



EXECUTIVE SUMMARY

City of Show Low officials and public servants recognize that natural and human-caused hazards pose a significant threat at varying degrees of magnitude and frequency, to the safety and economic stability of the City and its residents. Often, the potential reality of hazards within the City is not fully understood or realized until a major disaster occurs, and then significant resources are required to respond and recover from the damages. City officials also understand that responding to hazards on a post-incident basis can result in increased costs, in terms of both financial and human losses. Accordingly, the City of Show Low has prepared the **City of Show Low Multi-Hazard Mitigation Plan** (COSLMHMP) to assess the City's vulnerability to natural and human caused hazards, and to develop mitigation strategies that reduce the risks associated with those hazards.

This plan is generally arranged and prepared using the template set forth in the State of Arizona's *Model Local Hazard Mitigation Plan* (AzMLHMP). The AzMLHMP, and hence this plan, are prepared to satisfy recent federal requirements set forth by the Disaster Mitigation Act of 2000 (DMA2K). Compliance with these requirements will enable Show Low to maintain eligibility for certain federal and state mitigation funds. Seventy-five (75) percent of the funding for the planning process and plan preparation was provided through a planning grant from FEMA. The State of Arizona, through the Arizona Division of Emergency Management (ADEM), provided the matching twenty-five (25) percent of monies to complete the work. The team of JE Fuller/ Hydrology & Geomorphology, Inc. and Visual Risk Technologies, Inc. was contracted by ADEM to lead and coordinate the planning effort, prepare the final plan documents, and enter the plan data into the Arizona Hazard Mitigation Planning System (an online, web-based planning tool developed by the State of Arizona).

The overall purpose of DMA2K was to establish a national program for pre-disaster mitigation, streamline administration of disaster relief at both the federal and state levels, and control federal costs of disaster assistance. Congress envisioned that implementation of these new requirements would result in the following key benefits:

- Reduction of loss of life and property, human suffering, economic disruption, and disaster costs.
- Prioritization of hazard mitigation planning at the local level, with an increased emphasis placed on planning and public involvement, assessing risks, implementing loss reduction measures, and ensuring critical services/facilities survive a disaster.
- Establishment of economic incentives, awareness and education via federal support to state, tribal, and local governments, that will result in forming community-based partnerships,



implementing effective hazard mitigation measures, leveraging additional non-Federal resources, and establishing commitments to long-term hazard mitigation efforts.

In general, the DMA2K legislation requires all local, county, and tribal governments to develop a hazard mitigation plan for their respective communities in order to be eligible to receive certain federal mitigation funds including Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), and Flood Mitigation Assistance Program (FMA) funds.

In satisfying the regulatory requirements of DMA2K, the primary purpose of this plan is to identify natural and human-caused hazards that impact Show Low, assess the vulnerability and risk posed by those hazards to community-wide human and structural assets, develop strategies for mitigation of those identified hazards, present future maintenance procedures for the plan, and document the planning process. The COSLMHMP is divided into six primary sections as follows:

- Section 1 - Introduction
- Section 2 – Jurisdictional Participation Information
- Section 3 – Planning Process Documentation
- Section 4 – Risk Assessment
- Section 5 – Mitigation Strategy
- Section 6 – Plan Maintenance Procedures

Where appropriate, detailed information is documented or provided in appendices. There are also certain data sets pertaining to the Risk Assessment that are deemed “sensitive” by the City, and are, therefore, made a part of this plan by reference, but are documented in a separate technical binder which will remain at Show Low and will not be submitted to FEMA or the State of Arizona for review. General summaries of those specific data are provided in the COSLMHMP instead.

The planning process used to develop the COSLMHMP included the assembly of a multi-jurisdictional planning team (MJPT) that was comprised of members of each incorporated community, Show Low staff, and various other public and private entities with interest in the mitigation of hazards. Navajo County Emergency Management functioned as the primary point of contact and the lead agency for the planning effort. The multi-jurisdictional planning team (MJPT) primarily focused on the following objectives:

- ✓ Provide a unified approach to informing the public of hazard mitigation planning efforts.



