Public Safety

Introduction

County residents envision their communities as safe places to live, work, and play. Public services are required to support a community's basic needs for fire protection, law enforcement, and emergency response and management. By adopting plans and ordinances and by allocating resources appropriately, the County can promote an effective level of services to satisfy these needs in a largely rural area. However, residents must be aware that the County does not offer the same level of service that one expects from a municipal government, and at times offers no services at all. Services and infrastructure in rural and isolated areas may not be available, and when available, they may instead be provided by private companies, homeowners' associations, or a special taxing district. Collaborative efforts with other agencies, organizations, and community groups are often necessary and contribute to the safety of residents and visitors.

This chapter addresses ways to minimize potential hazards associated with wildfires, floods, earthquakes, steep slopes, and the WILDLAND/URBAN INTERFACE (W/UI). The goals and policies addressed in this chapter are designed to ensure that the County plan and prepare for adequate services and facilities, either during the land development process or through appropriate government programs. These goals and policies also relate to public safety and services for fire protection, emergency management, disaster response, and law enforcement. They recognize the inter-relatedness between environmental conditions, such as changes in climate, and land use and community activities while focusing on ensuring that communities and neighborhoods remain safe.

Local Emergency Response

Accidents, medical calls, or other incidents are typically handled by local emergency response agencies. Emergency medical services are generally available in unincorporated areas through ground ambulance and air units. In addition, most local fire districts, often the first responders to all types of incidents, provide some level of medical response. However, given the vast geographic extent of the county, emergency response times can vary widely. In the most remote areas, they can be delayed. Residents must accept a certain amount of responsibility for personal safety through emergency medical training in first aid, cardio-pulmonary resuscitation (CPR), and WILDERNESS FIRST RESPONDER methods. This training can save lives when professionals are sometimes hours away.

Effective emergency response depends largely on how fast responders can locate the situation. Wireless 911 Service, also known as Reverse 911, is now recognized as a necessity for public safety. This system gives responders the caller's approximate location from cellular phones. Coconino County Sheriff's Office completed Phase II of the Reverse 911 system in 2014. In an emergency, the dispatcher can obtain a call-back number, the cell tower location, and approximate location of the caller using global positioning system (GPS) if the cell phone has a

GPS receiver. Effectiveness of this system depends on well-marked streets for responders to verify locations with accuracy. A countywide effort began in 2002 and was completed in 2014 to standardize street names and addresses and the Navajo Nation is currently undertaking a similar effort. Additional emergency response issues have arisen because other jurisdictions maintains their own dispatch and emergency response services. Calls to 911 have gone to the wrong jurisdiction and delayed response times. Continued efforts to coordinate systems and response is necessary.

Still, gaps remain in wireless cellular coverage in many of the remote areas of the County. The establishment of cellular facilities is regulated under the County's *Zoning Ordinance*. Through this ordinance the County works with cellular providers to locate future cellular locations to balance service to customers in more populated areas with the need to provide service for public safety in the more remote locations of the County.

Success of effective response also involves adequate physical ACCESS. Ideally, residential and commercial developments must incorporate at least two points of ingress and egress for adequate emergency access with roadway widths that meet the needs of the emergency vehicles. Where this is not feasible, other mitigation measures may be appropriate. Proposed development projects must also consider the availability of local emergency services.

Goal: Ensure emergency services and response to meet residents' needs.

Policies:

1. The County places a high priority on the rapid and effective identification of properties by public safety personnel and emergency response agencies.
2. The availability of adequate emergency services and emergency access routes shall be considered in the review of major developments and subdivisions. Development projects shall provide for two means of vehicular access (ingress/egress) that ensures adequate entrance and exit routes for emergency response and management activities.
3. An emergency response mitigation plan shall be incorporated in development projects located in remote areas without nearby emergency medical services.
4. The County encourages emergency medical services and response agencies to locate facilities in communities so as to be accessible to and compatible with surrounding neighborhoods.
5. The County encourages enhanced wireless infrastructure that support public safety purposes.
6. Work with the Navajo Nation and other law enforcement jurisdictions to ensure rapid response to all emergency situations within Coconino County.

