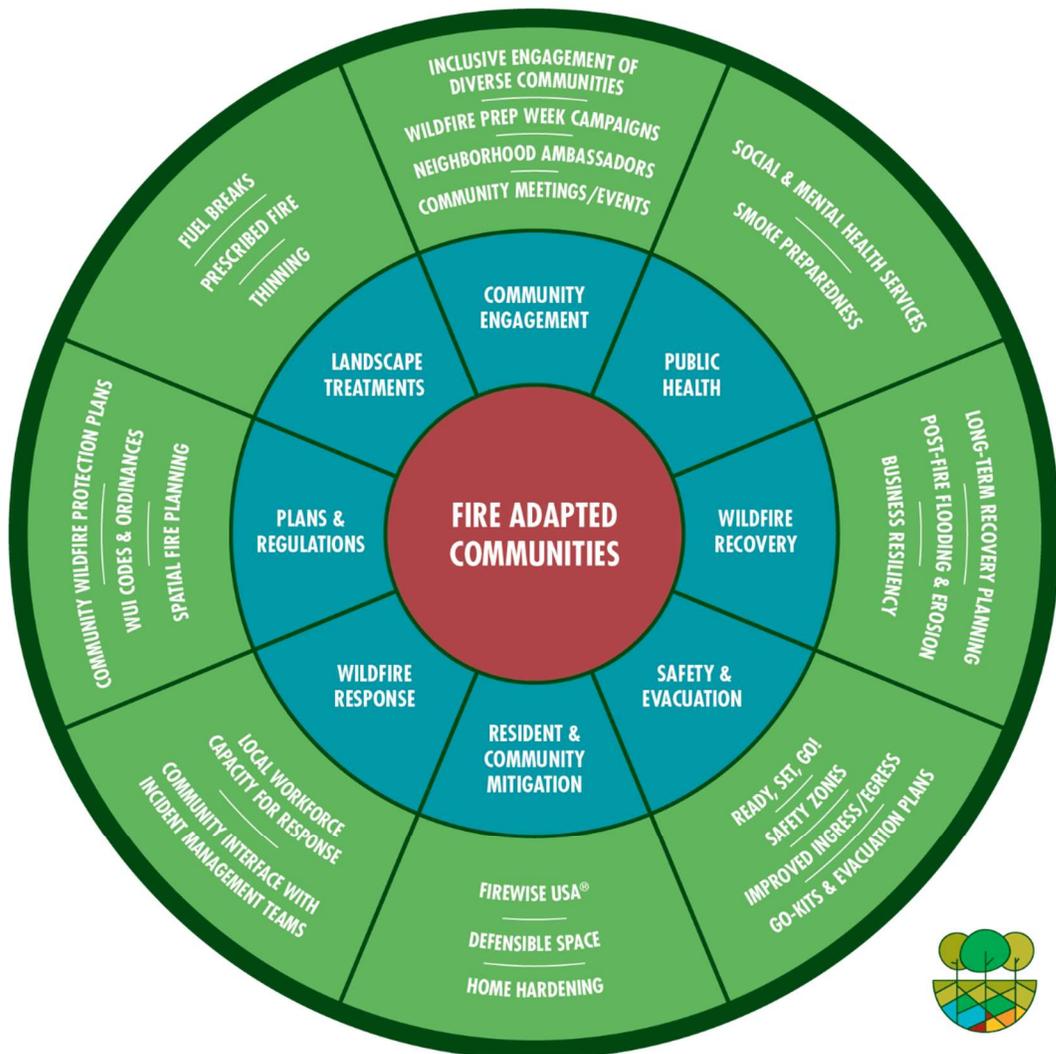


Figure 1. Fire Adapted Communities diagram

This diagram displays the many pieces that make up a fire adapted community.

Part of being fire adapted is recognizing that not all members of the community can prepare for, respond to, and recover from a wildfire in the same ways. Research and experience has shown that socially vulnerable populations may not be able to mitigate and recover from wildfire to the same extent as the less vulnerable members of the community (Lynn & Gerlitz, 2005). Residents of an older age may not have the ease of mobility to move their wood pile, clean gutters and eaves, or rake needles and debris. Households that are below the poverty threshold may not have access to funds to reduce structural ignitability by installing a new roof, or they may not be able to pay for fuels reduction treatments. Consideration to protect these groups from wildfire should be made when designing wildfire mitigation programs.

Visit Fire Adapted New Mexico at www.facnm.org or the national Fire Adapted Communities network at www.fireadaptednetwork.org for more information.

Fire Adapted Communities New Mexico Learning Network

Our collective action, as residents of a fire adapted ecosystem, has the ability to have an outsized impact compared with what a single actor can achieve. There is a lot of experience and knowledge in our formal and informal networks. Technology provides us a way to formalize those connections and make sharing resources and capacity easier.

At its core, the Fire Adapted Communities New Mexico Learning Network is a grassroots, member driven effort. FAC NM members feel empowered to take action to reduce wildfire risk to their homes and communities. Members recognize that fire has a role to play in the fire adapted ecosystems in which we live.

A community is never done with building wildfire resilience - there is no end-point. A Fire Adapted Community consists of informed and prepared citizens collaboratively planning and taking action to safely coexist with wildland fire.

The core of the FACNM network is its members, who can share lessons learned about how to approach wildfire adaptation efforts. We encourage anyone who is interested to visit the website www.facnm.org and consider joining the network as a member and for more information.

Firewise Communities

Firewise Communities is a recognition program administered by the National Fire Protection Association (NFPA). Firewise Communities focus on reducing the loss of life and property from wildfire. This is accomplished through providing resources that allow communities to responsibly build and maintain structures on their properties and to assist each other in preparing for, and recovering from, wildfire. Firewise emphasizes fuels reduction and gives recommendations for steps homeowners can take to reduce their individual risk to wildfire. For example, landscaping practices to reduce flammable materials close to the home and home maintenance practices that reduce the chance of a home catching fire. Several resources for homeowners, such as an online toolkit and checklist for steps to reduce wildfire risk can be found at www.firewise.org. Firewise recognition is achieved after a community completes a 6-step process:

1. Form a Firewise board/committee of community residents and other applicable wildfire stakeholders
2. Verify community risk to wildfire by obtaining a wildfire risk assessment as a written document from the local fire department, state forestry, or forest service. This assessment is a living document and needs to be updated every five years.
3. Develop an action plan based on the assessment, that should be updated every three years.
4. Host a “Firewise Day” outreach event.

5. Invest a minimum of \$2 per capita in local Firewise actions for that year.
6. Submit an application at portal.firewise.org to your Firewise state liaison.

Firewise recognition is an important tool in the ongoing process of being fire adapted. Many communities working to be fire adapted begin by becoming recognized as a Firewise community.

Defensible Space and Home Hardening

Residents can significantly reduce their wildfire risk by creating defensible space around their homes and hardening their homes to the potential for ignition. Keeping gutters and roofs clear of flammable debris, moving woodpiles and propane tanks away from the house, and keeping the grass mowed are some simple steps that homeowners can take to make their homes more resistant to wildfire.

The information here contains a brief overview of these topics, for more information visit the National Fire Protection Associations web page or www.facnm.org/prepare.

Assessments

Many resources exist to assist people in making their homes more resistant to wildfire. An assessment of the factors that make a building vulnerable to wildfire is the best place to start. Individuals can perform this assessment themselves with the help of a guide such as the one at <https://facnm.org/assessmenttools>, or they can contact a local professional to help with the assessment. An assessment completed by a professional or the homeowner themselves will provide a plan to tackle the most hazardous issues first and then move to less hazardous issues.

Structure Hardening

Addressing the materials and construction of the structure is important to reducing the risk of the home igniting. A significant resource that should guide residents as they consider new construction or retrofit of structures is the research from the Insurance Institute for Business and Home Safety on factors that contribute to home ignitions from wildfire. Their research addresses a wide variety of factors from vents that limit ember entry to buildings and materials that siding, and decks are constructed of that resist wildfire. Their research can be accessed at <https://ibhs.org/risk-research/wildfire/> as well as in this series of one-page reviews on specific materials from NFPA available here <https://facnm.org/prepare>.

Defensible Space Zones

Targeting trees, shrubs, and other vegetation in the immediate vicinity of the house can also make the home more fire resistant. Firewise USA recommends three zones of defensible space that provide useful guidance for County residents (Firewise USA, 2016):

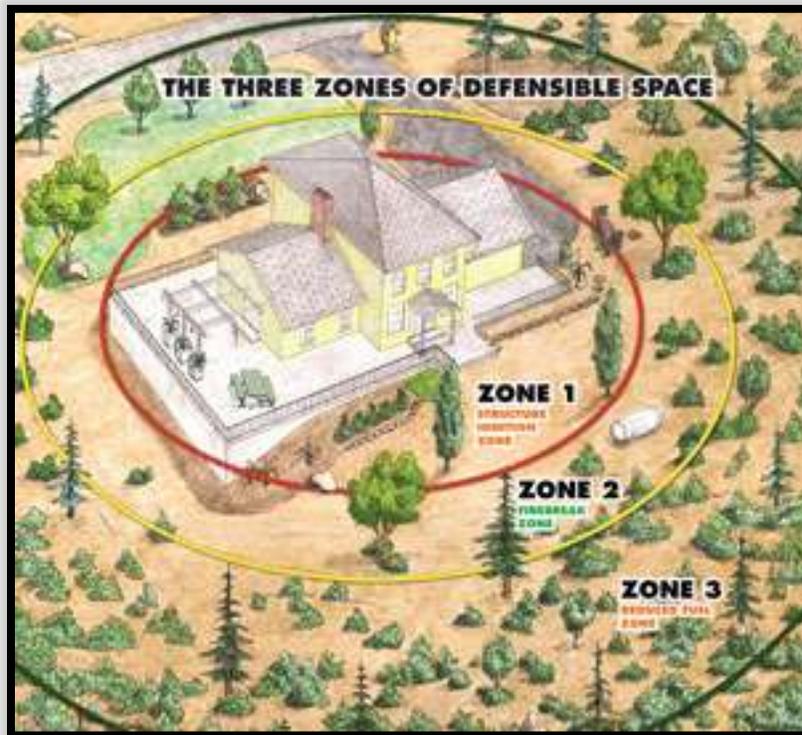


Figure 2. Three zones of defensible space.

Zone 1: Encircles the structure and all its attachments (wooden decks, fences, and boardwalks) for at least 30 feet on all sides. *Note:* the 30-foot number comes from the very minimum distance, on flat ground, that a wooden wall can be separated from the radiant heat of large flames without igniting.

In Zone 1:

- Space plants carefully, selecting those that are low-growing and free of resins, oils and waxes that burn easily.
- Mow the lawn regularly.
- Prune trees six to ten feet up from the ground.
- Space coniferous trees to allow 30 feet between crowns. Trim back trees that overhang the house.
- Create a ‘fire-free’ area within five feet of the home, using non-flammable landscaping materials and/or high-moisture-content annuals and perennials.
- Remove dead vegetation from under decks and within 10 feet of the house.
- Consider fire-resistant materials for patio furniture, swing sets, etc.
- Remove firewood stacks and propane tanks; they should not be located in this zone.
- Water plants, trees and mulch regularly.
- Consider xeriscaping if you are affected by water-use restrictions.

Zone 2: 30 to 100 feet from the home.

In Zone 2:

- Select plants that are low-growing, well irrigated and minimally flammable.
- Leave 30 feet between clusters of two to three trees, or 20 feet between individual trees.
- Encourage a mixture of deciduous and coniferous trees.
- Create ‘fuel breaks’ such as driveways, gravel walkways, and lawns.
- Prune trees six to ten feet up from the ground.

Zone 3: 100 to 200 feet from the home. NOTE: Because of other factors such as topography, the recommended distances to mitigate for radiant heat exposure extend between 100 to 200 feet from the home – on a site-specific basis. In this area:

- Conduct thinning of trees, although less space is required than in Zone 2.
- Remove smaller conifers that are growing between taller trees (these can serve as “ladder fuels” and give ground-level fires a path into the crowns of larger, mature trees).
- Remove heavy accumulation of woody debris.
- Reduce the density of tall trees so that their canopies do not touch.