- ✓ Identify, evaluate, prioritize, and profile the types of hazards impacting the county and its communities.
- ✓ Develop general, county-wide hazard mitigation goals and objectives to use as a starting template for each of the individual community plans.
- ✓ Provide a forum for community and inter-agency communication during the development of mitigation actions/projects, especially for those projects that may involve multiple communities.
- ✓ Capitalize on the experience and institutional knowledge base afforded by a cooperative, multi-agency, multi-community team. Many of the MJPT members are long-time residents of Navajo County.

One of the key elements to the hazard mitigation planning process is the risk assessment. In performing a risk assessment, a community determines “what” can occur, “when” (how often) it is likely to occur, and “how bad” the effects could be. According to DMA2K, the primary components of a risk assessment that answer the above questions are generally categorized into the following measures:

- ☑ **Identify Hazards**
- ☑ **Profile Hazard Events**
- ☑ **Assess Vulnerability to Hazards**

The risk assessment for Show Low was performed using a county-wide perspective, with much of the information input and development being accomplished by the MJPT. The vulnerability analysis was performed in a way that the results reflect vulnerability at an individual community level, and at a county-wide level. Two categories of hazards, natural and human-caused, and a list of hazards for each category have been identified by the State of Arizona. Beginning with that list, the MJPT used a systematic process that considered relevance, historical significance and experience, and catastrophic potential, to reduce the list to hazards that are most relevant to communities within Navajo County. The Show Low Planning Team then further refined the list to present the hazards for which mitigation was proposed. The following table summarizes the result of that process, with the hazards proposed for mitigation by the City of Show Low indicated by **bold** text. Hazards indicated by *italicized text* were also considered by the Show Low Planning Team to be important, but due to time and resource limitations, were not evaluated further. For the purposes of this planning effort, the flooding/flash flooding and tropical storms/hurricane both result in flooding, and are, therefore, considered together as one category. The italicized human-caused hazards will not be considered



further due to resource limitations; however, the MJPT and Show Low Planning Team desired to include them in the list due to their relevance to the community.

Natural Hazards	Human-Caused Hazards
<ul style="list-style-type: none"> • Drought • Dust/Sand Storms • Extreme Cold/Heat • Flooding/Flash Flood • <i>Infestations</i> • Landslides/Mudslides • Monsoon • Subsidence • Thunderstorm/High Winds • <i>Tornadoes/Dust Devils</i> • Wildfires • <i>Winter Storms</i> 	<ul style="list-style-type: none"> • Arson • Dam/Levee Failure • Explosion/Fire • Fuel/Resource Shortage • Hazardous Materials Incidents • Power/Utility Failure • Sabotage • Special Event • Strike • Transportation Accident • <i>Terrorism</i>

Profiles were developed for each of the top ranked hazards by researching and mapping historic hazard events, obtaining other hazard mapping, analysis and studies, and in Arizona, estimating the Calculated Priority Risk Index (CPRI)¹. The other hazards have been generally profiled by the State of Arizona and are referenced accordingly.

A county-wide vulnerability analysis was performed to assess and evaluate the County and incorporated communities’ population and critical facility exposure risk to the identified hazards. The risk was tabulated in terms of economic loss estimates and human population exposure. Economic losses include estimates of damage to critical, residential, industrial, and commercial facilities. Critical facilities were individually identified by the MJPT for each community and supplemental residential, commercial, and industrial facility information was obtained from FEMA’s HAZUS program. It is estimated that there are at least \$337.5 million dollars² worth of critical, residential, industrial, and commercial facilities within the City of Show Low. The total Show Low population is estimated at 7,670. The following table summarizes the general City of Show Low results of the vulnerability analysis for each of the top ranked hazards.

¹ The CPRI is explained in detail in the State of Arizona’s *Model Local Hazard Mitigation Plan*. A digital copy of the plan can be obtained at the following URL or the reader can go to Section 4.2.3 of this plan: http://www.dem.state.az.us/operations/mitigation/MLHMP_Final_No%20Cover.pdf.

² This estimate is likely to be incomplete as there were many assets for which the community was unable to obtain replacement estimates given the plan development schedule.



