# Siskiyou County

# HAZARD MITIGATION PLAN
# VOLUME 2: PLANNING PARTNER ANNEXES

**DRAFT**

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# Siskiyou County
# Hazard Mitigation Plan;
# Volume 2—Planning Partner Annexes

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# PART 1—
# INTRODUCTION

# CHAPTER 1.
# PLANNING PARTNER PARTICIPATION

## 1.1. BACKGROUND

The Federal Emergency Management Agency (FEMA) encourages multi-jurisdictional planning for hazard mitigation. Such planning efforts require all participating jurisdictions to fully participate in the process and formally adopt the resulting planning document. Chapter 44 of the Code of Federal Regulations (44CFR) states:

> "Multi-jurisdictional plans (e.g. watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan." (Section 201.6.a(4))

In the preparation of the Siskiyou County Hazard Mitigation Plan, a planning partnership was formed to leverage resources and to meet requirements of the federal Disaster Mitigation Act of 2000 (DMA) for as many eligible local governments in Siskiyou County as possible. The DMA defines a local government as follows:

> "Any county, municipality, city, town, township, public authority, school district, special district, intrastate district, council of governments (regardless of whether the council of governments is incorporated as a nonprofit corporation under State law), regional or interstate government entity, or agency or instrumentality of a local government; any Indian tribe or authorized tribal organization, or Alaska Native village or organization; and any rural community, unincorporated town or village, or other public entity."

There are two types of planning partners in this process, with distinct needs and capabilities:

- Incorporated municipalities (cities and the County)
- Special purpose districts.

## 1.2. THE PLANNING PARTNERSHIP

### Initial Solicitation and Letters of Intent

The planning team solicited the participation of the County and all County-recognized special purpose districts at the outset of this project. A meeting was held on July 28, 2010 at the Siskiyou County Department of Public Health and Community Development in Yreka to identify potential stakeholders for this process. The purpose of the meeting was to introduce the planning process to jurisdictions in the County that could have a stake in the outcome of the planning effort, to solicit planning partners, and to inform potential partners of the benefits of participation. All eligible local governments within the planning area were invited to attend. Various agency and citizen stakeholders were also invited to this meeting. The goals of the meeting were as follows:

- Provide an overview of the Disaster Mitigation Act.
- Provide an update on the planning grant.
- Outline the Siskiyou County plan development work plan.
- Describe the benefits of multi-jurisdictional planning.

- Solicit planning partners.
- Confirm a Steering Committee.

All interested local governments were provided with a list of planning partner expectations developed by the planning team and were informed of the obligations required for participation. Local governments wishing to join the planning effort were asked to provide the planning team with a "notice of intent to participate" that agreed to the planning partner expectations (see Appendix A) and designated a point of contact for their jurisdiction. In all, formal commitment was received from 15 planning partners by the planning team, and the Siskiyou County Planning Partnership was formed.

Maps for each participating city are provided in the individual annex for that city. These maps will be updated periodically as changes to the partnership occur, either through linkage or by a partner dropping out due to a failure to participate.

## Planning Partner Expectations

The planning team developed the following list of planning partner expectations, which were confirmed at the kickoff meeting held on July 28, 2010.

- Each partner will provide a "Letter of Intent to Participate."
- Each partner will support and participate in the selection and function of the Steering Committee overseeing the development of the plan. Support includes allowing this body to make decisions regarding plan development and scope on behalf of the partnership.
- Each partner will provide support for the public involvement strategy developed by the Steering Committee in the form of mailing lists, possible meeting space, and media outreach such as newsletters, newspapers or direct-mailed brochures.
- Each partner will participate in plan development activities such as:
  - Steering Committee meetings
  - Public meetings or open houses
  - Workshops and planning partner training sessions
  - Public review and comment periods prior to adoption.

  Attendance will be tracked at such activities, and attendance records will be used to track and document participation for each planning partner. No minimum level of participation will be established, but each planning partner should attempt to attend all such activities.
- Each partner will be expected to perform a "consistency review" of all technical studies, plans, and ordinances specific to hazards identified within the planning area to determine the existence of plans, studies or ordinances not consistent with the equivalent documents reviewed in preparation of the County plan. For example: if a planning partner has a floodplain management plan that makes recommendations that are not consistent with any of the County's basin plans, that plan will need to be reviewed for probable incorporation into the plan for the partner's area.
- Each partner will be expected to review the risk assessment and identify hazards and vulnerabilities specific to its jurisdiction. Contract resources will provide jurisdiction-specific mapping and technical consultation to aid in this task, but the determination of risk and vulnerability will be up to each partner.

- Each partner will be expected to review the mitigation recommendations chosen for the overall county and determine if they will meet the needs of its jurisdiction. Projects within each jurisdiction consistent with the overall plan recommendations will need to be identified, prioritized and reviewed to determine their benefits and costs.
- Each partner will be required to create its own action plan that identifies each project, who will oversee the task, how it will be financed and when it is estimated to occur.
- Each partner will be required to sponsor at least one public meeting to present the draft plan at least two weeks prior to adoption.
- Each partner will be required to formally adopt the plan.

It should be noted that by adopting this plan, each planning partner also agrees to the plan implementation and maintenance protocol established in Volume 1. Failure to meet these criteria may result in a partner being dropped from the partnership by the Steering Committee, and thus losing eligibility under the scope of this plan.