Ingress and Egress/ Roads

Ingress (access for wildfire suppression equipment and personnel) and egress (ways for residents and visitors to escape the wildfire) are crucial to wildfire preparedness. Communities with only one way in and out, such as Candy Kitchen, face a greater risk during wildfires. Planning evacuation routes at the community or fire district level is one way to identify hazards ahead of time. Actions to improve ingress and egress during a wildfire may include thinning along roadways, road condition improvements, and signage directing residents where to go during an emergency. The best course of action to remedy one way in one way out roads would be to add a second access route and the possibility of this should be assessed on a case by case basis. However, in many cases this is impractical and, in this case, widening roads and adding or improving turn outs will help ease this problem to allow for a two-way flow of traffic.

Many secondary roads that provide access to areas where wildland fires Cibola County are in poor condition and will hamper response by firefighters and evacuation by residents during an emergency. In addition, many communities have one way in and one way out access roads. An evaluation of roads in each district would be helpful to indicate where turnarounds are needed and to establish a point of no return for large fire apparatus. Specific roads that need evaluation and improvement are identified in the Priority Actions section.

Human Sources of Ignition

On average in the U.S., human-caused wildfires burn over half of the total acres burned by wildfire in a given year. Even in the Southwest, where lightning ignites many wildfires, people are responsible for many of the largest, most severe fires. Many of the human-caused ignitions

originate from abandoned campfires and downed powerlines. Others arise from vehicles, fireworks, cigarettes, cook stove sparks, and burning yard waste. Understanding the patterns of human ignitions and effectiveness of prevention strategies is therefore crucial to reducing the impact of high-severity wildfire.

Since human ignitions are preventable, increasing education and awareness could be the key to reducing the number of large wildfires. In the planning and implementation of education and awareness initiatives, it is important to keep in mind:

- Prevention efforts should recognize the variation in how and where people start wildfires
- Prevention should be tailored to mode of ignition
- Outreach should be implemented to reach people who are likely to build campfires

For more information on human ignitions, risk awareness, and wildfire prevention in New Mexico, refer to FSG's March 2018 report: *[Increasing Wildfire Awareness and Reducing Human-Caused Ignitions in Northern New Mexico](http://forestguild.org/wildfire_prevention)* (http://forestguild.org/wildfire_prevention).

Campfires

In outreach and education efforts, it is important to understand the causes and patterns of ignition. Especially considering the 2018 Diener Canyon Fire was started by an abandoned campfire, it is necessary to redouble efforts at campfire education. The above-cited report provides the following insights into campfire ignitions:

- Abandoned campfires account for 44% of human-caused wildfires in the Southwest since 2011.
- 80% of wildfires started by campfires are within a quarter mile from a road.
- Campfire bans have demonstrated limited effectiveness, possibly due to their great importance to people recreating.

Power Lines

Electric power lines are increasingly becoming common ignition points for large wildfires in New Mexico. Three major incidents have occurred since 2011, and in May 2018 a power line ignited the Los Alamos fire, which burned 67 acres in two hours. Part of the prominence of power line ignitions can be attributed to the fact that the conditions that often lead to downed powerlines—specifically high winds—also contribute to increasing the intensity and reach of wildfires, as well as the difficulty of firefighting (Mitchell, J. W. 2009).

In April 2013, the Forest Service held a summit with western utilities in Los Angeles to discuss the issue; the New Mexico representative identified 505 miles of transmission line at risk. This number likely underestimates the risk, as smaller energy cooperatives are underrepresented in this listing.

Greater collaboration is needed between the CWPP core team and local (Socorro Electric Cooperative, and Continental Divide Energy Cooperative) utility companies. Strategies for reducing ignition potential from power lines include encouraging off the grid solar systems and burying future or expanded power lines networks. Communities and landowners have a role to play to identify power lines, poles, and transformers that are in poor condition or have excessive brush underneath and contact utilities or other authorities. Volunteer Fire Departments should

work with communities to identify areas where power infrastructure poses the risk of wildfire ignition. Regular inspections of lines, poles, transformers, etc. will help reduce the likelihood of human-caused wildfires from faulty power infrastructure.

Evacuation

Residents should be ready to leave as soon as evacuation is recommended by officials, in order to avoid being caught in fire, smoke, or road congestion. Evacuating early helps firefighters keep roads clear of congestion and lets them move more freely to do their job. Resources are available to help residents prepare ahead of time for evacuation (see the resources for residents section). Early preparation can help residents with everything from packing lists—essentials can include taking a supply of critical medications—to how to address pets and livestock.

For advice and insight into preparing for evacuation, see the Fire Adapted Community’s March 2018 article, [Firsthand Accounts: How to Prepare Your Community for a Wildfire Evacuation](#).

There is also additional information about preparing for evacuations at <https://facnm.org/evac>

At the community level, the 2020 CWPP update includes a priority action item to establish safety zones and/or evacuation staging areas. A safety zone is an area without burnable fuel that is large enough so that the distance between the firefighters and flames is at least four times the maximum flame height (NWCG, 2014). These should be established and made known in a community but it should be made clear to residents that these safety zones do not allow any reduction in other preparations, since they should only be relied upon as a last resort.

Smoke Impacts

Wildfire smoke can have significant negative effects on public health. This can be the case even from fires occurring miles away or after a local fire has been controlled. Some demographics are particularly at risk, including people over 65 years old, under 18, and pregnant women. People whose health may already be compromised may also be particularly vulnerable to the effects of wildfire smoke; for this reason, special consideration should be given to preparing hospitals, assisted living facilities, and other health service centers. Residents with heart or lung diseases or any kind of respiratory issues are at particularly elevated risk of adverse smoke impacts.

Personal Smoke Mitigations

For residents, the Center for Disease Control recommends the following measures to decrease the impact of wildfire smoke:

- Check local air quality reports.
- Keep indoor air as clean as possible by keeping doors and windows shut; consider obtaining high efficiency particulate air (HEPA) filters to aid in keeping indoor air clean. Installing a HEPA filter in bedrooms can provide around 8 hours nightly of clean breathing, regardless of air conditions outside and during waking hours.

- Avoid activities that increase indoor pollution such as smoking, burning candles, spraying aerosols, vacuuming, and using fireplaces or gas stoves.
- Assuming you are in a safe place, away from the fire, limiting physical exercise can help to limit smoke inhalation. During exercise, people can increase their air intake as much as 10 to 20 times over their resting level.
- Seek shelter in a designated evacuation center or away from the affected area if necessary.
- Above all, seek to limit your exposure to smoke.

Community Smoke Mitigations

For community leaders, here are some considerations and steps ahead of a potential wildfire to prepare your communities:

- “Safe spaces” should be designated and prepared where community members can have a respite from smoky air. Communities should explore installing integrated HEPA filters at key locations such as public libraries, hospitals, nursing homes, and schools so that places provide clean air to vulnerable populations during their normal daily activities.
- Organizers should consider suspending certain outdoor activities and events if air quality is poor. Outdoor sports events and school recesses are examples of activities that can be cancelled, postponed, or moved indoors to minimize exposure.
- Create a system to supply sensitive individuals with portable HEPA filters during times of smoke impacts. HEPA filter loan programs have been implemented on small scales that succeed in providing clear for the most vulnerable residents in an area.

Helpful websites include:

- [New Mexico Fire Info, Smoke Management](#) - New Mexico Fire Information - an interagency effort by federal and state agencies in New Mexico
- [Air Now, Interactive Map of Smoke Monitors & Fire Current Conditions](#) - Environmental Protection Agency
- [Smoke and HEPA Filter Loan Program](#) - from Fire Adapted New Mexico
- [Protect Your Health on Smoky Days](#) - from New Mexico Environmental Public Health
- [Wildfire Smoke Frequently Asked Questions](#) - Environmental Protection Agency
- [New Mexico’s Smoke Management Program](#) - New Mexico Environment Department’s Air Quality Bureau

Communication

Communication is one of the best tools for reducing the impact of wildfires. Good communication allows firefighters to efficiently suppress wildfires, residents to evacuate if the need arises, and responders to help those in need. In order to ensure good communication during an incident, it is crucial to have lines of communication established before an incident.

Emergency responders from the County, VFDs, and state and federal agencies need to be sure they understand each other’s communications protocols and requirements. Pre-wildfire season meetings of key individuals is a worthwhile investment to ensure seamless communication

during a wildfire. These meetings also serve to build the personal connections and trust that can be very important during an incident.

Emergency Notifications

In addition to effective communication between first responders a way to communicate emergency information to residents and visitors is crucial, especially in the event of an evacuation. The most basic version of this is going door to door during an emergency but this takes time and is usually only employed at the last moment during the early stages of an incident or during large incidents after additional staff has been brought in to handle this task. An up to date rural addressing system will aid in these door to door efforts. A coordination meeting between the different agencies that manage address data would be helpful to ensure that there aren't gaps in accountability across the county.

Another essential communication tool that is already in place in Cibola County to assist with wildfire and other emergency notifications is the "Code Red" reverse 911 system. The Code Red system will send notifications to all landline phones in a selected area and either registered cell phones or all cell phones in an area. This allows for mass notifications to be sent out in the event of any sort of emergency. It also allows for more frequent one-way communication from emergency managers, pre-evacuation notices, and any other early warnings can be sent out in the early stages of emergencies well before evacuation notices.

Code Red will work for cell phones and landline phones within a geo-located area. Encouraging residents to sign up for the Code Red system is listed as a priority action in Table 4.

Communication for First Responders

Communication is a challenge in some parts of Cibola County. Steep canyons and mountains limit the extent of radio and cell phone coverage in many areas. The lack of timely communication is a concern that we heard of from many community members and core team members, but in 2020 a plan is in place to install several additional repeaters throughout the county to help remedy this problem. Eliminating radio dead spots will provide for firefighter safety and effective response by allowing better communication with the county dispatch and fellow first responders.

Community members and firefighters both lack cell phone coverage in many areas of Cibola County. Working with telecommunication companies to extend this coverage would be also be a very worthwhile investment for managing wildfire suppression and evacuation. Both of these tasks are identified as priority actions in Table 5.

Community Emergency Response Team

The Federal Emergency Management Agency (FEMA) has a program called Community Emergency Response Team (CERT) to help community members take part in the response to disasters. The CERT program helps volunteers use training learned in the classroom and during

exercises to assist others in their community after a disaster when professional responders are not immediately available to help.

More information on the CERT Program can be found on the following web pages:

<https://www.ready.gov/community-emergency-response-team>

<https://www.fema.gov/news-release/2003/05/29/community-emergency-response-team-cert-program>

Planning for Post-Fire Recovery

As a wildfire will eventually occur in, or around, Cibola County, it is important to plan for how the county and individual communities will recover after a wildfire. NMSF provides an excellent resource for thinking about post-fire recovery called *After Wildfire* (www.afterwildfirenm.org). For this CWPP we briefly cover some aspects of this topic. We recommend that the Core Team reconvene to discuss this topic at length and create detailed plans for the County.

Immediate Post Fire Safety

The foremost post-fire recovery concern is safety. After a wildfire, it is important that residents do not return to their homes or businesses until officials have determined it is safe. Because utility services can be disrupted by wildfire:

- Do not drink or use water from the faucet until officials say it is okay;
- Use extreme caution around trees, power poles, and other tall objects that may have lost stability during the fire;
- If you have a propane tank or system, contact a propane supplier, turn off valves on the system, and leave valves closed until the supplier inspects your system.

In addition:

- Be on the lookout for smoke or sparks that may still be burning.
- Be aware that smoke levels in the air may continue to be hazardous to health even after residents are allowed to return following an evacuation.

Flooding and Erosion

Post-fire flooding is a major concern. The map in appendix 1*** displays post-fire debris flow hazards and illustrates which population centers are most at risk from flooding. In these maps, post-fire debris flow was modeled using a standard methodology (Cannon et. al., 2010). Debris flow hazard is a combination of probability of a debris flow and potential volume of debris flow. An important caveat is that this dataset shows where debris flows will originate and not necessarily where they will end up.

The heavy monsoon-season rains common in New Mexico in the late summer and early fall can often bring flooding and debris flows after wildfire. These storms are typically local, very intense, and of short duration, delivering large amounts of rain in a short period of time. When such storms develop over burned areas, the ground cannot absorb the rain quickly enough,

forcing the water and topsoil to run off the burned area, accumulate in streams, and produce flash floods. Post-fire debris flows also pose a risk to water infrastructure, such as reservoirs and pipe systems.

FEMA flood risk maps can still help guide post-fire preparation for flooding. Some homes and businesses may want to reevaluate their flood insurance coverage as post-wildfire floods are often more extensive than the flood risk might indicate before a wildfire.