Law Enforcement

Coconino County's large geographic extent and widely separated communities create challenges for law enforcement, particularly in the remote areas of the county. The Sheriff's Office is the lead law enforcement agency in such areas. Its services include community patrol, traffic enforcement, accident investigation, criminal investigation, civil process, County jail operation,

and search and rescue. The Sheriff uses COMMUNITY-BASED POLICING to encourage deputies to work actively with the community to identify and solve problems. One aspect of community-based policing is assigning deputies to outlying unincorporated areas. Volunteers supplement the staff of full-time officers, increasing the physical presence of the Sheriff's Office. However, because there will likely never be enough deputies to respond immediately to every situation in every corner of the county, residents of remote, outlying areas must accept a certain amount of responsibility for their safety and security. To ensure a reliable provision of services, it is necessary for the Sheriff's Office to work closely with other local, state, tribal and federal law enforcement agencies throughout Coconino County. Effective cooperation and coordination is especially critical in maintaining safe, crime-free rural and wildland areas where tens of thousands of tourists, campers, and recreationists congregate throughout the year.

Certain community design approaches can prevent crime by addressing conditions that create public safety concerns. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED) involves designing or modifying the physical environment at the community, neighborhood, and private property level in a way that reduces opportunities for crime and the fear of crime. Not only can CPTED be cost-effective, but it can also foster a greater sense of community.

As the county's population increases, demands for law enforcement services increase. The most common issues are related to traffic, juveniles, domestic violence, unsafe firearm use, and improper OFF-HIGHWAY VEHICLE (OHV) use. Crime-prevention programs can help relieve the pressure on law enforcement; they include community outreach and education, block-watch, and community-based youth programs. Providing adequate law enforcement services to meet the demands and expectations of an increasing population requires an ongoing assessment of needs and a corresponding commitment of resources.

Goal: Ensure safe, crime-free neighborhoods and communities.

Policies:

7. The County promotes multi-agency response to rural areas (outside a 30-mile radius of Flagstaff) coordinated through intergovernmental cooperative agreements.
8. The County places a high priority on providing high–quality, culturally-sensitive professional law enforcement services.
9. Incorporating the concepts and principles of CPTED or similar concepts is encouraged for development projects.
10. In the design of development projects, developers are encouraged to consult with the County Sheriff's Office to identify and address potential public safety issues and provide for adequate access for response and evacuation.
11. Residents and homeowner associations are encouraged to accept a certain amount of responsibility for their personal safety and security and to participate as active partners in neighborhood crime prevention programs in cooperation with the County Sheriff's Office.

12. The County encourages and supports the establishment of organized youth activities, including employment training and community service programs as a crime-prevention strategy.

Fire Protection

Although fire protection is available in cities within Coconino County, it is not universally available in unincorporated areas, especially in remote outlying areas. Property owners in such areas may assume responsibility for fire protection on an individual basis if they are not located within a fire district. Alternatively, they can join together with other property owners and petition the BOARD OF SUPERVISORS (BOS) to create a fire district. Such districts are funded by a secondary tax assessed on properties within district boundaries. Those who create a district essentially agree to tax themselves to provide fire protection.

To some extent, our zoning and subdivision ordinances and our building codes also address fire protection. For example, the *Coconino County Zoning Ordinance* requires minimum building setbacks, separation between structures, and maximum lot coverage limitations, and requirements for landscaping that promote the use of native plants and weed management. These strategies help prevent the spread of fire between structures and facilitate emergency access. The *Coconino County Subdivision Ordinance* requires varying levels of fire protection depending on the type of SUBDIVISION and density of DEVELOPMENT. Road design standards help ensure emergency access to properties. County building codes address minimum requirements for smoke detectors, EMERGENCY EGRESS from structures, and fire separation between buildings or units with different occupancy types.

Various agencies in the county manage fire protection on their respective lands. Federal agencies with fire management responsibilities include the U.S. FOREST SERVICE (USFS), the BUREAU of LAND MANAGEMENT (BLM), and the NATIONAL PARK SERVICE (NPS). The Arizona State Forestry Division has responsibility on State Trust lands. In addition, it often cooperates with federal agencies and local fire districts to respond to fires on private and public lands. The Arizona State Forestry Department provides technical assistance to private property owners who are developing and implementing plans for fire protection and fuels MITIGATION. Many local fire districts also assist property owners in reducing fuels and implementing other proactive fire-prevention strategies.

Goal: Provide for a high level of fire protection and safety.

Policies:

13. Development projects shall include adequate fire protection measures, as determined by the Board of Supervisors with input from the local fire district and/or appropriate fire management agencies.

14. The County encourages and supports property owners in forming fire districts, annexation into existing districts, or otherwise organizing formal fire protection organizations pursuant to state law.
15. The approval of fire districts should consider the long-term viability of the district to provide high levels of service.