## Linkage Procedures

Eligible local jurisdictions that did not participate in development of this hazard mitigation plan may comply with DMA requirements by linking to this plan following the procedures outlined in Appendix B. Linkage is also an option for any planning partner that did not meet its planning partner expectations during the initial plan development process.

# 1.3. ANNEX-PREPARATION PROCESS

## Templates

Templates were created to help the planning partners prepare their jurisdiction-specific annexes. Since special purpose districts operate differently from incorporated municipalities, separate templates were created for the two types of jurisdictions. The templates were created so that all criteria of Section 201.6 of 44CFR would be met, based on the partners' capabilities and mode of operation. Each partner was asked to participate in a technical assistance workshop during which key elements of the template were completed by a designated point of contact for each partner and a member of the planning team. The templates were set up to lead each partner through a series of steps that would generate the DMA-required elements that are specific for each partner. The templates and their instructions can be found in Appendices C and D to this volume of the Hazard Mitigation Plan.

## Workshop

A workshop was held for planning partners to learn about the templates and the overall planning process. Topics included the following:

- DMA
- Siskiyou County plan background
- The templates
- Risk ranking
- Developing your action plan
- Cost/benefit review.

The workshop was segregated by special districts and municipalities, in order to better address each type of partner's needs. The sessions provided technical assistance and an overview of the template completion process. Attendance at this workshop was mandatory under the planning partner expectations established by the Steering Committee. This workshop was attended by 11 planning partners.

In the risk-ranking exercise, each planning partner was asked to rank each risk specifically for its jurisdiction, based on the impact of the hazard on the area within its jurisdictional boundary. The concept stressed by this exercise is that each planning partner will have different concerns regarding the hazards addressed by this plan. Cities were asked to base this ranking on probability of occurrence and the potential impact on people, property and the economy. Special purpose districts were asked to base this ranking on probability of occurrence and the potential impact on their constituency, their vital facilities and the facilities' functionality after an event. The methodology followed that used for the countywide risk ranking presented in Volume 1. A principal objective of this exercise was to familiarize the partnership with how to use the risk assessment as a tool to support other planning and hazard mitigation processes. A "tool kit" was provided to each participant that included the following:

- The risk assessment results developed for this plan
- Hazard maps for all hazards of concern
- Special district boundary maps that illustrated the sphere of influence for each special purpose district partner
- The guiding principal, goals and objectives of the plan
- Hazard mitigation catalogs
- Federal funding and technical assistance catalogs
- Historical loss data (SHELDUS, FEMA, Cal OES)
- The California State Hazard Mitigation Plan
- Results from the hazard mitigation survey
- A fact sheet on FEMA Hazard Mitigation Assistance (HMA) grants.

## Prioritization

44CFR requires actions identified in the action plan to be prioritized (Section 201.c.3.iii). The planning team and steering committee developed a methodology for prioritizing the action plans that meets the needs of the partnership and the requirements of 44CFR. The actions were prioritized according to the following criteria:

- **High Priority**—Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
- **Medium Priority**—Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
- **Low Priority**—Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

These priority definitions are dynamic and can change from one category to another based on changes to a parameter such as availability of funding. For example, a project might be assigned a medium priority because of the uncertainty of a funding source, but be changed to high once a funding source has been identified. The prioritization schedule for this plan will be reviewed and updated as needed annually through the plan maintenance strategy.

## Benefit/Cost Review

44CFR requires the prioritization of the action plan to emphasize a benefit/cost analysis of the proposed actions. Because some actions may not be implemented for up to 10 years, benefit/cost analysis was qualitative and not of the detail required by FEMA for project grant eligibility under the Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation (PDM) grant program. A review of the apparent benefits versus the apparent cost of each project was performed. Parameters were established for assigning subjective ratings (high, medium, and low) to costs and benefits as follows:

- Cost ratings:

**High—**Existing funding levels are not adequate to cover the costs of the proposed action; implementation would require an increase in revenue through an alternative source (for example, bonds, grants, and fee increases).

**Medium—**The action could be implemented with existing funding but would require a re-apportionment of the budget or a budget amendment, or the cost of the action would have to be spread over multiple years.

**Low—**The action could be funded under the existing budget. The action is part of or can be part of an existing, ongoing program.

- Benefit ratings:

**High—**The action will have an immediate impact on the reduction of risk exposure to life and property.

**Medium**—The action will have a long-term impact on the reduction of risk exposure to life and property or will provide an immediate reduction in the risk exposure to property.

**Low**—Long-term benefits of the action are difficult to quantify in the short term.

Using this approach, projects with positive benefit versus cost ratios (such as high over high, high over medium, medium over low, etc.) are considered cost-beneficial and are prioritized accordingly.

It should be noted that for many of the strategies identified in this action plan, funding might be sought under FEMA's HMGP or PDM programs. Both of these programs require detailed benefit/cost analysis as part of the application process. These analyses will be performed on projects at the time of application preparation. The FEMA benefit-cost model will be used to perform this review. For projects not seeking financial assistance from grant programs that require this sort of analysis, the planning partners reserve the right to define "benefits" according to parameters that meet their needs and the goals and objectives of this plan.