Important resources related to flooding in Cibola County can be found at:

- NM Flood, Projects and Maps: https://nmflood.org/?page_id=336
- New Mexico Multi-hazard Risk Portfolio: https://nmflood.org/wp-content/uploads/2013/10/NM_MHRP2015.pdf

NM After Wildfire Guide

The New Mexico *After Wildfire* guide (<http://afterwildfirenm.org/>) is a comprehensive resource for communities seeking to develop emergency plans ahead of potential wildfires. Besides offering guidelines on immediate safety and flood information, the guide also includes the following sections:

- Mobilizing your community – provides points to help local governments and community leaders get started on recovery coordination
- Who can help? - describes programs and services provided by agencies and non-profits for communities and individuals affected by wildfire
- Post-wildfire land management treatments to facilitate recovery
- Financial tips for individuals and communities after wildfire

The guide suggests that communities designate a Post Fire Coordinator (or multiple coordinators) to work directly with local, state or federal agencies, emergency response officials, volunteers, and other stakeholders to address needs and seek assistance. Post Fire Coordinators may be part of the CERT mentioned above in the Wildfire Preparedness section.

It may be appropriate to implement post-wildfire recovery efforts, such as erosion control or planting, in affected forested areas. First, however, communities should be sure to identify values-at-risk post-wildfire and focus on treatments that reduce the threats to those values. The *After Wildfire* guide has a catalogue of potential treatments that include:

- Seeding and mulch to reduce erosion;
- Contour log felling and other erosion barriers;
- Installation of check dams and other channel treatments; and
- Culvert modifications and other road treatments.

Collaboration

A CWPP must be a collaborative effort involving all parties with a stake in wildfire risk in the County. This ensures that all view points are represented and the setting of priorities is balanced

among all groups (Fleeger, 2008). The 2020 CWPP update was a collaborative effort between the CWPP core team and CWPP stakeholders and the community at large. This CWPP features a robust outreach effort that included Core Team and Community Meetings, three surveys customized to the recipient, targeted interviews, an interactive map viewer, and outreach to the community through print, online, and social media.



Figure 3. First Core Team Meeting. Core Team members discussing communities at risk during meeting on November 14th 2019

Table 6 below lists CWPP stakeholders who were invited to participate in the 2020 Cibola County CWPP update process. In addition to these individual invitations, the CWPP update was also publicized through multiple outlets, including: the Cibola Citizen newspaper, community Facebook pages, Cibola County’s website, as well as through flyers distributed by core team members. Core team member, Anna Larsen, promoted community meetings and participation in the resident surveys at numerous tabling events that were completed for the 2020 census. The CWPP update team also solicited input from area residents during community meetings and via an in-depth survey that was advertised at meetings, on the Cibola County website, on numerous community Facebook pages, on FSG’s website, and on flyers that were sent out to be posted by core team members. Additionally, surveys were sent to all the district fire chiefs and other fire management professionals in the county to gather their input.

Table 9: Cibola CWPP 2020 Update Stakeholders

Cibola CWPP 2020 Update Stakeholders		
Name	Organization	Title

Dustin Middleton	Cibola County Office of Fire and Emergency Management	County Fire Marshal/ Emergency Manager
Kate Fletcher	Cibola County Manager	County Manager
Bob Kuipers	Northwest NM Council of Governments	RTPO Program Manager
Gary Porter	Cibola County Road Department	Public Works Director
Tony Mace	Cibola County Sherriff Office	Sheriff
Tammy Legler	Cibola/ Grants Chamber of Commerce	Chamber of Commerce
Billy Moore	Cibola County Solid Waste Disposal	Executive Director
Tony Mace	Cibola County Sheriff	County Sheriff
Todd Haines	New Mexico State Forestry	District Forester
Robert Brown	New Mexico State Forestry	District Fire Chief
Santiago Grijalva	Department of Public Safety District 6	Sargent
James Jenkins	Department of Public Safety District 6	Sargent
Richard Montoya	Natural Resource Conservation Service	District Conservationist
Desiree Chavez	Natural Resource Conservation Service	Soil Conservationist
Mark Bahl	Continental Divide Energy Cooperative	Operations Manager
D. Montoya	Socorro Electric Cooperative	Safety Manager
Tom Whelan	Cibola General Hospital	CEO
Anthony Pacheco	Mt. Taylor Ranger District Cibola NF	Fire Management Officer
Alvin Whitehair	Mt. Taylor Ranger District Cibola NF	District Ranger
Kevin Parish	El Malpais National Monument	Fire Management Officer
Anna Larson	Cibola County	Planning Coordinator/ GIS
Darryl McCullough	Cibola County	Rural Addressing
Chrissy Largo	Navajo Nation Council, Office of the Speaker	Navajo Nation, Office of the Speaker
Larry Maynard	NMDOT District 6	Engineer
Lisa Boyd-Vega	NMDOT District 6 - Assistant Engineer	Assistant Engineer
Valdis Neha	Zuni Forestry/ Fire	Forest and Fire Management Officer
Shirley Piqosa	Acoma Pueblo	Tribal Forester
Shane Lucario	Acoma Pueblo	Forestry Technician
Raymond Lucero	Laguna Pueblo	Natural Resource Manager
Larry Chee	Navajo Nation	Fire Chief
Doug Watchman	Navajo Nation Emergency Mgt.	Emergency Services Liaison
John Williams	Navajo Nation Fire and Rescue	Fire Captain
Johnson Benallie	Navajo BIA	Regional Assistant FMO
Duwayne Eriacho	BIA Fire Management - Ramah	Navajo BIA - Ramah

Dale Glenmore	BIA Navajo Region Office	Regional FMO
Bela Harrington	BIA	FMO So. Pueblos Agency
Darryl Wilson	BIA Fire	Fire Prevention Specialist
Cynthia Spidle	Lava Soil and Water Conservation District	District Administrator
Todd Richards	Bureau of Land Management	Fire Management Officer
Jan Niclas	New Mexico DOT	Assistant District Engineer
Delane Baros	New Mexico DOT	District 6 Public Information Officer
Kilino Marquez	Seboyeta Land Grant	President
James Chavez	Cubero Land Grant	President
Fire Departments		
Joseph DeSoto	Cubero Fire District #8	Chief
Clarence Martinez	San Rafael Fire District #9	Chief
Joey DeMartino	Lobo Canyon Fire District #10	Chief
Preston Neff	Bluewater Village Fire District #11	Chief
Mike Sweet	Candy Kitchen Fire District #17	Chief
Rose Blood	Fence Lake Fire District #18	Chief
David Blood	Fence Lake Fire District #18	Chief
Scott Brown	El Morro Valley Fire District #21	Chief
Betty DeSoto	Cubero Fire Administrator	Cubero Fire Administrator
Andrew Valiencia	Grants Fire and Rescue	Lieutenant
Michelle Serrano	Grants Fire and Rescue	Lieutenant
Robert Hays	Grants Fire	Chief
John Garcia	Laguna Fire	Chief
Keith Austin	Milan Fire	Chief
Vacant	Acoma Fire Department	Vacant

Core Team

The CWPP core team makes up the heart of the CWPP. This group of County officials and individuals from other organizations participate in gathering information for the CWPP, and guide the setting of priorities and designation of WUI and Communities at risk. For a CWPP to function and lower wildfire risk in the county it is crucial that the CWPP Core Team continue to gather well after the CWPP is completed and coordinate efforts to match the priorities set in the plan. Table*** below lists the members of the CWPP core team that participated in 2020. This list should be modified as the Core Team changes.

Table 10: Cibola CWPP Update Core Team

Name	Organization	Title
Dustin Middleton	Cibola County Office of Fire and Emergency Management	County Fire Marshal/ Emergency Manager
Bob Kuipers	Northwest NM Council of Governments	RTPO Program Manager
Robert Brown	New Mexico State Forestry	District Fire Chief
D. Montoya	Socorro Electric Cooperative	Safety Manager
Anthony Pacheco	Mt. Taylor Ranger District Cibola NF	Fire Management Officer
Kevin Parish	El Malpais National Monument	Fire Management Officer
Anna Larson	Cibola County	Planning Coordinator/ GIS
Raymond Lucero	Laguna Pueblo	Natural Resource Manager
Duwayne Eriacho	BIA Fire Management - Ramah	Navajo BIA - Ramah
Darryl Wilson	BIA Fire	Fire Prevention Specialist
Cynthia Spidle	Lava Soil and Water Conservation District	District Administrator
Todd Richards	Bureau of Land Management	Fire Management Officer
Jan Niclas	New Mexico DOT	Assistant District Engineer
Mike Sweet	Candy Kitchen Fire District #17	Chief
David Blood	Fence Lake Fire District #18	Chief
Keith Austin	Milan Fire	Chief
Sam Berry	Forest Stewards Guild	SW Fire and Fuels Program Manager
Gabe Kohler	Forest Stewards Guild	SW Program Coordinator

Key Informant Interviews

To capture in-depth information from core team members, FSG conducted interviews with 9 key informants from the core team. Key informants were chosen to represent the range of organizations, agencies, and tribal governments across Cibola County. Interviews were conducted over the phone and typically lasted around forty-five minutes. Nine interviews were completed, and interviewees represented 7 different organizations.

Cibola CWPP Update Key Informant Interviews		
Name	Organization	Title
Anna Larson	Cibola County	Planning Coordinator/ GIS
Dustin Middleton	Cibola County Office of Fire and Emergency Management	County Fire Marshal/ Emergency Manager
Darryl Wilson	BIA Fire	Fire Prevention Specialist
Duwayne Eriacho	BIA Fire Management - Ramah	Navajo BIA - Ramah
Kevin Parish	El Malpais National Monument	Fire Management Officer
Raymond Lucero	Laguna Pueblo	Natural Resource Manager

Shirley Piqosa	Acoma Pueblo	Tribal Forester
Anthony Pacheco	Mt. Taylor Ranger District Cibola NF	Fire Management Officer
Valdis Neha	Zuni Forestry/ Fire	Forest and Fire Management Officer

FSG used a interview guide that covered various topics, including: fuels treatments, communication, travel/transportation, evacuation/alerts/notifications, training, suppression resources, Fire Adapted Communities, human ignitions, post fire preparations, communities at risk, and accomplishments.

Community Meetings & Outreach

Several meetings for Cibola County residents and stakeholders were held to discuss progress made since the 2006 CWPP; to determine updates to communities at risk ratings and priority rankings; and to identify priority action items for the 2020 CWPP update. The community meetings engaged members of various communities throughout the county to discuss issues of wildfire protection and preparedness.

Some questions posed at these meetings engaged homeowners in assessing their own wildfire risk prevention practices, such as open space thinning, fuel breaks, and defensible space zone treatments.

Table 12 below provides an overview of all core team and public meetings convened for the 2020 Cibola County CWPP update and organizations that were represented at those meetings.



Figure 4. Public Meeting Participants of the public meeting on February 26th

Table 12: Cibola CWPP Meetings

Date	Meeting Type	# of Participants	Representation (organizations, e.g. Forest Service, State Forestry, etc.)
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November 14, 2019	Core Team	16	Candy Kitchen VFD, New Mexico State Forestry, BIA fire management, Socorro electric cooperative, Forest Service, Pueblo of Laguna, Fence Lake VFD, Milan Fire Department, BLM, Cibola County, NPS, Lava Soil and Water Conservation Districts, Northwest New Mexico Council of Governments, NMDOT, Forest Stewards Guild
February 26, 2020	Core Team	9	Cibola County, BIA, Candy Kitchen VFD, Forest Stewards Guild, NMDOT, Northwest New Mexico Council of Governments
February 26, 2020	Public Meeting	7	Forest Stewards Guild, private land owners, Northwest New Mexico Council of Governments
March 13, 2020	Fire Chiefs Meeting	12	Northwest New Mexico Council of Governments, Cibola County, Milan Fire, Cubero Fire, San Rafael Fire, SFMO, El Moro Valley, Pine Hill EMS, Fence Lake VFD, Candy Kitchen VFD

To prompt discussion between core team members and their communities about wildfire risk throughout the county, the FSG created an interactive wildfire hazard map viewer. The interactive wildfire hazard map viewer provided core team members with an accessible tool for facilitating conversation about wildfire hazard. The viewer uses GIS map layers based on modelled and observed data, including: communities at risk, integrated fire hazard, conditional flame length, and landscape burn probability. The interactive wildfire hazard map will be stored on Cibola County’s website to ensure that it is accessible for future discussion about wildfire protection.