Hazard	Potential Economic Loss ^a	Potential Human Exposure
Drought	None Estimated	7,670
Flooding	\$6.629 million ^c	479 ^b
Wildfire	\$443.432 million ^c	7,627
Dam/Levee Failure	\$24.017 million ^c	237 ^b
HAZMAT Incident	\$2.729 million ^c	7,670

^a – These numbers represent estimates of the losses that may be realized assuming the hazard occurs to all facilities within the hazard impact area.

^b – These numbers represent the total human population potentially exposed to the hazard and are based on 2000 Census data as distributed with the HAZUS program by FEMA.

^c – These numbers represent a collective community-wide exposure. Individual event losses are likely to be a small fraction of these numbers.

The Show Low Planning Team developed a strategy for mitigating the hazard risks identified and summarized in the table above for the City. The mitigation strategy provides the “*what, when, and how*” of actions that will reduce or possibly remove the community’s exposure to hazard risks, and is generally categorized into the following components:

- Capability Assessment**
- Goals and Objectives**
- Mitigation Actions/Projects**
- Implementation Strategy**

The Show Low Planning Team assessed the City’s capabilities regarding legal, regulatory, technical/staff, and financial resources. The Show Low Planning Team then worked with the MJPT to develop a set of draft goals and objectives to establish guidelines for the mitigation of hazards in the County and incorporated communities. The Show Low Planning Team customized the draft goals and objectives to fit the City. The following is a list of Show Low goals and objectives:



Goal 1. Promote disaster-resistant future development.

- Objective 1.A Update, develop, and support the community’s general plans, ordinances, and codes to limit development in hazard areas, or build to standards that will prevent or reduce damage.
- Objective 1.B Adopt and support codes that protect assets and new development in hazard areas.

Goal 2. Promote public understanding, support, and demand for hazard mitigation.

- Objective 2.A Educate the public to increase awareness of hazards and opportunities for mitigation actions.
- Objective 2.B Promote partnerships between the state, counties, local and tribal governments to identify, prioritize, and implement mitigation actions.
- Objective 2.C Promote hazard mitigation in the business, residential, and agricultural community.
- Objective 2.D Monitor and publicize the effectiveness of mitigation actions implemented community wide.

Goal 3. Build and support local capacity and commitment to become less vulnerable to hazards.

- Objective 3.A Improve existing capabilities to warn the public of emergency situations.
- Objective 3.B Develop programs to enhance the safety of the residents of each community during an emergency.

Goal 4. Improve hazard mitigation coordination and communication with federal, state, local, and tribal governments.

- Objective 4.A Establish and maintain a close working relationship with state agencies and local and tribal governments.

Goal 5. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to floods.

- Objective 5.A Implement policies, procedures and regulations which reduce the potential exposure to flood hazards.
- Objective 5.B Decrease vulnerability of community assets, especially critical facilities located in the 100-year floodplain.
- Objective 5.C Improve coordination with state and federal flood-related agencies.
- Objective 5.D Maintain compliance with the National Flood Insurance Program (NFIP) requirements.
- Objective 5.E Promote changes in current regulations to facilitate hazard mitigation.



Goal 6. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to wildland fires.

- Objective 6.A Develop a comprehensive approach to reducing the level of damage and losses due to wildland fires.
- Objective 6.B Protect life, improved property, and natural resources with vulnerability to the effects of wildland fires.
- Objective 6.C Improve coordination and support existing efforts to mitigate wildland fire hazards.
- Objective 6.D Educate the public about wildland fire dangers and mitigation measures.
- Objective 6.E Promote changes in current regulations to facilitate hazard mitigation.

Goal 7. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to dam/levee failure.

- Objective 7.A Develop a comprehensive approach to reducing the level of damage and losses due to dam/levee failure.
- Objective 7.B Protect life, improved property, and natural resources with vulnerability to the effects of dam/levee failure.
- Objective 7.C Educate the public about dam/levee failure dangers and mitigation measures.

Goal 8. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to drought.

- Objective 8.A Develop a comprehensive approach to reducing the level of damage and losses due to drought.
- Objective 8.B Protect existing assets with vulnerability to the effects of drought.
- Objective 8.C Coordinate with and support existing efforts to mitigate drought (e.g., Arizona Governor's Arizona Drought Task Force).
- Objective 8.D Promote water conservation and education.