## Analysis of Mitigation Initiatives

Each planning partner reviewed its recommended initiatives to classify each initiative based on the hazard it addresses and the type of mitigation it involves. Mitigation types used for this categorization are as follows:

- **Prevention**—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- **Property Protection**—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- **Public Education and Awareness**—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- **Natural Resource Protection**—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- **Emergency Services**—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- **Structural Projects**—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

## 1.4. FINAL COVERAGE UNDER THE PLAN

Of the 14 committed planning partners, only 10 fully met the participation requirements specified by the Steering Committee. The principal requirement not met by the other partners was the completion of the jurisdictional annex template following the workshops. Eleven partners attended the workshop, but only 10 subsequently submitted completed templates. Therefore, only those 10 jurisdictions are included in this volume and will seek DMA compliance under this plan. The remaining jurisdictions will need to follow the linkage procedures described in Appendix B of this volume. Table 1-1 lists the jurisdictions that submitted letters of intent and their ultimate status in this plan.

**TABLE 1-1.**
**PLANNING PARTNER STATUS**

| Jurisdiction | Letter of Intent Date | Attended Workshop ? | Completed Template? | Will Be Covered by This Plan? |
|---|---|---|---|---|
| City of Dorris | 8/16/2010 | Yes | Yes | Yes |
| City of Dunsmuir | 10/20/2010 | No | No | No |
| City of Etna | 10/15/2010 | Yes | Yes | Yes |
| Town of Fort Jones | 9/8/2010 | Yes | Yes | Yes |
| City of Montague | 9/13/2010 | Yes | No | No |
| City of Mt. Shasta | 8/2/2010 | Yes | Yes | Yes |
| City of Tulelake | 8/16/2010 | Yes | Yes | Yes |
| City of Weed | 7/29/2010 | Yes | Yes | Yes |
| City of Yreka | 9/22/2010 | Yes | Yes | Yes |
| Siskiyou County | N/A[a] | Yes | Yes | Yes |
| Happy Camp Community Services District | 9/15/2010 | No | No | No |
| Lake Shastina Community Services District | 8/3/2010 | Yes | Yes | Yes |
| McCloud Community Services District | 9/10/2010 | Yes | Yes | Yes |
| Happy Camp Sanitary District | 6/26/2011 | No | No | No |

a. A letter of intent was not required for Siskiyou County because the County had committed to the process by securing the grant that funded the planning effort.

# PART 2—
# ANNEXES FOR MUNICIPALITIES

# CHAPTER 2.
# UNINCORPORATED SISKIYOU COUNTY ANNEX

## 2.1. HAZARD MITIGATION PLAN POINT OF CONTACT


**Primary Point of Contact**

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## 2.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation—**March 22, 1852
- **Current Population—**43,853 as of July 2017
- **Population Growth—**Based on data tracked by the California Department of Finance, Siskiyou County's population growth has been almost negligible since 2000. Between 2000 and 2010, the population grew at a rate of 0.78 percent or less, with small decreases in population occurring from 2006-2007, and 2008-2009 and 2010-2017. Population is down from 2010 to 2017 by 2.3%.
- **Location and Description—**Located in inland northern California, adjacent to the Oregon state line, Siskiyou County is bordered on the west by Del Norte and Humboldt Counties, on the south by Trinity and Shasta Counties, and on the east by Modoc County. Siskiyou County is the fifth largest county by area and 45th in population in the state. At 6,347 square miles, the county has a population density of only 7.1 people per square mile. More than 60 percent of the land in the County is currently managed by federal and state agencies. The majority of this land is in the Klamath, Shasta-Trinity, and Modoc National Forests.

  Siskiyou County is geographically diverse. From towering Mount Shasta (elev. 14,179 feet) in the south central part of the county to lakes and dense forests, as well as desert, chaparral, and steep river canyons. Several major rivers cross the county, including the Klamath, McCloud, and Salmon Rivers, as well as the headwaters to the Sacramento River. Pastoral Scott Valley in the western part of the county has many wide, tree-lined meadows, supporting cattle ranches. The basins of northeastern Siskiyou County, including Butte Valley, Lower Klamath and Tulelake basins, have some of the deepest and richest soils in the state, producing alfalfa, potatoes, horseradish, and brewing barley. Butte Valley nurseries are the leading source of premium strawberry plants in North America. Much of the county is densely forested with pine, fir, incense-cedar, oak, and madrone. The county's natural resources are most often used these days for outdoor recreation as historical logging operations have been largely discontinued due to federal and state environmental regulations.
- **Brief History—**Siskiyou County was created on March 22, 1852, from parts of Shasta and Klamath Counties, and named after the Siskiyou mountain range. Parts of the county's territory were given to Modoc County in 1855.

The county is the site of the central section of the Siskiyou Trail, which ran between California's Central Valley and the Pacific Northwest. The Siskiyou Trail was based on Native American footpaths and was expanded by Hudson's Bay Company trappers in the 1830s. The trail was expanded even further by prospectors during the California Gold Rush.

In 1851, after the discovery of an important gold strike near what is now the City of Yreka, thousands of prospectors flooded the area. This era and setting was described in detail in the semi-autobiographical novel, *Life Amongst the Modocs*, written by Joaquin Miller.

The construction of the Central Pacific Railroad along the path of the Siskiyou Trail in the mid-1880s led to a first wave of tourism, as visitors came to "take the waters" at the county's many summer resorts, and to enjoy the hunting, fishing, and other outdoor recreation activities. The Southern Pacific railroad (successor to the Central Pacific) promoted the scenic beauty of the area by calling its rail line through the area "The Road of a Thousand Wonders."