Figure 5. Core Team Meeting. Participants using printed maps to identify priority fuel treatments

The interactive wildfire hazard map and large, printed maps were used as a tool through all community meetings to facilitate location-specific conversation about wildfire protection.

Outreach about the CWPP update was completed through in-person visits, where flyers were hung on bulletin boards, and through social media and web outreach, where digital flyers were posted to Facebook pages and websites.

In-person Outreach: San Rafael Fire Station, Candy Kitchen Fire Station, Fence Lake Community Center, San Fidel School, Village of Milan, City of Grants planning meeting, and El Morro.

Social Media and Web Outreach: Cibola County website, Candy Kitchen Community Facebook, Tierra Verde Community Facebook, El Morro Valley Community Facebook, Seboyetta Community Awareness Facebook, Grants Fire and Rescue Facebook, City of Grants Facebook,

Community Surveys

In addition to meetings, stakeholders and members of the public were invited to complete a survey that helped inform priorities and action items for the 2020 update. This survey was available on the FSG’s website, was advertised in the Cibola Citizen, on multiple community Facebook pages, on Cibola County’s website, at community meetings, and on bulletin boards throughout the county on flyers distributed at CWPP meetings.

The working team solicited input from area residents on their actions, priorities, and concerns regarding wildfire risk mitigation. Of the 23 residents to respond, all are full-time residents. Together these residents represent the communities of Timberlake Ranch, Fence Lake, High Country Ranch, Ramah, and Candy Kitchen. Timberlake Ranch is well-represented in the survey and 9 of 23 the respondents were from the Timberlake area.

Perceived Risk to Wildfire

In the surveys, residents were asked to rank their level of concern regarding aspects of life, property, or community in Cibola County that could be vulnerable to wildfire. The results are as follows, ranked from highest concern to lowest:

1. *Life:* Personal safety and safety of family members | Loss of life | Damage to water supply or watershed | Disruption of livestock or agriculture
2. *Property:* Damage to home | Decreased property value | Loss of insurability
3. *Community:* Post-fire erosion | Smoke impacts | Loss of recreational activities | Economic disruption |

Residents reported that the areas in Cibola County that were at highest risk for wildfire included forested areas due to overstocking and the buildup of fuels, as well as communities with a high frequency of absentee landowners, and rural areas with poor evacuation routes and insufficient means of emergency communication.

In regard to personal property, residents felt that the three factors that made their home most vulnerable to wildfires were: non-fire-resistant building materials; living in areas that are not easily accessible or that have long emergency response times; and the buildup of fuels on neighboring properties. Following this, residents felt that a buildup of fuels on their own properties, human ignition sources, and a lack of water resources made their homes vulnerable to wildfire.

Wildfire Mitigation

Community members were asked to prioritize what elements of community wildfire preparedness were of highest importance. Reduction of hazardous fuels, evacuation routes, and defensible space around homes were described as the highest priority. Homeowner education, increasing the capacity of the VFDs, and emergency notification systems followed as also being of high priority. Post-fire recovery was ranked as relatively high priority.

Most residents (16) reported having implemented defensible space thinning treatments around their home. Thirteen residents reported making improvements to their driveways or evacuation routes. Four reported making fire hardening structural improvements to their homes. Four have also completed hazardous fuel reduction through thinning trees in the land surrounding their home.

Additionally, residents reported that every year in the spring they prepare for wildland fire season in a variety of ways. Ten of the twenty-three residents stated that they remove or cut vegetation surrounding their homes. The removal of pine needles from the ground, roof, or gutters, is a practice that five of the resident's report practicing each spring. Seven residents stated that they move firewood away from structures. While two residents also report repairing or installing screens to block sparks of embers.

Residents were asked to rate their level of comfort with various methods of reducing vegetative fuel loads. Residents ranked various methods of reducing vegetative fuel loads as follows:

1. Cutting and chipping hazardous fuels within the community.
2. Cutting and chipping hazardous fuels on public or private lands adjacent to the community
3. Using prescribed burns on their property.
4. Using prescribed burns on public or private property adjacent to the community.

Over half of the residents who responded (16) said they would do wildfire mitigation work on their property regardless of what anyone else was doing. Two individuals stated that they would only do wildfire mitigation work if it was fully funded by the government or private agencies, and another four stated that they would only do mitigation work if they could be convinced that they work would increase the survivability of the their home during a wildfire. Six individuals said they would only do mitigation work if the work could be cost-shared with government or private entities.

Residents were asked to rank constraints that prevented them from taking action to reduce the risk of wildfire on the property. Constraints ranking from high to low included:

1. Financial costs
2. Time constraints
1. Neighboring properties not taking action, therefore reducing effectiveness of actions taken on property
3. Lack of information regarding the removal of slash and hazardous fuels
2. Difficulty finding a contractor to complete work
6. Belief that actions will not be effective in reducing risk to property
7. Lack of awareness of wildfire risk
9. Do not want to change the aesthetics of property

10. Restrictions on cutting trees

Approximately one-half of the respondents (11) reported that they would not be interested in having a home hazard assessment conducted on their property, with the remaining 52.2% (12 residents) stating that they would be interested. The highest interest for specific mitigation trainings were for Firewise training (6) and for prescribed fire implementation training (6). Five residents (33%) expressed interest in receiving training through Ready, Set, Go! Three were interested in Fire Adapted Communities training. Additionally, residents specifically stated to increase resilience to wildfire, communities needed to be focused on thinning overstocked forests, reducing slash through the production of wood pellets or mulch, keeping properties clear of refuse, and having free or reduced fee dump days for county residents.

Respondents specifically stated that they saw a need for increased education and outreach related to wildfire risk mitigation for all citizens throughout the county.

Evacuation

In the event of an evacuation, nearly three-quarters of the respondents (17) stated that they would leave their home. Six residents reported that they would be likely to leave, and none reported that they were likely to stay. No respondents reported that they would not leave their home in the event of an evacuation.

Residents were also asked if they would know what route use and if they had a pre-arranged meeting place for family members in the event of an evacuation. Twenty-one of the Twenty-three respondents reported that they knew what route they would use in the event of evacuation, and seven of the twenty-three respondents also stated that they had a pre-arranged meeting place for family members. Over three-quarters of the respondents (18) do not have a “go kit” or evacuation kit with supplies prepared.

When asked about preferred methods to receive information regarding wildfire notices and evacuations, most respondents stated that they would like to receive notification by text message. This was followed by an email or a phone call.

Themes from the Community

The community meetings hosted for the CWPP update helped to shed light on serious issues that community members face and deem to be important. One of the themes voiced in multiple meetings and surveys was the need for increased educational outreach and extension for all citizens of Cibola County. Areas that residents reported they felt would be valuable to have increased education on include prescribed fire implementation, Fire Adapted Communities, Firewise, wildland firefighting, and Ready, Set, Go!.

Another recurring theme was the question of interagency cooperation. For firefighters and emergency responders to gain essential resources, and to improve response times to wildfires across the remote parts of Cibola County, participants agreed that a pre and post season meeting would be a good first step. Good interagency cooperation will help ensure an effective wildfire response even for communities that may be hard to access for Cibola County Fire and EMS.

Furthermore, one citizen recommended better cooperation around the management of roads and the possibility of a year-to-year alternating responsibility to improve the patchiness of road quality due to changes in jurisdiction.

Accomplishments Since 2006 CWPP

There have been many accomplishments that have advanced Cibola County's wildfire preparedness since 2006. One goal of A CWPP update is to catalog these accomplishments and determine how wildfire risk has been reduced. However, with a 14-year span since the original plan this documenting all accomplishments could become an enormous task. Listed here are the highlights of accomplishments that we discovered in writing the 2020 update. We expect that many other important accomplishments occurred that are not listed here.

Private Land

- Wildfire risk reduction thinning and structural hardening was completed around important infrastructure in the Ft. Wingate community, including treatments around schools.

Tribal Lands

- The Navajo Nation re-did their prevention plan in 2019 and has been proactive about communication to the public about Firewise and Ready, Set, Go! programs.
- Fire prevention is a top priority and is receiving funding from the BIA.
- The Ramah Navajo forestry program recently completed a Wildland Urban Interface thinning in the Old Alligator project starting in 2014 and ending in 2019 with pile burning.
- Planning for The Whites project on the center of the reservation and along the eastern border of Candy Kitchen is underway.
- The Cerro Alto project was completed between the Old Alligator and Whites project areas.
- Fuels treatment of 300 acres of Pueblo of Laguna land is awaiting NEPA approval.
- The Pueblo of Laguna Volunteer Fire Department was red-carded and recently purchased a new brush truck, PPE, training, and added a crew boss that can train additional resources.
- Pueblo of Acoma is re-instating their fire crew and is in the process of writing a fire management plan.
- Forestry day in Pueblo of Acoma has increased awareness of general forestry issues.
- Pueblo of Acoma has completed multiple thinning projects since 2006, some through the Reserve Treaty Rights Lands (RTRL) program, and some through a partnership with the Lava Soil and Water Conservation District.
- Hazardous fuels treatments have been completed along the western boundary line of the Ramah Navajo and Zuni lands.

- Ramah Navajo and Zuni communities have improved awareness of wildfire risk through Facebook outreach and prevention technicians.

US Forest Service

- Communication between Cibola County and the US Forest Service has improved since 2006.
- The Bluewater project area of the Zuni Mountain Collaborative Forest Landscape Restoration Project (CFLRP) has improved forest health and reduced wildfire risk on FS lands within Cibola County.
- Planning for the Puerco project area of the Zuni Mountain Collaborative Forest Landscape Restoration Project (CFLRP) is complete and treatment of the 50,000 acres through mechanical treatments and prescribed fire will begin in the coming years.
- Treatments on the East La Jara project have decreased the risk of high severity wildfire on 1,500 acres of land near Mt. Taylor.
- Treatments on Black Mesa have decreased the risk of wildfire and improved wildlife habitat over 14,000 acres.

Fire District Improvements

- There is an effort to create a regional training facility for suppression, law enforcement, etc.
- El Morro Valley Volunteer Fire Departments have shared fire prevention information with the public from the National Fire Protection Association (NFPA).
- WUI thinning along the border between Catron County and Cibola County.
- Wildfire risk reduction treatments to protect Candy Kitchen and Northern part of El Malpais National Monument.

NM State Lands

- WUI thinning completed near Bluewater lake to protect the community. The intention is to follow up on this treatment with prescribed fire.

Wildfire and Prescribed fire

Managed

- The Lava fire was an unplanned ignition that was managed to burn 2000 acres.
- The Whiskey fire was an unplanned ignitions that was managed to burn 600 acres.
- The Rendija RX was a planned ignition that burned 4,000 acres in Cibola County in February of 2019.

Suppressed

- The 2018 Bluewater/Diener fire burned ~13,000 acres across Cibola and McKinley counties.
- The 2014 Asayii fire.

Community Organizations

- Cibola County and individual communities have created Facebook pages to improve communication with the public.