Goal 9. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to hazardous materials incidents.

- Objective 9.A Develop a comprehensive approach to reducing the level of damage and losses due to hazardous materials incidents.
- Objective 9.B Protect existing assets with vulnerability to the effects of hazardous materials incidents.
- Objective 9.C Educate the public about hazardous materials dangers and mitigation measures.



Goal 10. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to other natural hazards.

- Objective 10.A Develop a comprehensive approach to reducing the level of damage and losses due to other natural hazards.
- Objective 10.B Protect life, improved property, and natural resources with vulnerability to the effects of other natural hazards.

Goal 11. Reduce the potential level of damage and losses to people, existing and future critical facilities/infrastructure, and other community assets due to other human caused hazards.

- Objective 11.A Develop a comprehensive approach to reducing the level of damage and losses due to other human caused hazards.
- Objective 11.B Protect life, improved property, and natural resources with vulnerability to the effects of other human caused hazards.

Using the vulnerability analysis, capability assessment, and goals and objectives, the Show Low Planning Team developed an initial list of mitigation actions/projects, with each action/project being scored based on a perceived value in the categories of social, technical, administrative, political, legal, economic, and environmental considerations. Once the actions/projects were ranked, an implementation strategy was developed for the top ten (or less) of each list, to outline the responsible agency, funding source, completion date, and critical or interim activities for each action/project. The following table summarizes the top ten (10) ranked actions/projects proposed by the Show Low Planning Team.



Name	Primary Goals Addressed	Description
Enforcement of Zoning and Building Code Ordinances	1.A	Continue to enforce zoning and building codes through current site plan, subdivision, and building permit review processes to reduce the effects of drought, flood, thunderstorm/high wind, and other hazards on new buildings and infrastructure
Replacement of Culvert Crossing on Whipple Road	5.B	Enlarge existing crossing with larger box culvert at Whipple Road and Whipple Wash
Replacement of Culvert Crossing on Old Linden Road	5.B	Enlarge existing crossing with larger box culvert at Old Linden Road and Fools Hollow Wash
Wildfire Public Education Activities	6.B	Expand education activities to include public service announcements, public access TV, website
Adoption of Mutual Aid Agreements for all Hazards	4.A	Promote adoption of Mutual Aid Agreements with all incorporated communities and adjoining counties
Neighborhood Wildfire Assessment	6.D	Develop neighborhood wildfire assessment and rank at-risk neighborhoods with the goal to provide accurate wildfire information to residents and motivate them to implement personal and neighborhood mitigation measures
Reconstruction of Show Low Creek Bridge	5.B	Joint project with City, County, & ADOT to reconstruct the Show Low Creek Bridge and Stream Restoration
Wood Disposal Site	6.C	Partner with the Sitgreaves Forests Partnership to establish a disposal site for lot cleanup for wildfires
Drainage Master Plan	5.A	Develop a drainage master plan for the entire community
Small Diameter Wood Business Recruitment	6.B	Partner with the Sitgreaves Forests Partnership to conduct outreach and attract sustainable, small-diameter wood-based businesses into the area

As a final step in the planning process, plan maintenance procedures were developed by the Show Low Planning Team to establish guidelines for maintaining, reviewing and updating the COSLMHMP over the next five (5) years. The plan will be reviewed on an annual basis and/or following a major disaster. Each review shall include an evaluation of the following:

- **Public Involvement** – Public involvement successes and challenges shall be reviewed and noted, with any recommendations for changes.
- **Risk Assessment** – The identified hazards and associated risks shall be evaluated with respect to the previous year’s events, and any significant differences shall be noted for possible revision during the next planning cycle.



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- **Mitigation Strategy** – The proposed A/Ps shall be reviewed and updated regarding status and implementation (i.e. – proposed project is now fully complete). Any changes shall be noted along with the successes and/or challenges associated with the implementation of those projects.

The COSLMHMP also outlines maintenance responsibilities and continued public involvement activities. Ultimately, the plan will require updating and re-approval from FEMA and the State of Arizona in five years.