In the early 1940s, Siskiyou County was home to the semi-serious State of Jefferson movement, which sought to create a new state from several counties of northern California, and several counties of southern Oregon.

- **Climate—**Siskiyou County has the typical hot, dry summers and cool, wet winters characteristic of Mediterranean climates. However, since the latitude of Siskiyou County (41º N to 42º N) is at the northern extreme of the Mediterranean climate zone and is in a mountainous region, it tends to have colder winters than the average Mediterranean region. Hence, Siskiyou County mainly falls within the Mediterranean highland climate region with much of the winter precipitation falling as snow.

  The total annual precipitation in Siskiyou County varies from around 10 inches in the northeast corner to 100 inches or more along the northern part of the western border. In general, the western quarter of the county receives 40 to 60 inches per year below 300 feet and 80 to 100 inches per year at higher elevations. The central half of the county receives 12 to 20 inches below 400 feet and as much as 60 inches in the mountains along the extreme southern border. The eastern quarter of the county receives 40 to 50 inches over some of the mountains and even more on Mt. Shasta, while the Modoc Plateau receives only 10 to 20 inches per year.

  Snowfall parallels the precipitation only in part. There are some areas in both the Upper Klamath Basin and the lower reaches of the stream that receive 10 inches or less of snow per year. Over most of the mountain areas, the annual total is within the range of 50 to 75 inches, and Mt. Shasta receives well over 100 inches, on average, over its upper slopes. The greatest snowfall rate recorded from a single storm occurred on Mt. Shasta when 189 inches fell February 13-19, 1959. The McCloud and Mt. Shasta City areas, at lower elevations, also receive around 100 inches of snow. The large amount of snow in this area results from the local topographic situation. Most intermediate elevations in the county, receive an average of 20 to 30 inches each year.

- **Governing Body Format—**The Siskiyou County Board of Supervisors is the legislative authority for the County. The five members of the Board are elected to four-year terms and will assume the responsibility for the adoption and implementation of this plan. Each member represents a specific geographic district. The Board's duties include identifying and articulating the needs of the citizens of Siskiyou County, and providing a framework for the county's administration to carry out its work efficiently, ensuring that County government responds effectively to the community's needs. The Board of Supervisors adopts and enacts ordinances, resolutions, and motions; appropriates revenue; and adopts budgets.

The Siskiyou County Administrator is responsible for six major functional areas: budget, general administration, personnel, purchasing, risk management, and workers' compensation. The County Administrator also has oversight responsibility for a number of programs/cost centers.

- **Development Trends—**Siskiyou County is one of the three northernmost counties in California, sharing its border with the state of Oregon. The county is the fifth largest in terms of land size but ranks only 44th out of the 58 counties in the state in terms of population.

  As with most communities in California, as well as the nation, Siskiyou County's economy and development activity have been severely impacted by the nationwide recession. Even before that, a number of the historical industries (timber, mining, and the agriculture) in the County had been facing ever increasing pressure from environmental regulations and restrictions on the use of public land.

  Residents of Siskiyou County had a nominal per capita income of $29,538 in 2007, compared to $41,571 throughout California on average. The total median household income in Siskiyou County in 2007 was $35,692, compared to $59,928 throughout California in that same year. Of the 23 other Northern California counties (including Sonoma County), Siskiyou County had the third lowest median income in 1999.

  As of July 2017, Siskiyou County had a population of 43,853 people and 8,685 wage and salary jobs. This is down 2.3% sense April 1 2010. In 2009, total wage and salary jobs fell by nearly 1,000 jobs or 6.9 percent. The only non-farm sector creating jobs was education and health services, and this amounted to only a 0.2 percent increase. The sectors that lost the most jobs during 2009 were professional services (-170 jobs), construction (-160 jobs), government (-150 jobs), and leisure services (-130 jobs). The government sector is the largest sector in the county, accounting for 31 percent of total employment. In 2008 and 2009, Siskiyou County had the 14th highest annual average unemployment rate in California. Total employment percent change from 2015-2016 is 3.9% and persons in poverty between 2012-2016 is at 18.8%.

  In 2010, the population in Siskiyou County was estimated at 44,900; relatively unchanged since 2000 when the population county-wide was 44,301. Of the nine cities in the County, six (Dunsmuir, Etna, Montague, Mount Shasta, Tulelake, and Weed) lost a total of 578 persons. The remaining three (Dorris, Fort Jones, and Yreka) and unincorporated areas of the County gained a total of 1,177 persons for a net increase of 599.

  Since 2012 there hasn't been much development in Siskiyou County. There has been no increase or decrease in risk to the County.

  It is anticipated that over the next several years development activity will remain flat as the County and the state emerge from the current recession. It is hoped that efforts at replacing lost natural resource jobs in green and renewable resources will help expedite the County's recovery and lead to more sustainable employment base.

## 2.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 2-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 0
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

## 2.4. HAZARD RISK RANKING

Table 2-2 presents the ranking of the hazards of concern.

## 2.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 2-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 2-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 2-5. Classifications under various community outreach programs are presented in table 2-7.