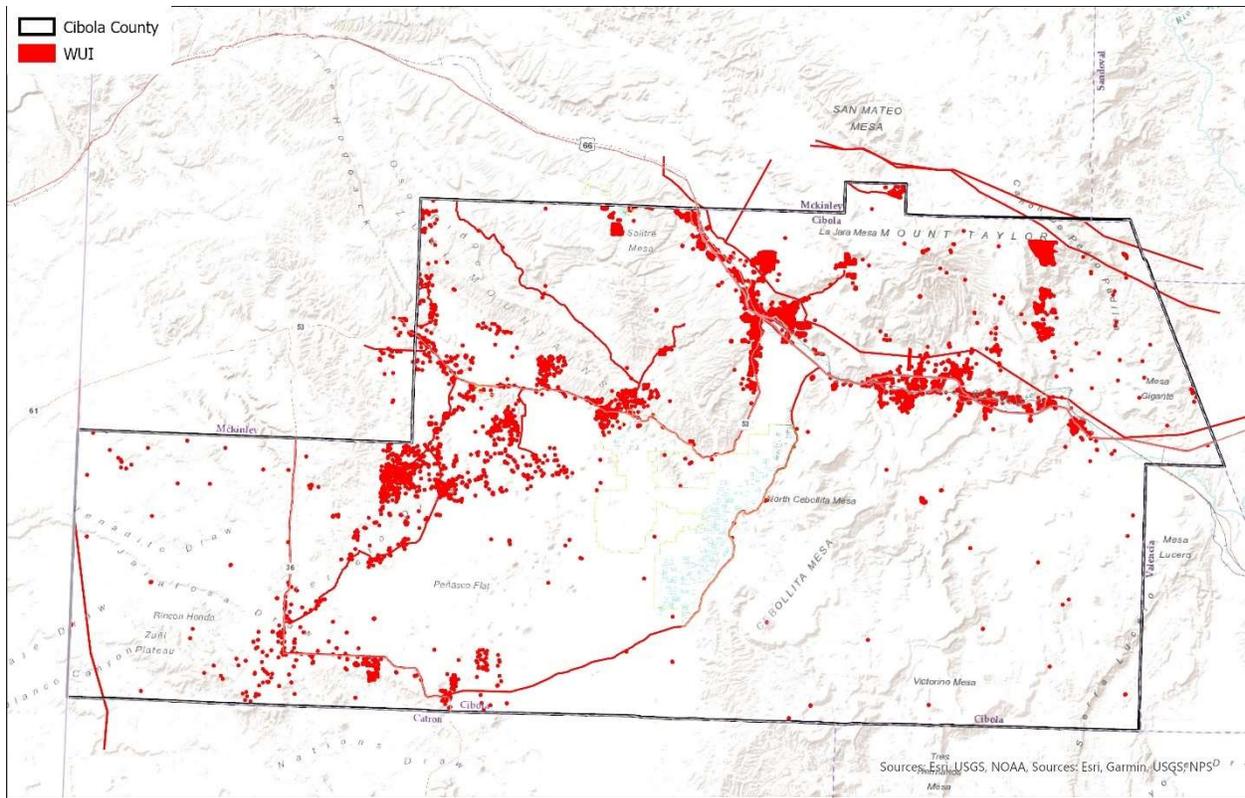
Wildland Urban Interface and Communities at Risk

Refining the Wildland Urban Interface (WUI) and Communities at Risk included in a CWPP are crucial parts of the updating process. They provide ways to define and sort the places that people live and work with where they intersect with areas at risk of wildland fire. The purpose of these two sets of information is to assist in prioritizing and justifying actions that will lead to people's increased safety and preparedness for wildland fire.

In this 2020 update we refined the WUI delineation for Cibola County extensively and defined 32 new communities at risk. Both were determined collaboratively between members of the core team and stakeholder groups identified in Tables 6 and 7*** and through geospatial analysis of population centers and infrastructure.

Wildland Urban Interface

The WUI is defined as any area where human infrastructure intersects with wildland fuels that cause a fire hazard (Radeloff, 2005). Having a clearly defined WUI area helps focus fuel treatments and other fire mitigation work that needs to happen in the County. The Core Team decided to take a more expansive definition of the WUI based on other examples from the US that use consistent buffers of identified values at risk throughout the County. Although most WUI definitions use potential fire behavior as a main driver when defining WUI our method emphasizes the human infrastructure within an area (Stewart, 2007). This approach creates a consistent definition of WUI uninfluenced by potential fire behavior, that we believe is more inclusive and provides all communities and individuals the justification they need to proceed with their own fire mitigation efforts and recognizes what they value most within their communities. This approach is also applicable for the predominantly rural Cibola County, where modeled fire behavior shows there is some risk of fire throughout the county. When this WUI layer is coupled with wildfire modeling it creates a robust and layered approach that allows for interpretation by the Core Team, Stakeholders and the Community as they plan their wildfire mitigation activities.



Cibola County Community Wildfire Protection Plan 2020
Wildland Urban Interface



Figure 6. Wildland Urban Interface Map

WUI Determination Process

This plan bases its WUI definition on specific values at risk as determined in 2020. There are 219,809 total acres of WUI in the county included in the 2020 CWPP. During the WUI determination process drafts of the WUI area were reviewed by the Core Team and community and refined based their local knowledge. These values were included in the 2020 WUI layer with a specific buffer distance for each value.

The input data included:

- Address Locations and Values at risk – The Cibola County GIS specialist, and Pueblo and Tribal GIS specialist provided point data for all addresses in the county, these points were visually verified and buffered at a .2 miles.
- Microsoft Building Footprints – this data set contain computer identified building footprints across all 50 states. This data captures building locations that may not have been included in address data. This data was inspected and cleaned for use in Cibola county. Verified points were buffered at .2 miles.

https://wiki.openstreetmap.org/wiki/Microsoft_Building_Footprint_Data

- Primary Escape Routes – The Cibola County GIS and Pueblo and Tribal GIS departments provided map of all inventoried roads. The Core team identified primary escape routes and these buffered at a tenth of a mile.
- Cell towers and Radio Repeaters- The Cibola County GIS and Pueblo and Tribal GIS departments also provided a map of location and they were buffered at a quarter mile.
- Powerlines – Major transmission lines were buffered at a tenth of a mile to indicate areas that are more prone to ignitions and should be considered for treatment.
- Utility Infrastructure – Major solar and wind utility installations were included and buffered at .2 miles.
- Recommendations of the Core Team - This data was further amended based on new construction identified from satellite imagery and recommendations and knowledge of the Core Team.

Communities at Risk

Following New Mexico CWPP guidelines a CWPP must delineate communities and assign them a community hazard rating (CHR) of low, medium or high wildland fire risk (NMC, 2015).

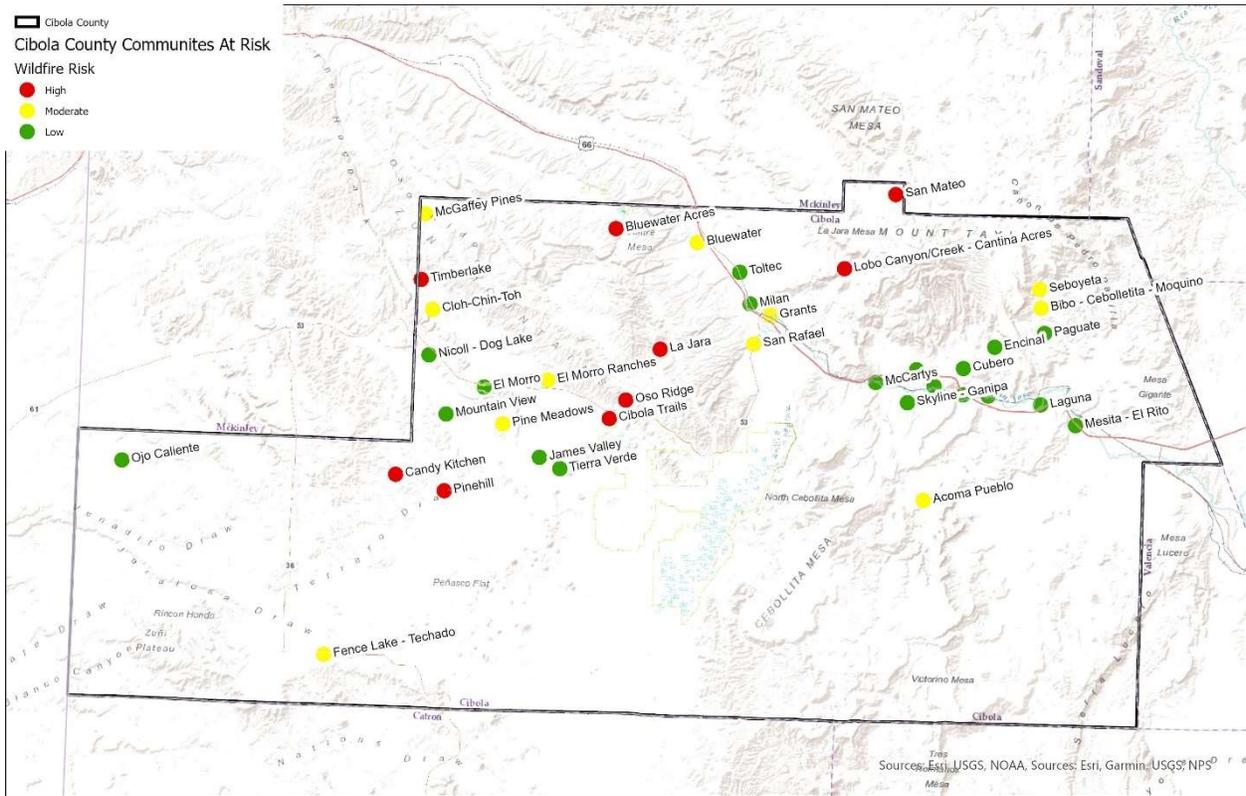
40 communities in Cibola County were assessed for wildfire risk, including the 8 communities assessed in the 2006 CWPP. A community may be a town or a locally know area where people live, including HOAs, neighborhoods and more loosely defined areas. Many of these communities are combined with adjacent nearby communities where the fire risk is similar, these grouped communities can be seen in the table below. We intended to cover every community in the County with this list, so even if it is not explicitly listed, the risk rating for nearby communities should apply. The community assessment began with fire modeling completed as part of this CWPP process, (see Section ***) vegetation type and cover, access to communities, and vegetation adjacent to communities. Descriptions and maps showing the products used in the analysis are located in the appendices and at the online wildfire viewer.

The CHRs take in factors such as the relative fire risk, ingress and egress and other factors specific to each community that change a community’s risk rating such as fuel type and local VFD capacity. Ratings were initially determined by surveying the core team at the first meeting. To propose initial CHRs those surveys results were combined with the fire hazard analysis for the county that combines fire intensity and probability. The initial ratings were further refined by recommendations of the Core Team, the Fire Chiefs Association, and the public based on actions that have happened in specific communities to reduce fire risk, improvements of the structural ignitability of buildings within the communities, and efforts of communities to become more fire adapted or establish themselves as a designated Firewise Community.

This list should be used to prioritize how fire mitigation work occurs in the county. Also, this list should be updated as conditions change that might lower a community’s risk rating. To see Communities at Risk, see the map *** in the appendix or visit:

<https://foreststewards.maps.arcgis.com/apps/webappviewer/index.html?id=33057e62491341158f747e748c8dcee9>

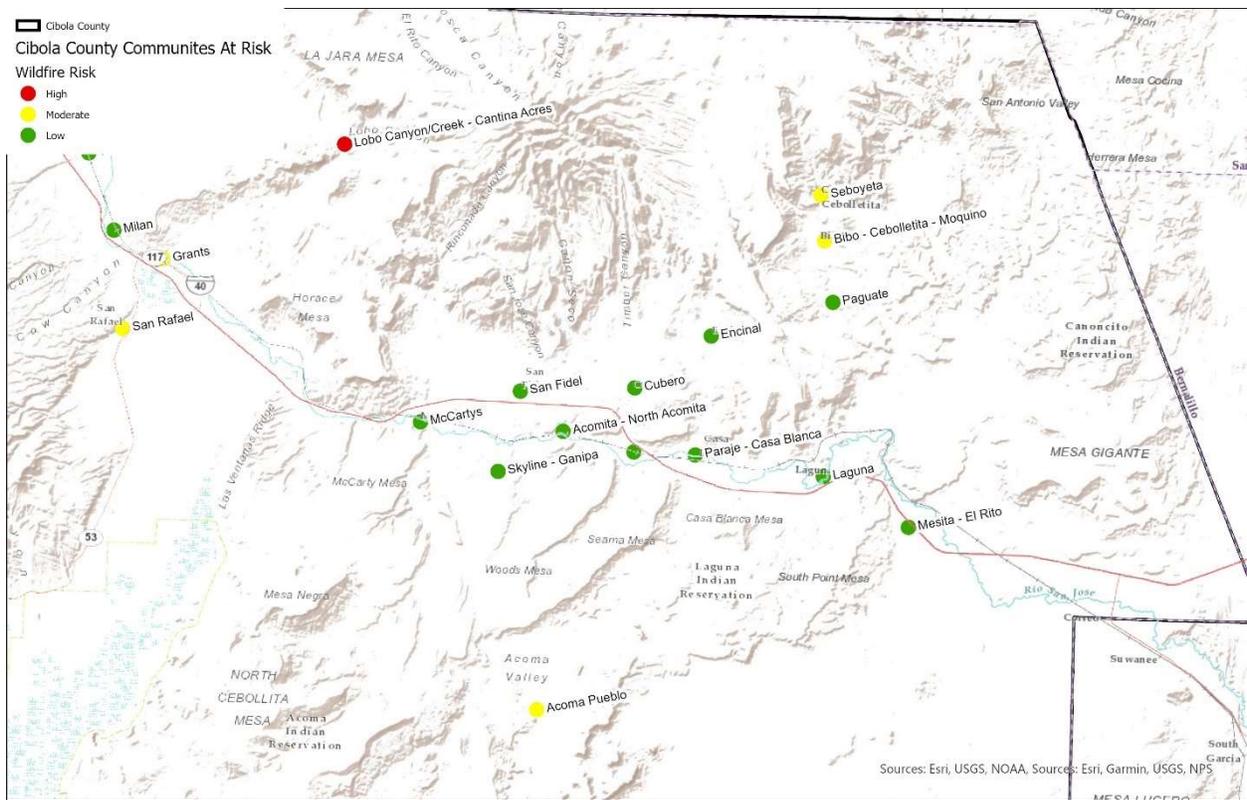
2020 Communities at Risk	2020 Rating	2006 Rating
Bluewater Acres	High	Moderate
Candy Kitchen	High	Moderate
Cibola Trails	High	N/A
La Jara	High	N/A
Lobo Canyon - Cantina Acres	High	Moderate
Oso Ridge	High	N/A
Pinehill	High	N/A
San Mateo	High	Low
Timberlake	High	N/A
Acoma Pueblo	Moderate	N/A
Bibo - Cebolletita - Moquino	Moderate	N/A
Bluewater	Moderate	Moderate
Cloh-Chin-Toh	Moderate	N/A
El Morro Ranches	Moderate	N/A
Fence Lake	Moderate	N/A
Grants	Moderate	N/A
McGaffey Pines	Moderate	N/A
Pine Meadows	Moderate	N/A
San Rafael	Moderate	N/A
Seboyeta	Moderate	N/A
Techado	Moderate	N/A
Acomita - North Acomita	Low	N/A
Cubero	Low	N/A
El Morro	Low	Low
Encinal	Low	N/A
James Valley - Tierra Verde	Low	N/A
Laguna	Low	N/A
McCartys	Low	N/A
Mesita - El Rito	Low	N/A
Milan	Low	Low
Mountain View	Low	N/A
Nicoll	Low	N/A
Ojo Caliente	Low	N/A
Paguete	Low	N/A
Paraje - Casa Blanca	Low	N/A
San Fidel	Low	N/A
Seama - Philadelphia - Harrisburg - New York	Low	N/A
Skyline - Ganipa	Low	N/A