Wildland/Urban Interface

The Wildland/Urban Interface (W/UI) is a concern in Coconino County because of the potential for wildland fires to ignite combustible structures and vice-versa**.** The W/UI are areas where homes are built near or among lands prone to wildland fires. Depending on the area of the County, fire departments and fire districts might refer to wildland fires as brush fires, forest fires, or rangeland fires. Destroying homes, property, and trees is just one way that wildfire harms an area. Wildfires also destroy HABITAT, soils, and forest health, disrupting economic stability, transportation corridors, recreation opportunities, water supplies, and scenery, as well as undermining a community's emotional and spiritual well-being.

In Coconino County, the threat of wildfire is serious because of our vast expanses of wildland and over-grown or dense forest conditions. Instead of open stands of large, widely spaced trees, forests are now over-crowded with unnaturally dense thickets of smaller trees. These stands are more susceptible to catastrophic "crown fires," which move rapidly from the ground into tree crowns and then spread from crown to crown. These high-intensity fires are more ecologically destructive than the low-intensity fires in healthy, natural forests. Fire officials recognize that the question is not whether catastrophic wildfires will occur; but when.

The *Schultz Fire of 2010* burned more than 15,000 acres in the County over the course of 10 days and cost more than $8 million dollars to fight. The subsequent impacts of this fire are still being felt as residents and the County work to reduce flood hazards resulting from the loss of vegetation. A study by NAU estimates the total impact of the fire, subsequent flooding and mitigation are ranging from $133 to $147 million. Seasonal monsoon events following the Schultz Fire caused significant damage to developed areas in the wildland/urban interface and beyond. The County has been responsible for mitigation efforts carried out in coordination with the US Forest Service, the Natural Resource Conservation Service (NRCS), the FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) and the FEDERAL HIGHWAY ADMINISTRATION (FHWA) on mitigation projects totaling $30 million dollars. Therefore, reducing the threat of severe wildfires is a priority in the W/UI. Furthermore, the boundaries of interface areas should be increased to include areas beyond the "adjacent edge" of the forest boundary line. As proven by the *Woody Fire of 2005* and the *Hardy Fire of 2010*, treated areas on the Coconino National Forest contributed to less intense fires resulting in less damage to forest health and surrounding neighborhoods. Additionally, because so many variables affect fire behavior, no set distance from homes or communities would apply in all situations. Therefore, the potential threat of wildfire should be assessed when considering all development projects in the greater vicinity of any W/UI area. Since interface areas can span across jurisdictions and authorities, interagency cooperation is essential.

The US Forest Service, National Park Service, Arizona State Forestry Department, local fire departments and fire districts have undertaken various projects and management actions to help restore natural conditions and prevent catastrophic wildfires. In addition to forest treatments involving THINNING and PRESCRIBED BURING, these agencies also typically address recreation and road management to reduce wildfire potential in the W/UI. However, agencies can only manage lands under their jurisdictions. To maximize the effectiveness of such actions, corresponding treatments are also necessary on adjacent private lands.

The County benefits from coordinated efforts to carry out forest treatment projects. The Greater Flagstaff Forest Partnership is one of the longest running forest partnerships in the nation. As a local non-profit, this organization has been effective in coordinating multi-agency efforts to promote and implement forest health treatments to reduce the threat of severe wildfires. Major efforts are underway to improve ecosystem health within our fire dependent forests. Forest treatments on a regional basis will work to thin the forests of hazardous fuel loads and increase forest and watershed health. One such initiative, the *Four Forests Initiative (4FRI)* involves restoration projects on the Coconino, Kaibab, Tonto and Apache-Sitgreaves National Forests. By restoring forest ECOSYSTEMS that support natural fire regimes, the *4FRI* project will promote thriving forest communities resulting in strengthened economies while conserving natural resources and scenic values.

Another initiative that gained approval in 2012 is the *Flagstaff Watershed Protection Project (FWPP)*. As a coordinated effort among Coconino County, the City of Flagstaff, State of Arizona, and the Coconino National Forest, prescribed forest treatments will help to reduce hazardous fuels in the mixed conifer forests in the watersheds surrounding the City of Flagstaff. These treatments will reduce the risk of devastating wildfire and post-fire-flooding in the Rio de Flag and Lake Mary watersheds. This initiative was supported by a $10 million dollar City of Flagstaff bond. It is a unique example of using municipal funds to carry out forest treatments within a National Forest located within in the city limits and in the unincorporated areas of the County as well.