## 2.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 2- lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 2- identifies the priority for each initiative. Table 2-10 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

The County is in the process of revising it's General Plan which guides county decision making for the future. Part of the revision process is surveying the public about topics that are important to them and how they see the County changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the County. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the County and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The County is in a General Plan revision which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the County will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

## 2.7. FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The Siskiyou County Office of Emergency Services has included several data collection initiatives in this plan that would greatly enhance the County's understanding of the risks and vulnerabilities in the unincorporated area. To address these knowledge gaps, the county advocates for improved data sets for wildfire, landslide, and volcanic activity hazards.

## 2.8. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the Siskiyou County area are included in Volume 1 of this mitigation plan. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 2-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Wildfire Klamathon | 7/5/2018 | Estimates unavailable |
| Wildfire Orleans Complex | 8/4/2017 | Estimates unavailable |
| Wildfire Salmon August Complex | 8/2/2017 | Estimates unavailable |
| Wildfire Miller Complex | 9/1/2017 | Estimates unavailable |
| Wildfire Eclipse Complex | 7/29/2017 | Estimates unavailable |
| Severe Weather/Flood-DR-4308 | 1/23/2017 | Estimates unavailable |
| Severe Weather/Flood-DR-4301 | 1/2/2017 | Estimates unavailable |
| Wildfire Gap | 8/28/2016 | Estimates unavailable |
| Wildfire Grade | 8/24/2016 | Estimates unavailable |
| Floods | 12/9/2014 | Estimates unavailable |
| Wildfire | 9/15/2014 | Estimates unavailable |
| Drought | 4/10/2014 | Estimates unavailable |
| Wildfire | 8/27/2012 | Estimates unavailable |
| Severe Weather-DR-1884 | 3/8/2010 | $3,471,019 |
| Wildfire/Smoke | 5/9/2008 | Estimates unavailable |
| Wildfire | 7/16/2007 | Estimates unavailable |
| Severe Weather/Flood-DR-1628 | 2/3/2006 | Estimates unavailable |
| Severe Weather/Flood-DR-1155 | 1/4/1997 | Estimates unavailable |
| Severe Weather-DR-1046 | 3/12/1995 | Estimates unavailable |
| Severe Weather-DR-979 | 2/3/1993 | Estimates unavailable |
| Drought-3023 | 1/20/1977 | Estimates unavailable |
| Severe Weather/Flood-DR-412 | 1/25/1974 | Estimates unavailable |
| Severe Weather/Flood-DR-283 | 2/16/1970 | Estimates unavailable |
| Severe Weather/Flood-DR-183 | 12/24/1964 | Estimates unavailable |

**TABLE 2-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Wildfire | 68 |
| 2 | Flood | 54 |
| 3 | Severe Weather | 51 |
| 4 | Earthquake | 36 |
| 5 | Drought | 26 |
| 6 | Volcano (lahar/ash fall) | 18 |
| 7 | Dam Failure | 18 |
| 8 | Landslide | 16 |

**TABLE 2-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | 2010 California Building Code—Adopted Jan 1, 2011 |
| Zonings | Y | N | N | Y | The Zoning Code, Title 10, of the Siskiyou County Code, was Adopted Feb 28, 1961 by Ord. No. 363 as part of the Siskiyou County Code. Amendments have been made as necessary to present day. |
| Subdivisions | Y | N | N | Y | Subdivision Map Act per §66410-§66499.58 Government Code of State of California. Additional subdivision provisions in Title 10 of the Siskiyou County Code (Zoning Code). The Land Development Manual - Currently in review by the County Planning Commission—Not Adopted. |
| Stormwater Management | N | N | N | N | Land Development Manual. Currently in review by the County Planning Commission—Not Adopted. |
| Post Disaster Recovery | Y | N | N | N | Emergency Operations Plan Vol. 1, Part 13, Adopted November 13, 2007. |
| Real Estate Disclosure | Y | N | N | Y | CA State Civil Code 1102 requires full disclosure on natural hazard exposure of sale/re-sale of any and all real estate |
| Growth Management | N | N/A | N/A | N/A | N/A |
| Site Plan Review | Y | N | N | N | Site plan review is addressed through the Building Permit review process and is ministerial. |
| Special Purpose (flood management, critical areas) | Y | N | N | Y | Flood Control & Water Conservation District |

**TABLE 2-3.**
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**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | Initially adopted in 1949—as the Master General Plan by Board Resolution and at the same time amending multiple existing Ordinances under its collective cover. Later amended in 1968, additional Elements were adopted in 1972, 1973, 1975, 1976, 1984, 1988 and 1993. Amendment to those elements occurred as needed. Most recently - Housing Element amended May 2010 by Resolution 10-98. |
| Floodplain or Basin Plan | N | N | N | N | Floodplain Manager addresses development within the floodplain only. As per Flood Damage Prevention Program Zoning Code Section 10-10, adopted §1, Ord. 90-32, Effective Dec 13, 1990 |
| Stormwater Plan | N | N | N | N | Land Development Manual. Currently in review by the County Planning Commission—Not yet Adopted. |
| Capital Improvement Plan | Y | N | N | N | Capital Improvement Plans are adopted, in place and amended for various facilities and projects throughout the County. |
| Habitat Conservation Plan | Y | N | N | Y | Conservation Element of the General Plan adopted June 1973 by Resolution 1973-5 by the Board of Supervisors. |
| Economic Development Plan | N | N | N | N | Economic development is partnered through the Siskiyou County Economic Development Council which is private organization and is not part of the County organizational structure. The Economic Commission was developed in 1977. |
| Emergency Response Plan | Y | N | N | Y | The Siskiyou County Emergency Operations Plan was adopted November 13, 2007. |
| Shoreline Management Plan | N | N/A | N/A | N/A | N/A |
| Post Disaster Recovery Plan | Y | N | N | N | Emergency Operations Plan, Vol. 1, Part 13, Adopted November 13, 2007. |