Cibola County Community Wildfire Protection Plan 2020
Communities at Risk



Figure 7. Communities at Risk Map



Cibola County Community Wildfire Protection Plan 2020
Communities at Risk



Figure 8. Communities at Risk Map, Detail of the I-40 corridor.

Fire Hazard Analysis

To guide the creation of the CWPP it's crucial to identify areas of the greatest wildfire hazard so that actions can be prescribed to fit the conditions on the ground (Williams et al., 2013). Using a data-driven process to locate these treatments can lead to better outcomes and a better cost-benefit ratio (Low et al. 2010). An accurate assessment of hazards can also inspire action as stakeholders and residents see the threat they are confronted with (Jakes et al, 20017) Wildfire risk is determined by finding the intersection of where areas of hazard occur with values that are placed at risk by that hazard (Bar Massada et al. 2009).

To establish a rating of wildfire risk for Communities at Risk the stakeholders of the CWPP core team used a collaborative process to identify important values in the county, including human infrastructure such as homes, communication towers, or powerlines, as well as areas that provide key ecological services such as primary watersheds (Fleeger, 2008). By determining the fire hazard rating at those values, a preliminary assessment of the fire risk was made. This risk assessment was then modified with by adjusting ratings according to local knowledge. . Even though the hazard map does not show the conditions of any one real-world fire, it shows how fires under a single set of modeled fuel and weather conditions will burn across the entire county to aid in comparing one area relative to another area.

To support this process we created updated spatial models of fire hazard within the county using the Interagency Fuels Support Decision System (IFTDSS) (WFMRDA, 2018) (Drury et al. 2016). An appropriate analysis area was developed in IFDTSS that takes into account fuel and topographic conditions (WFMRDA, 2019). These data include Fuel Model, Canopy Cover, Stand Height, Canopy Base Height, Canopy Bulk Density, Aspect, Slope, and Elevation. (Funk et al. 2009).

To capture the impact that treatments and wildfires have had on fuels we edited the base Landfire data. We used the New Mexico Vegetation Treatment Geodatabase to identify areas that had received treatment and retrieved wildfire extents from the USGS database to modify the base data for the landscape (NMFWRI, 2019; USGS, n.d.).

Outputs

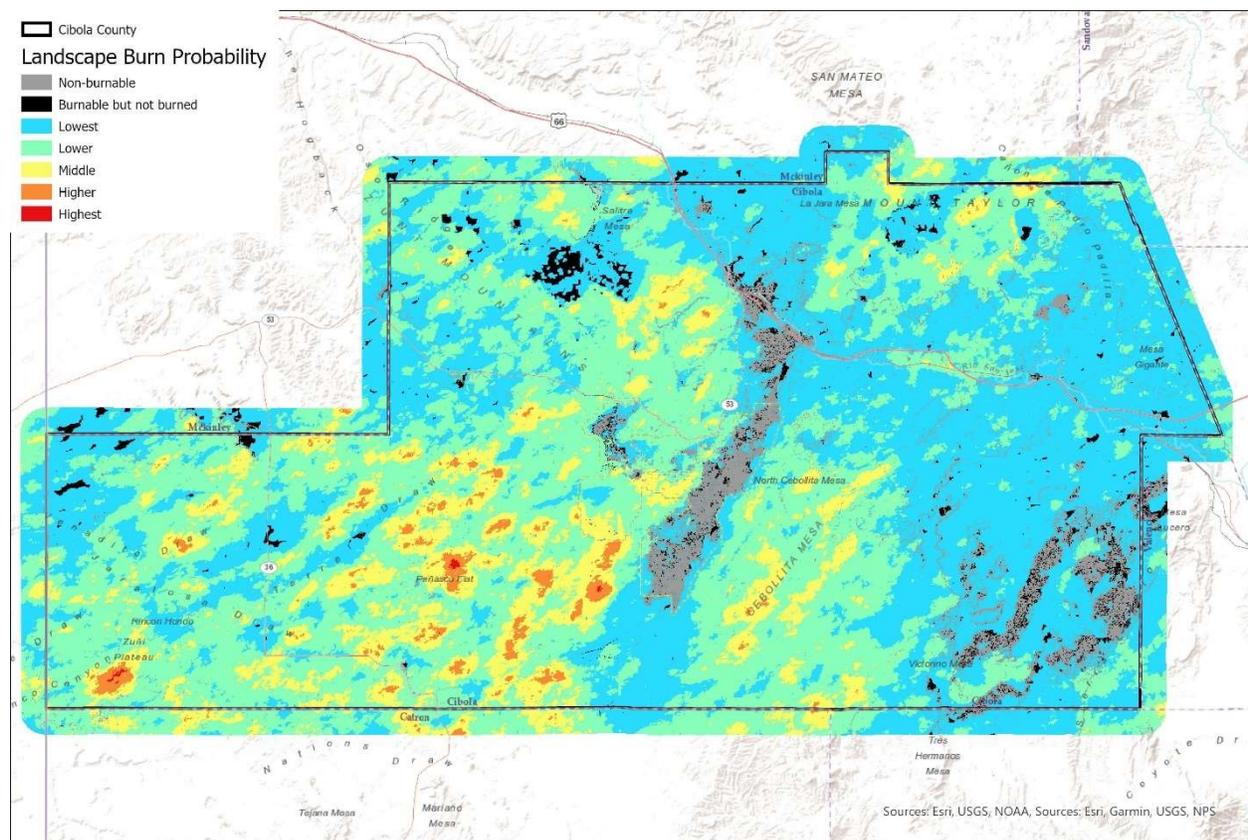
IFTDSS calculates the likelihood of wildfires occurring and wildfire intensity based on climatic and fuel moisture conditions for a single burn period (Scott, Thompson, & Calkin, 2013). The output of the Landscape Burn Probability is conditional flame length, which is the average flame length for all simulated fires, and the probability of a fire occurring. These two outputs are combined to form an integrated hazard rating (WFMRDA, 2019).

The inputs for LBP are the user-created landscape, randomly generated ignitions, and weather conditions input by the user, and some fire model selections. Weather inputs required are 1, 10, 100 hour, live herbaceous, and live woody fuel moistures and wind speed and direction.

Weather conditions were calculated at the 97% percentile using historical data from weather station across the county.

Landscape Burn Probability

Landscape burn probability is based on the likelihood of fires occurring on the landscape. IFTDSS calculates how a fire would burn based on user inputs (WFMRDA, 2019). Within IFTDSS FlamMap simulates randomly placed ignitions on the landscape and models each burn until 98% of the pixels in a landscape have been burned. This run used ~29000 simulated fires. Burn probability is displayed graphically as a scaled ratio based on the maximum value on the map from high to low probability of a pixel burning in these simulated wildfires.



Cibola County Community Wildfire Protection Plan 2020
Landscape Burn Probability



Figure 9. Landscape Burn Probability Map

Conditional Flame Length

Conditional flame length is the average of flame lengths from every fire that was simulated during the modeling run. It produces lower values than comparable flame length modeling techniques since the models include flanking and backing fire as well as head fire, where many

flame length models calculate only head fire (WFMRDA, 2019). This creates a more realistic picture of wildfire activity in the County.

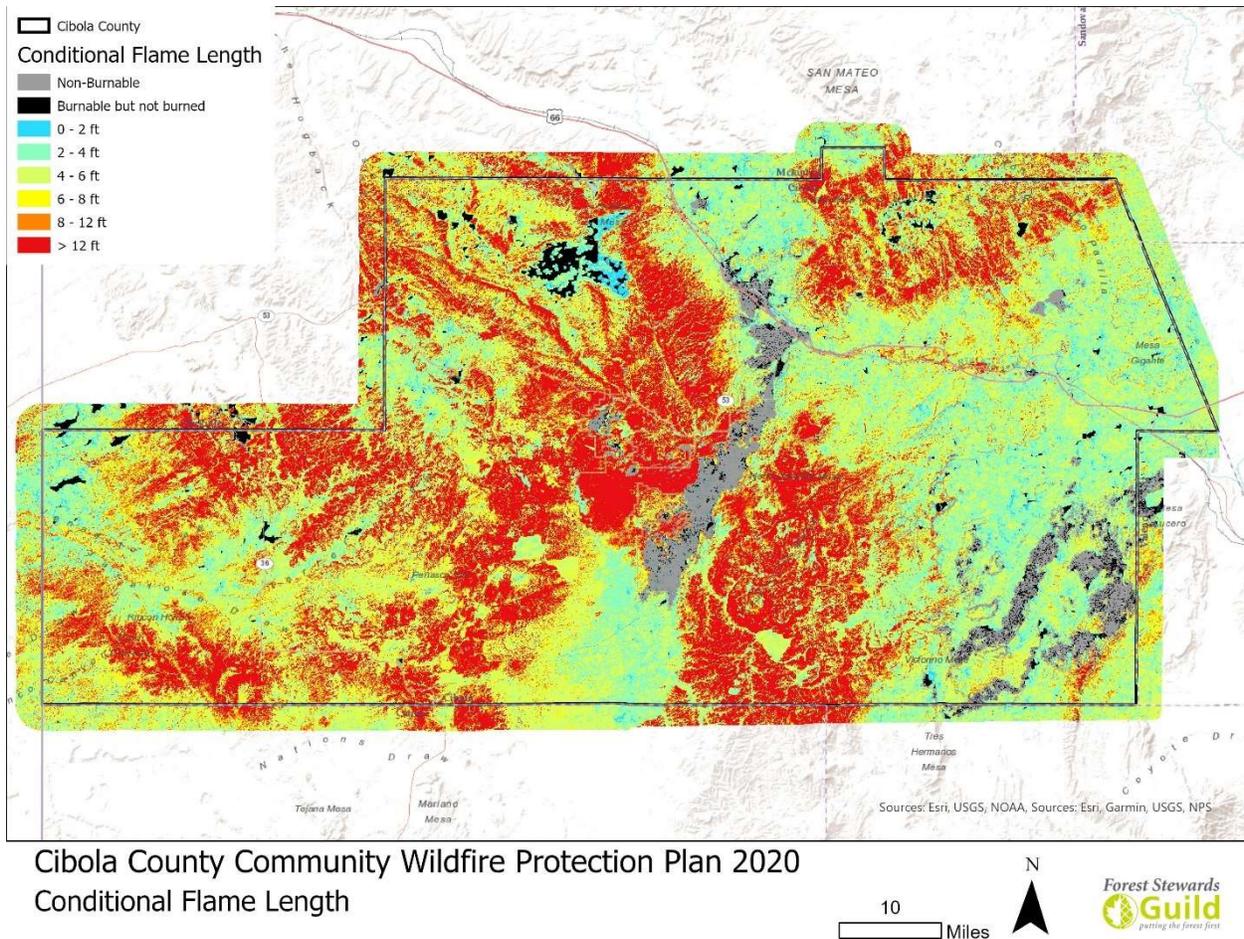


Figure 10. Conditional Flame Length Map

Integrated Hazard

Integrated hazard combines landscape burn probability and conditional flame length into a single value that identifies the fire hazard for that pixel. The Integrated Hazard map provides a way to compare one area to another. Ultimately the hazard of a wildfire, its intensity and probability of it occurring, combined with its likelihood to impact values at risk such as communities and communications points (Scott et al., 2013) will determine the priority of wildfire preparation and mitigation actions in the county.