To enhance these forest treatment programs, the County requires that new developers formulate plans for forest stewardship and fuels mitigation, and adopt safeguards for carrying these plans into the future. These safeguards include attaching requirements, conditions of approval, and recorded covenants to DEVELOPMENT PROJECTS to help ensure that properties are maintained in accord with the stewardship plans. Other possible actions include adopting advisory or mandatory codes designed to produce fire-resistant buildings and adopting architectural and site development standards designed to produce more “defensible” and “survivable” structures in urban interface areas.

Creating DEFENSIBLE and SURVIVABLE SPACE helps protect structures from fire. Defensible space practices include increasing the moisture content of vegetation, decreasing the amount of flammable vegetation, shortening plant height, and arranging plants to provide adequate spacing. Such practices can significantly increase the likelihood of a home surviving a wildfire; however, the term “defensible” implies that someone will be there to defend it. In reality, if a major wildfire occurs, there will never be enough fire engines to defend every home in the community. The concept of survivable space goes one step further. It refers to property design practices that increase the likelihood of structures surviving a wildfire without active intervention by fire protection services.

The National Fire Protection Association, in conjunction with other agencies and organizations, has developed the *Firewise Communities Program* to promote development practices that decrease the effects of catastrophic wildland fires. The Firewise approach considers the terrain, vegetation, building materials, and architectural design of a site. Its goal is to reduce continuous fuel sources and the chance of structural ignition.

Goal: Reduce the threat of catastrophic wildfire in the wildland/urban interface.

Policies:

16. Major developments and subdivisions in the wildland/urban interface, including more remote residential developments abutting national forest lands, must provide a forest stewardship/fuels mitigation plan and property maintenance covenants incorporating the principles of defensible and survivable space.
17. For development in the wildland/urban interface, the use of firewise landscaping and construction design and materials is encouraged to maintain defensible space. Technical assistance from the local fire district or the State Land Department for fuels mitigation and fire prevention measures should be sought.
18. When considering development projects in or near the wildland/urban interface, the County encourages property owners and developers to consult with forest managers and land management agencies in developing fire mitigation plans that consider stand density, health, topography and hydrology to ensure compatibility.
19. Promote the Firewise and Fire Adapted Communities Programs and support the development of a County-wide Wildland/Urban Interface Code.

Floods, Earthquakes, & Slopes

In addition to wildfires, other NATURAL HAZARDS of concern in Coconino County include floods, earthquakes, and landslides. Because the ground is IMPERMEABLE in many areas, floods can occur in response to excessive rainfall and snowmelt. The *Coconino County Zoning Ordinance* addresses floods in the FLOODPLAIN MANAGEMENT OVERLAY ZONE (FPM). Although this overlay zone includes provisions for flood-hazard reduction, it does not prohibit or prevent development in flood-prone areas. The overlay zone only requires that new construction does not encroach on the "floodway" (the main channel of discharge of a 100-YEAR FLOOD). The floodplain management regulations help ensure property owners can obtain insurance under the National Flood Insurance Program and the County can obtain disaster relief from Federal Emergency Management Agency (FEMA).

Coconino County is at moderate risk for earthquakes, according to the ARIZONA EARTHQUAKE INFORMATION CENTER (AEIC) at NORTHERN ARIZONA UNIVERSITY (NAU). Numerous geologic FAULT SYSTEMS comprise the NORTHERN ARIZONA SEISMIC BELT, including the Cataract Creek, Mesa Butte, and Bright Angel systems *(see Flood and Fire Risk map at the end of the Chapter)*. The Cataract Creek system underlies the Flagstaff region and includes the Lake Mary fault. Damaging earthquakes occurred in 1906, 1910, and 1912; and minor quakes occur almost every year. The chance of an

earthquake of magnitude 6 or higher is estimated to be about 50 percent in the next 30 years. The worst-case scenario for the Flagstaff community would be an earthquake of magnitude 7 or higher on the Cataract Creek fault system[1]. Other areas of the county would experience less potential damage because they are less developed. For construction purposes, Coconino County is classified under the INTERNATIONAL BUILDING CODE (IBC) [2] as being in Seismic Zone C. The earthquake provisions of the code are intended to protect against major structural failures and loss of life. Although new construction codes produce buildings that can resist the effects of ground motion, older structures are at risk.

Constructing buildings on steep slopes is potentially hazardous for several reasons; fires can spread upslope easily, landslides and slumping can occur because of poor soil conditions, and steep, narrow driveways can limit accessibility, particularly for emergency response. Nevertheless, properties on ridgelines and steep slopes often cost a premium because they offer scenic views. Regulations providing development criteria for steep slopes is limited. Although the *Coconino County Subdivision Ordinance* requires lots to have a buildable area that does not exceed 25 percent slope, it does not prevent construction on the steeper portions of a lot.