**TABLE 2-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Yes | Public Health/Community Development Dept. & Public Works Dept. |
| Engineers or professionals trained in building or infrastructure construction practices | Yes | Public Health/Community Development—Building Department & Public Works Dept. |
| Planners or engineers with an understanding of natural hazards | Yes | Public Works Department, Public Health/Community Development Dept. |
| Staff with training in benefit/cost analysis | Yes | County Auditor |
| Floodplain manager | Yes | Public Health/Community Development—Building Department—Deputy Director |
| Surveyors | Yes | Public Works Department - County Engineer, County Surveyor, |
| Personnel skilled or trained in GIS applications | Yes | Public Health/Community Development—Building Department, Public Works Dept., Agriculture Dept. |
| Scientist familiar with natural hazards in local area | Yes | Public Health/Community Development—Office of Emergency Services—Deputy Director |
| Emergency manager | Yes | Public Health/Community Development—Office of Emergency Services—Deputy Director |
| Grant writers | Yes | Public Health/Community Development—Office of Emergency Services—Deputy Director |

**TABLE 2-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Yes |
| Capital Improvements Project Funding | Yes |
| Authority to Levy Taxes for Specific Purposes | Yes |
| User Fees for Water, Sewer, Gas or Electric Service | No |
| Incur Debt through General Obligation Bonds | Yes |
| Incur Debt through Special Tax Bonds | Yes |
| Incur Debt through Private Activity Bonds | No |
| Withhold Public Expenditures in Hazard-Prone Areas | No |
| State Sponsored Grant Programs | Yes |
| Development Impact Fees for Homebuyers or Developers | Yes |

**TABLE 2-6.**
**COMMUNITY OUTREACH.**

**THE COUNTY WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA's Emergency Notification System and Testing |
| Use of Facebook and Twitter |
| Joint Community Hmong Preparedness Meetings for evacuations |
| |

**TABLE 2-7.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | No | - | - |
| Building Code Effectiveness Grading Schedule | Yes | 2-2 | 5/17/2011 |
| Public Protection | Yes | 9 | 1995 |
| Storm Ready | Yes | N/A | 2016 |
| Firewise | No | - | - |

**TABLE 2-8.**
**HAZARD MITIGATION ACTION PLAN FROM THE 2012 PLAN**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **SC-1—**Inform and educate the public on hazard mitigation and preparedness via a County-operated website. | | | | | | | |
| Existing | All Hazards | 1,2,5,8 | OES | $7,000 | General Fund | Short-term | Ongoing |
| **SC 2—**Relocate County-owned critical facilities out of identified high hazard risk zones. | | | | | | | |
| Existing | All Hazards | 1,2,4,6 | General Services | Unknown | FEMA Hazard Mitigation Grants | Long-term | Ongoing |
| **SC-3—**Collect improved data (hydrologic, geologic, topographic, volcanic, historic, etc.) to assess risks and vulnerabilities. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,7 | Public Works, OES | $200,000 | Grants, General Fund | Short-term | Ongoing |
| **SC-4—**Complete a Volcanic Activity Annex to the Siskiyou County Emergency Operations Plan for the Mt. Shasta and Medicine Lake volcanoes. | | | | | | | |
| New | Volcano | 1,2,3,4,5,7,8, 9 | OES | $100,000 | Grants, General Fund | Short-term | Completed |
| **SC-5—**Retrofit, rehabilitate or replace vulnerable road and bridge facilities and infrastructure throughout Siskiyou County. | | | | | | | |
| Existing | All Hazards | 1,2,4,6, | Public Works | Unknown | FEMA Hazard Mitigation Grants, other grants | Long-term | Ongoing Lake of funding |
| **SC-6—**Create a County Hazard Identification and Vulnerability Analysis utilizing enhanced technologies. | | | | | | | |
| New | All Hazards | 3,7 | OES | $150,000 | Grants, General Fund | Short-term | Ongoing |
| **SC-7—**Develop departmental continuity of operations plans and a continuity of government plan. | | | | | | | |
| New | All Hazards | 1,3,4,7 | OES | $250,000 | Grants, EMPG, General Fund | Short-term | Ongoing |
| **SC-8—**Seek land acquisition opportunities for open space use and preservation in areas of high vulnerability due to multiple risk exposure. | | | | | | | |
| Existing | All Hazards | 5,6 | Planning Department | Varies per project | FEMA Hazard Mitigation Grants | long-term | Not performed |