Before this map can be used to determine wildfire risk it's important to understand its assumptions and limitations. This map represents weather conditions at the 97th percentile of weather conditions during fire season, which is a good indicator of extreme wildfires, but only represents one specific condition.

Additionally, the modeled conditions are based on assumptions of fuel data from LANDFIRE with edits from treatments and fires that may not match the reality of fuel conditions. It's crucial to understand that this map is simply a model based on one set of conditions that we chose to closely match reality as possible. Actual fires in Cibola County could be influenced by an infinite set of weather conditions that are not represented in this model.

However, given these limitations, this model will give stakeholders in the CWPP process a visual basis to help frame what they already know about wildfire hazards. The hazard map shows how fires under a single set of conditions will burn across the entire county to aid in comparing one area relative to another area.

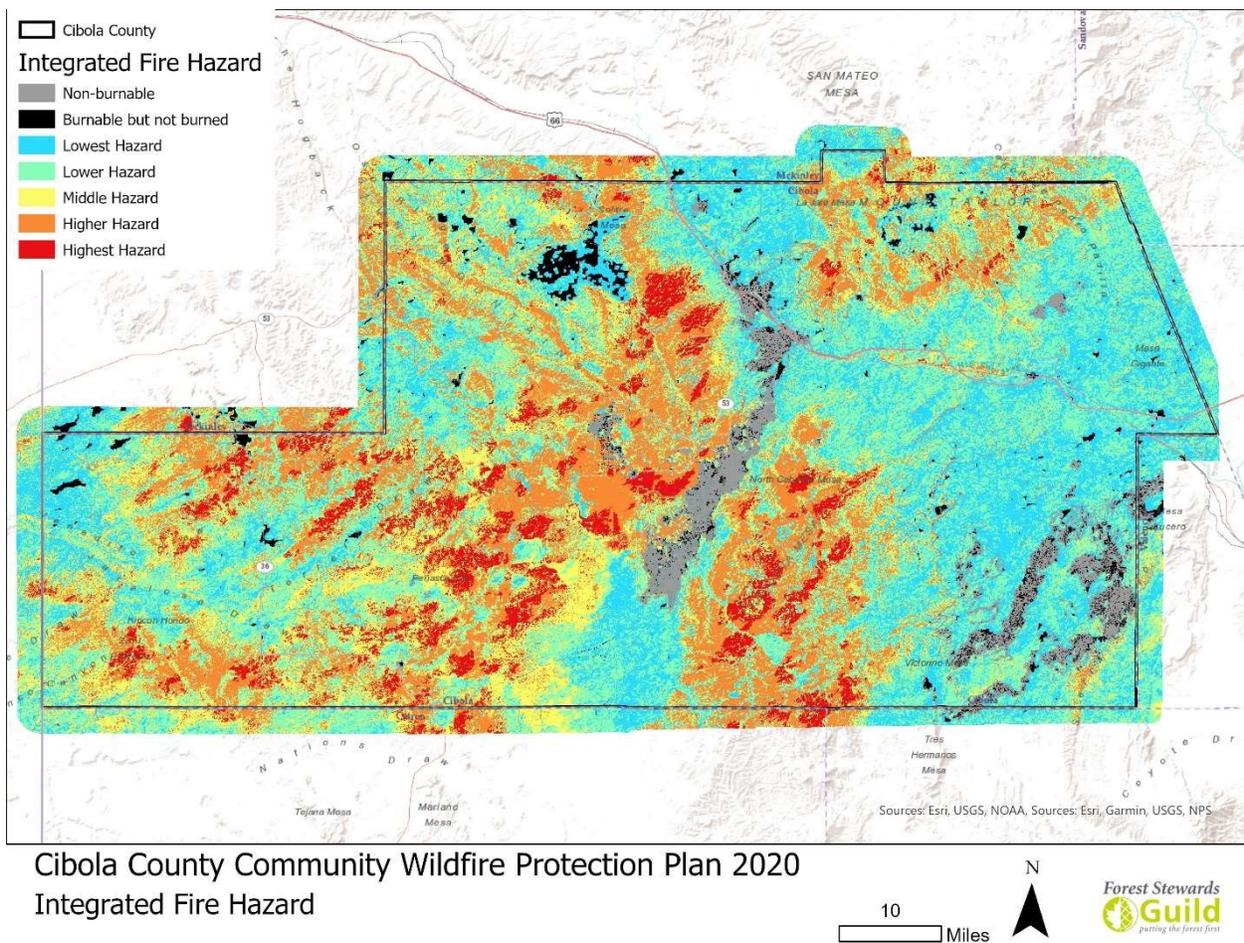
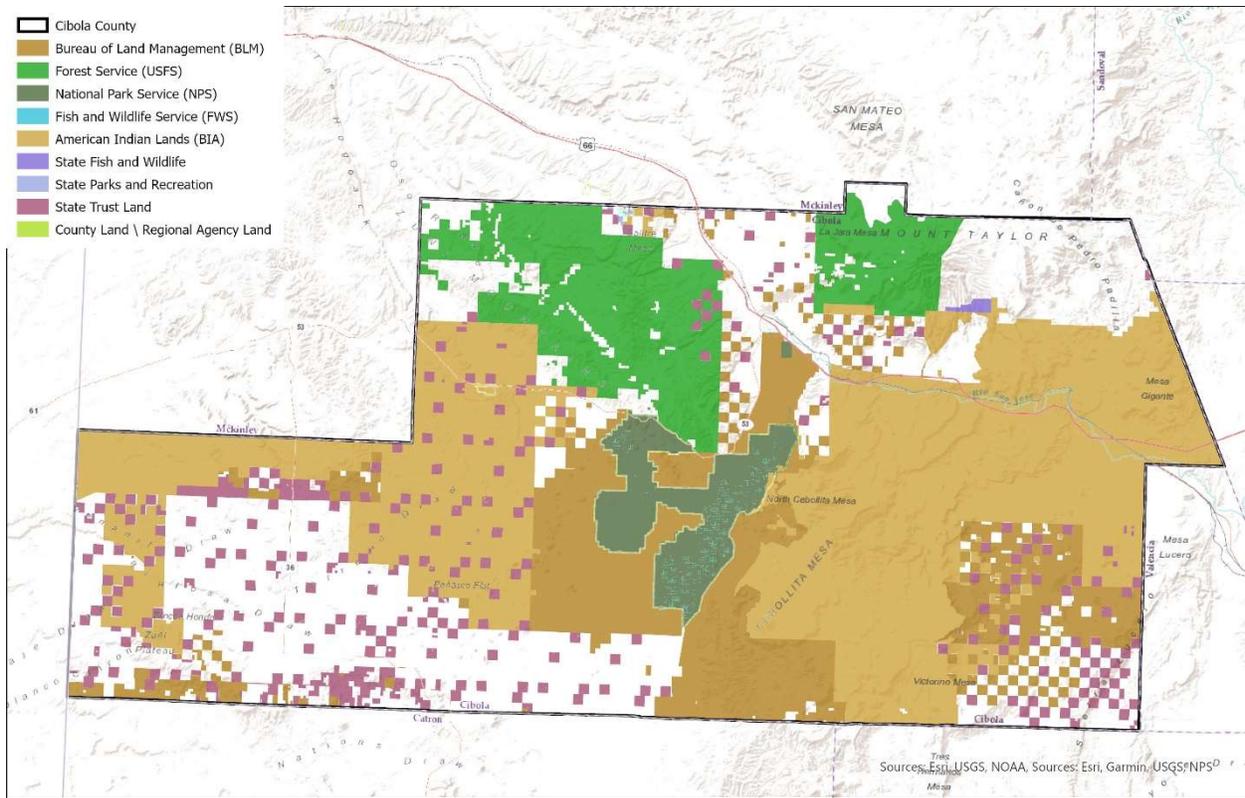


Figure 11. Integrated Hazards Map.

Maps

Surface Ownership

The surface ownership map displays the ownership of land by the various public land managers and private entities within the County.



Cibola County Community Wildfire Protection Plan 2020
Land Ownership



Figure 12. Surface Ownership Map.

- Address Locations and Values at risk – The Cibola County GIS specialist, and Pueblo and Tribal GIS specialist provided point data for all addresses in the county, these points were visually verified and buffered at a .2 miles.
- Microsoft Building Footprints – this data set contain computer identified building footprints across all 50 states. This data captures building locations that may not have been included in address data. This data was inspected and cleaned for use in Cibola county. Verified points were buffered at .2 miles.
https://wiki.openstreetmap.org/wiki/Microsoft_Building_Footprint_Data
- Primary Escape Routes – The Cibola County GIS and Pueblo and Tribal GIS departments provided map of all inventoried roads. The Core team identified primary escape routes and these buffered at a tenth of a mile.
- Cell towers and Radio Repeaters- The Cibola County GIS and Pueblo and Tribal GIS departments also provided a map of location and they were buffered at a quarter mile.
- Powerlines – Major transmission lines were buffered at a tenth of a mile to indicate areas that are more prone to ignitions and should be considered for treatment.

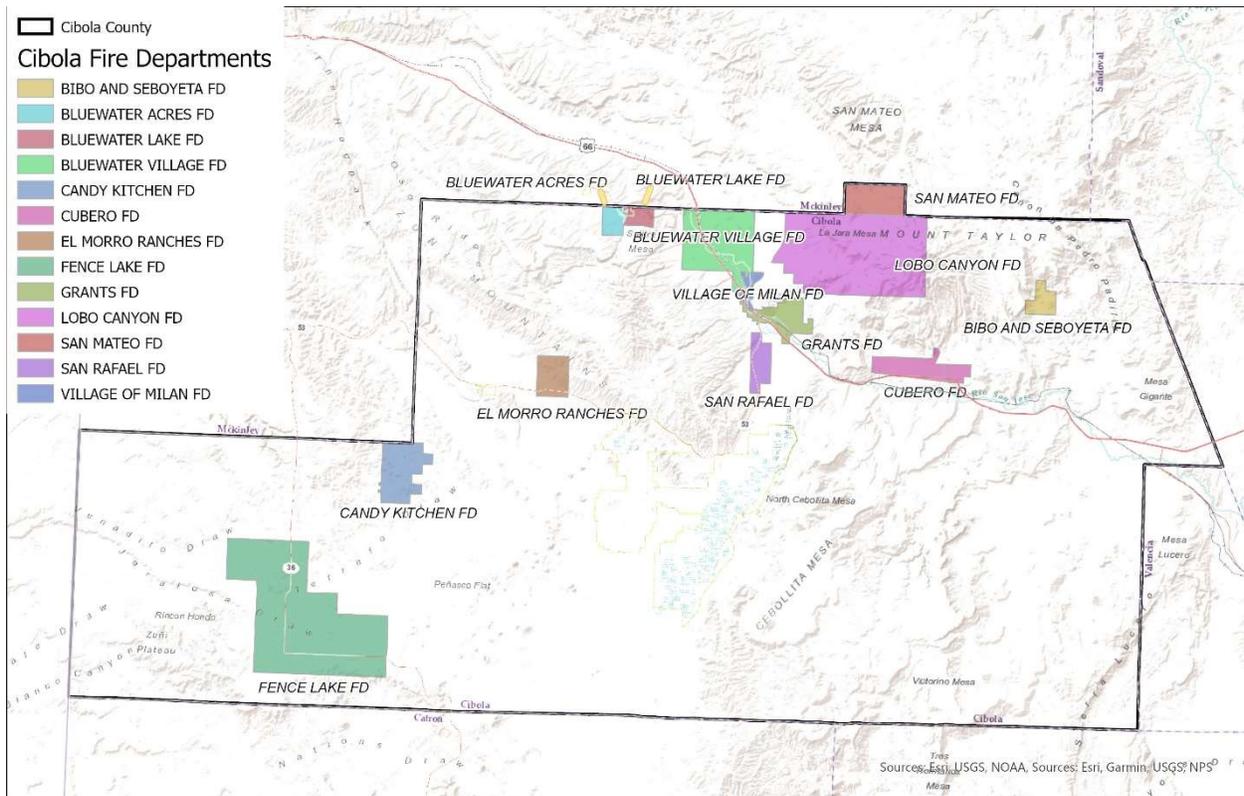
- Utility Infrastructure – Major solar and wind utility installations were included and buffered at .2 miles.
- Recommendations of the Core Team - This data was further amended based on new construction identified from satellite imagery and recommendations and knowledge of the Core Team.