Goal: Avoid or mitigate the dangers posed by identifiable or predictable natural hazards.

Policies:

20. Development proposed in geologically hazardous areas or on steep slopes should be done in a manner that poses little or no hazard to public health, safety and property.
21. Development projects including critical facilities, high-density residential, and major commercial and industrial uses shall not be approved in areas subject to high levels of seismic risk. Only very low-risk land uses will be considered for approval in such areas.
22. Utility providers are encouraged to strengthen, relocate, or take other appropriate measures to safeguard pipelines, transmission lines, and other utility infrastructure in areas subject to elevated natural hazard risk.

Disaster Response & Management

Large-scale emergencies and disasters require a coordinated, inter-agency response. Because major emergencies and disasters can quickly exceed our local capabilities, the County has developed the *Emergency Operation Plan* adopted by the Board of Supervisors on June 9, 2011 and updated on July 12 2013. This plan details procedures to follow in case of a major flood, fire, hazardous material spill, winter storm, gas pipeline failure, mass casualty, energy or water shortage, earthquake, or mass evacuation. If an incident occurs, the Department of Emergency Management helps notify the appropriate emergency response agencies, assists in evacuation activities, and later assists in disaster recovery and mitigation. This office can also provide valuable input for new developments in identifying hazards and possible mitigation strategies.

[1] Bausch and Brumbaugh, 1997
[2] International Conference of Building Officials, 1997

Interstate transportation corridors also create a potential for major public safety incidents. As an example, the Burlington Northern Santa Fe Railroad runs about 100 freight trains across the County every day, often carrying hazardous cargo. A derailment could result in a HAZMAT incident requiring a coordinated interagency response. When such an incident or other disaster occurs, the Department of Emergency Management helps facilitate response and recovery operations.

Through well managed emergency operations, communities with disaster response and recovery plans in place can reduce uncertainties, often shape the recovery outcomes and make the case for state and federal funding requests when disasters occur. The County's *2013 Emergency Operation Plan* a post-disaster recovery plan as part of Emergency Support Function 14. The Coconino County Multi-Jurisdictional Hazard Mitigation Plan (2010) works in tandem with the Emergency Operations Plan by identifying the hazards faced by the County, their likelihood of occurring, and mitigation strategies to reduce their impact when they occur.