**TABLE 2-8.**
**HAZARD MITIGATION ACTION PLAN FROM THE 2012 PLAN**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **SC-9—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority when applicable. | | | | | | | |
| Existing | All Hazards | 1,2,4,5,6 | All County Departments | High | FEMA Hazard Mitigation Grant funding with local match provided by property owner contribution | long-term | Ongoing |
| **SC-10—**Support defensible space for wildfire through projects that create perimeters around homes, structures, and critical facilities through the removal or reduction of flammable vegetation. | | | | | | | |
| Existing | Wildfire | 1,2,4,5 | County Fire, OES, Planning Department | Varies per project | FEMA Hazard Mitigation Grants, other grants | Short-term | Working on needing more funding |
| **SC-11—**Support hazardous fuels reduction projects that remove vegetative fuels proximate to at-risk structures that, if ignited, pose significant threat to human life, property, and critical facilities. | | | | | | | |
| Existing | Wildfire | 1,2,4,5 | County Fire, OES, Planning Department | Varies per project | FEMA Hazard Mitigation Grants, other grants | Short-term | Working on needing more funding |
| **SC-12—**Design and construct drainage improvements along Panther Creek through the unincorporated town of McCloud to address repetitive damage from flooding on the adjacent roads and property. | | | | | | | |
| Existing | Flood | 1,2,4 | Public Works | $200,000 | FEMA Hazard Mitigation Grants, other grants | Short-term | Ongoing |
| **SC-13—**Continue to maintain compliance with the National Flood Insurance Program. | | | | | | | |
| New and existing | Flood | 1,2,3,7 | Public Works, Building Department | Low | General Fund | Short-term | Ongoing |
| **SC-14—**Develop and maintain a county public alert and warning plan. | | | | | | | |
| Existing | All Hazards | 4,5,8,9 | OES | Low | General Fund | Short-term | Ongoing with System in place |
| **SC-15—**Integrate goals, objectives, and initiatives of the Siskiyou County Hazard Mitigation Plan into existing County regulations and programs where appropriate. | | | | | | | |
| Existing | All Hazards | 1,2,3,5,7 | All County regulatory agencies | Unknown | General Fund | Short-term | Ongoing |

**TABLE 2-8.**
**HAZARD MITIGATION ACTION PLAN FROM THE 2012 PLAN**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **SC-16—**Integrate, where appropriate, risk assessment information from the Siskiyou County Hazard Mitigation Plan into other planning mechanisms available to the County such as the Siskiyou County General Plan. | | | | | | | |
| New and Existing | All Hazards | All | All County Departments | Low | General Fund | Short-term | Ongoing |
| **SC-17—**Continue to support the implementation, monitoring, maintenance, and updating of this Plan. | | | | | | | |
| New and Existing | All Hazards | All | All County Departments | Low | General Fund, FEMA Hazard Mitigation Grant for 5-year update | Short-term | Ongoing |
| **SC-18—**Create and maintain a Siskiyou County disaster database to better understand disaster related trends and impacts. | | | | | | | |
| New and Existing | All Hazards | 3,5,7 | OES, Public Works | Low | General Fund | Short-term | Ongoing |
| **SC-19—**Update the Siskiyou County Drainage Manual (1974) incorporating the last 37 years of data, statistics and improvements in the field of hydrology to better estimate expected flood flows. | | | | | | | |
| Existing | Flood | 1,7 | Public Works | Low | General Fund | Short-term | Ongoing |
| **SC-20**—Replace undersized culverts at County maintained roads (particularly those in the Klamath and Scott River watersheds). | | | | | | | |
| Existing | Flood | 1,2,4,6 | Public Works | High | General Fund, FEMA Hazard Mitigation Grant | Long-term | Ongoing |
| **SC-21—**Consider participation in the Community Rating System (CRS) program. | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | Planning | Low | General Fund | Short Term | Ongoing |
| **SC-22—**Support County-wide initiatives identified in Volume 1 of this Plan. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | All County Departments | Low | General Fund | Short Term | Ongoing |

**TABLE 2-9.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| SC-1 | 4 | Medium | Low | Yes | No | Yes | High |
| SC-2 | 4 | High | High | Yes | Yes | No | Low |
| SC-3 | 6 | High | High | Yes | No | No | High |
| SC-4 | 8 | High | High | Yes | No | No | High |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SC-5 | 4 | High | High | Yes | Yes | No | High |
| SC-6 | 2 | High | High | Yes | No | No | High |
| SC-7 | 4 | Medium | Medium | Yes | Yes | Yes | High |
| SC-8 | 2 | High | High | Yes | Yes | No | High |
| SC-9 | 5 | High | High | Yes | Yes | No | High |
| SC-10 | 4 | High | High | Yes | Yes | No | High |
| SC-11 | 4 | High | High | Yes | Yes | No | High |
| SC-12 | 3 | High | High | Yes | Yes | No | High |
| SC-13 | 4 | High | Low | Yes | No | Yes | High |
| SC-14 | 4 | High | Low | Yes | Yes | Yes | High |
| SC-15 | 4 | High | Low | Yes | Yes | Yes | High |
| SC-16 | 9 | High | Low | Yes | No | Yes | High |
| SC-17 | 9 | High | Low | Yes | Yes | Yes | High |
| SC-18 | 3 | High | Low | Yes | No | Yes | High |
| SC-19 | 2 | High | Low | Yes | No | No | Med |
| SC-20 | 4 | High | High | Yes | Yes | No | High |
| SC-21 | 9 | Med | Low | Yes | No | Yes | Med |
| SC-22 | 9 | Med | Low | Yes | No | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 2-10.**
**ANALYSIS OF MITIGATION INITIATIVES**