Communities at Risk

This Communities at Risk Map displays communities that are at risk of wildfire within Cibola County. Some of these communities were identified in the 2006 CWPP update, however in this update several communities were added at the guidance of the Core Team.

Fire Districts

This map shows the current fire districts in Cibola County, although in practice the districts in the county provide full coverage by assisting adjacent districts and responding to areas outside of their boundaries this map has discrete boundaries that exclude large geographic portions of the county.



Cibola County Community Wildfire Protection Plan 2020
Fire Departments



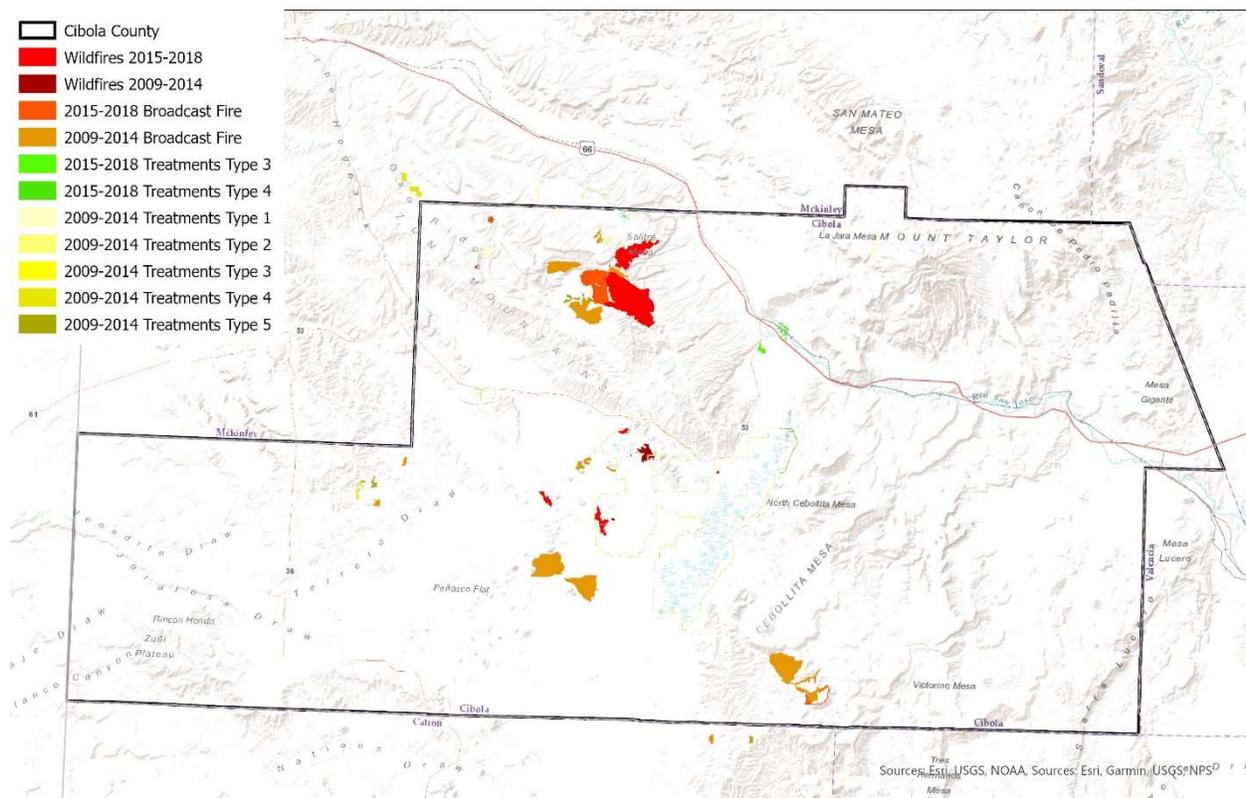
Figure 13. Fire District Map.

Fuel Treatments and Wildfires

Fuel treatments and prescribed fires were identified from the New Mexico Opportunity Map. This map is a collaborative effort to record and make available key data about projects that are occurring across all jurisdictions in New Mexico to facilitate well informed decision making for future planning. It is hosted by the New Mexico Forest and Watershed Restoration Institute (FWRI) and managed by the NMSF Division’s Forest and Watershed Health Office. The Fuel treatments on the map are lumped into 5 types.:

- Type 1 - Low intensity thinning with slash removed
- Type 2 - High intensity thinning with slash removed
- Type 3 - Low intensity thinning with slash lop and scatted
- Type 4 - Moderate intensity mastication with slash remaining
- Type 5 - High intensity Mastication with slash remaining.

Wildfire Perimeters were obtained from the USGS database. The wildfire and treatment data on this map was used to adjust the fire behavior models.

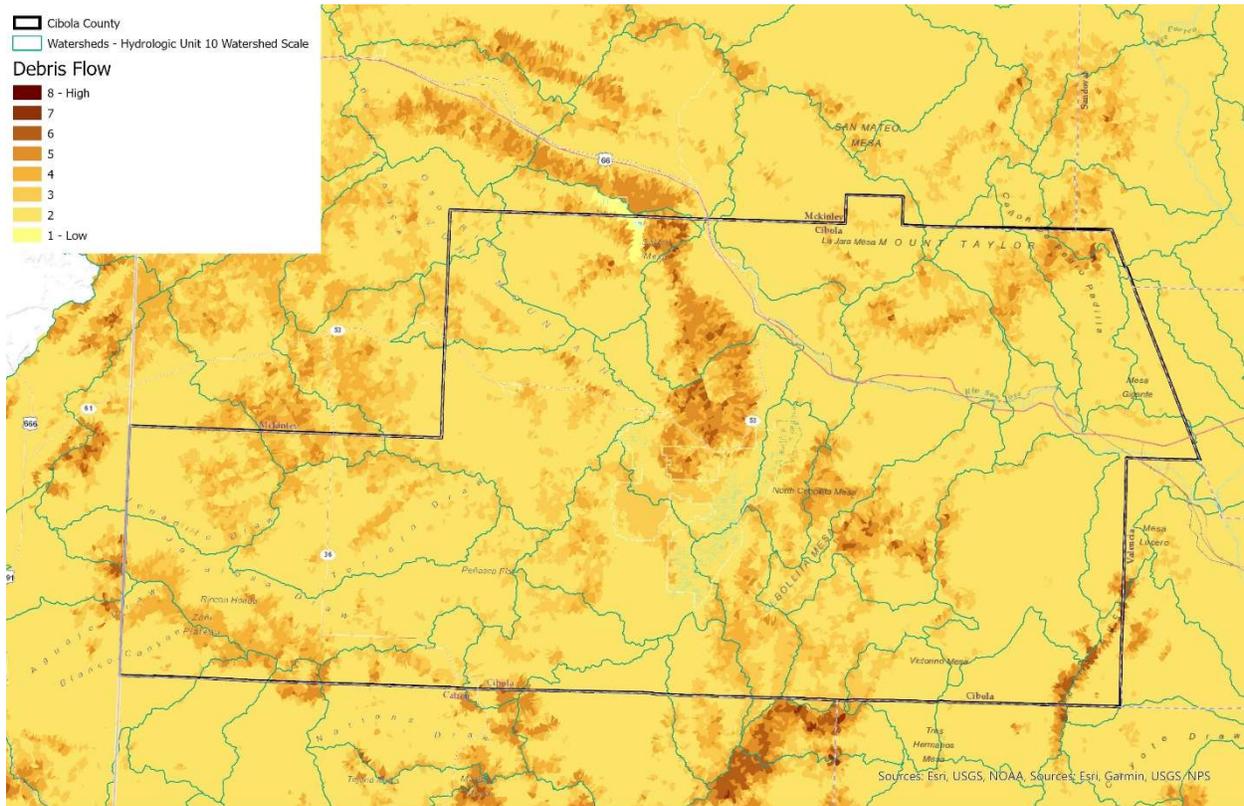


Cibola County Community Wildfire Protection Plan 2020
Treatments and Wildfires



Figure 15. Fuel Treatments and Wildfires Map.

them in the watershed. This data was compiled for the entire state, a locally specific effort for Cibola County would yield more applicable results.



Cibola County Community Wildfire Protection Plan 2020
Debris Flow



Figure 17. Debris Flow Map.

Companion Plans

The companion plans component of the 2020 CWPP update, below, is a result of stakeholder input provided at community meetings and through public surveys. These plans were analyzed and synthesized for this CWPP update.

Statewide Natural Resources Assessment

The *New Mexico Statewide Natural Resources Assessment & Strategy and Response Plans* sets an overarching vision for prioritizing and conducting natural resource management activities across the state (EMNRD Forestry Division. 2010). One of the key areas of focus of the *Assessment* is protecting watersheds from harm, particularly high severity wildfire. For Cibola County, the *Assessment* is most useful as a way to place the County’s wildfire protection efforts within a state-wide context.

http://www.emnrd.state.nm.us/SFD/documents/New_MexicoNatural_ResourceAssessment.pdf

New Mexico State Hazard Mitigation Plan

The New Mexico Department of Homeland Security and Emergency Management’s *Hazard Mitigation Plan* takes a state-wide view of both hazards and capabilities (NMDHSEM 2018):

https://drought.unl.edu/archive/plans/GeneralHazard/state/NM_2018.pdf

New Mexico All-Hazard Emergency Operations Plan

The New Mexico Department of Health’s (NMDOH) *All Hazard Emergency Operations Plan* (NMDOH 2014) establishes a guideline for the coordination of the NMDH’s resources and response to provide public health and medical services during an emergency or disaster. <https://nmhealth.org/publication/view/plan/958/>

Surrounding County CWPP’s

County	Community	CWPP Access Point	Citation
Catron		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/CatronCountyCWPP.pdf	(SNEM 2015)
	Pie Town	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/pietowncwpp.pdf	(Weaver et al. 2005)
	Datil	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/DatilCWPP.pdf	(Weaver et al. 2005)
Socorro		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/SocorroCountyCWPP_000.pdf	(Hollis and Boykin 2006)
	Middle Rio Grande	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/MRGBCWPP.pdf	(SWCA 2007)

Valencia		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/ValenciaCountyCWPP_Oct2012.pdf	(SWCA 2012)
	Middle Rio Grande	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/MRGBCWPP.pdf	(SWCA 2007)
Bernalillo		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/SandovalCountyCWPP.pdf	(SWCA 2008)
Sandoval		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/SandovalCountyCWPP.pdf	(SWCA 2008)
	Middle Rio Grande	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/MRGBCWPP.pdf	(SWCA 2007)
McKinley		http://www.emnrd.state.nm.us/SFD/FireMgt/documents/McKinleyCountyCWPPUpdate2018.pdf	(Forest Stewards Guild 2018)
	Candy Kitchen	http://www.emnrd.state.nm.us/SFD/FireMgt/documents/CandyKitchen_CWPP1_001.pdf	(BLM 2006)

[Cibola County All-Hazard Plan](#)

[Timberlake Evacuation Plan](#)

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Appendix 1: Resources for Residents

This section will be completed later. Please add additional resources as you see fit. ***

FEMA WUI information and toolkit:
<https://www.usfa.fema.gov/operations/infograms/082919.html>

FACNM

NFPA Prepare pages

After the Wildfire

New USFS Map viewer

Code Red page for Cibola County

Evac information

Resources for private landowners

Some sort of thinning standards?

Appendix 3: Meeting Notes

Appendix 4: Integrated Hazard Synthesis