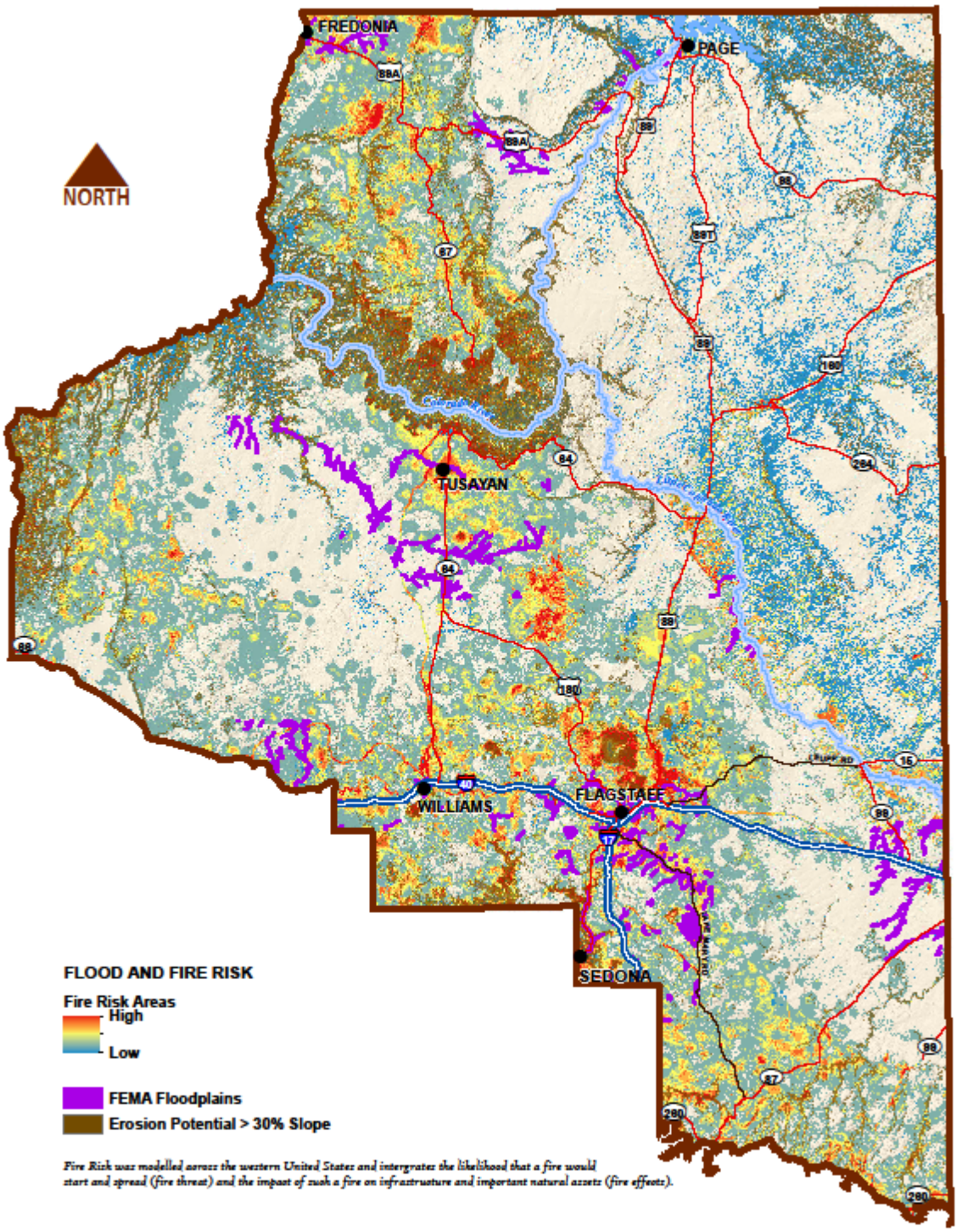
Post-disaster recovery planning is an opportunity to improve the County's quality of life and disaster resiliency. It has the potential to support developed areas following a disaster and set goals that go beyond restoration. Local consensus on recovery goals and priorities can be essential in expediting assistance from state, federal and other nonlocal sources. A local recovery planning process can also provide opportunity for public input that may improve the quality and equality of recovery. Through planning, a community's stakeholders can determine their vision for the community after recovery, identify obstacles and opportunities they may encounter in reaching that future, and measure their progress in achieving recovery as they have defined it. The County's Emergency Operations and Multi-Jurisdictional Hazard Mitigation Plans are supported by post-disaster planning. Coordination with the County's Community Development Department enables a joint effort to support post-disaster redevelopment to meet the needs of the residents in the most effective manner.

Community Development staff can provide support following a disaster to address long-standing community goals set forth in this Comprehensive Plan and Area Plans. The overarching goal of the long-term recovery plan is to increase the opportunity for community betterment; ideally to have a community emerge from a disaster as a more resilient and sustainable place as the result of recovery programs. Depending on the community and the disaster impacts sustained, this goal could focus on physical resiliency, such as rebuilding housing to new building codes that minimize future disaster-related damages or relocating structures from hazardous areas. This goal also identifies other aspects of whole community recovery, such as seeking out sustainable industries as part of economic recovery initiatives or assisting community organizations to increase the resilience of vulnerable populations. This is where leveraging resources creatively, applying local knowledge of community issues and planning an alternative to status quo restoration plans combine to create an ideal recovery project.

Goal: Maintain a high level of emergency preparedness to effectively respond to disaster and recovery efforts.

Policies:

23. Commercial and industrial development projects shall identify all potentially hazardous or toxic materials expected to be utilized, stored, or produced by the development. Detailed plans shall be submitted regarding the use, storage, transportation, and disposal of such materials prior to considering approval of the project.
24. Development projects shall acknowledge existing conditions and/or hazards which may pose a threat to residents, such as proximity to physical hazards, and should mitigate such threats through appropriate site planning, buffering, and other physical design approaches.
25. The County shall engage in coordination with other agencies and jurisdictions to promote emergency preparedness and response to natural and human-caused disasters and post-disaster recovery efforts. To ensure preparedness the County shall review the *County Emergency Operation Plan* annually and update as necessary.
26. The County will work to incorporate long-term post-disaster recovery planning that includes community planning and redevelopment as part of the overall emergency efforts and initiatives.



Maps in this Comprehensive Plan are for reference and general planning purposes only. Coconino County does not provide any warranty of accuracy nor is any given or implied. Data sources are listed in the Appendix.

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