| Hazard Type | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Avalanche | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Dam Failure | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Drought | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Earthquake | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Flood | SC-13, SC-15, SC-16, SC-17, SC-19, SC-21, SC-22 | SC-2, SC-5, SC-9, SC-13, SC-21 | SC-1, SC-3, SC-6, SC-18, SC-19, SC-21, SC-22 | SC-3, SC-6, SC-8, SC-21 | SC-7, SC-14, SC-21 | SC-5, SC-12, SC-20, SC-21 |
| Landslide | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Severe Weather | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8 | SC-7, SC-14 | SC-5 |
| Volcano | SC-4, SC-15, SC-16, SC-17, SC-22 | SC-2, SC-4, SC-5, SC-9 | SC-1, SC-3, SC-4, SC-6, SC-18, SC-22 | SC-3, SC-4, SC-6, SC-8 | SC-4, SC-7, SC-14 | SC-4, SC-5 |
| Wildfire | SC-15, SC-16, SC-17, SC-22 | SC-2, SC-5, SC-9, SC-10, SC-11 | SC-1, SC-3, SC-6, SC-18, SC-22 | SC-3, SC-6, SC-8, SC-10, SC-11 | SC-7, SC-14 | SC-5, SC-10, SC-11 |

a. See Section 1.3 for description of mitigation types

# CHAPTER 3.
# CITY OF DORRIS ANNEX

## 3.1. HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**

Wayne Frost
307 S. Main St.
Dorris, CA 96023
Telephone: 530-640-1329
e-mail Address: bvhdwre@cot.net

**Alternate Point of Contact**

Carol McKay
307 S. Main St.
Dorris, CA 96023
Telephone: 530-397-3511
e-mail Address: cityadmin@cot.net

## 3.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation—**December 21, 1908
- **Current Population—**905 as of 2016
- **Population Growth—**The City has been relatively stable at about 2 percent of the County population for the last 60 years. The trend is that the population will remain relatively unchanged.
- **Location and Description—**The City of Dorris is located in northeastern Siskiyou County along U.S. Highway 97 in northern California, approximately 3 miles south of the Oregon border. The City covers an area of 0.72 square miles and is situated at the northern end of Butte Valley, a high desert plateau known for its agricultural value and wildlife viewing. The elevation of the City is approximately 4,200 feet. Land within the City is relatively flat, with Dorris Hill rising from the valley floor at the northern end of the City. U.S. Highway 97 and the Union Pacific Railroad cross through and divide the town.
- **Brief History—**The town of Dorris was established as a result of the railroad coming through the north part of Butte Valley. Dorris was named for Presley Dorris of the D ranch. Dorris was incorporated in 1908. Several buildings were moved 4 miles from Picard to the Dorris town site. The town grew due mainly to agriculture and timber mills. In 1963 the Town of Dorris was changed to the City of Dorris.
- **Climate—**Dorris is considered a high dessert climate and enjoys an average of 275 days of sunshine annually. The high dry climate provides for warm summers and fairly mild winters. When snow falls, it only occasionally stays on the ground more than 3-4 days. Annual precipitation is 13.06 inches. The average July high temperature is 79.6 degrees and average January low temperature is 22.5 degrees. The fall season is mild with comfortable temperatures.
- **Governing Body Format—**The City is governed by an elected five-member Council. All members serve a four-year term and are elected on alternate even numbered election years. The Mayor is elected by the council to serve a two-year term. The City Administrator is appointed by the Council to oversee daily management and oversees the finance, public works, and community development and administration departments. Police service and fire protection departments report directly to the Council.

- **Development Trends—**The City of Dorris is a typical rural, small American town. The population of 888 allows most residents to know each other in passing and many residents have spent most or all of their lives in Dorris. The character of Dorris is strongly rooted in the agricultural heritage of Butte Valley and the lumber industry of the area.

  Among the most attractive qualities of Dorris is the relatively quiet and safe environment that has been lost in many larger cities of the nation, and the affordability of homes within the community. The qualities of a safe and friendly community continue to make Dorris a pleasant place for families and individuals seeking a peaceful, affordable place to live.

  Residents of Dorris locate or remain here primarily due to the small-town atmosphere, natural beauty of the area, affordable housing and overall quality of life.

  Historically significant employment in the public sector, lumber industry and agriculture will remain unchanged. Due to limited employment opportunities in Dorris, individuals moving into the community tend to be retired or employed elsewhere (e.g. Klamath Falls) and they commute or telecommute to work. Due to the relative isolation of the community, few large industries are expected to move to Dorris. The most likely industries are expected to be small businesses that employ fewer than 20 people.

## 3.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 3-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 0
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

## 3.4. HAZARD RISK RANKING

Table 3-2 presents the ranking of the hazards of concern.

## 3.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 3-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 3-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 3-5. Classifications under various community mitigation programs are presented in **Error! Reference source not found.**.

## 3.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 3-6 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 3-7 identifies the priority for each initiative. Table 3-8 summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to insufficient staffing and funding we were not able to integrate information from the 2012 plan into the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The City General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

## 3.7. FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City of Dorris will require a jurisdiction-wide blueprint for reducing the potential losses identified in the risk assessment, based on existing policies, programs and resources, and the City's ability to expand on and improve existing tools and resources. There is a need to evaluate how the City's mitigation measures will be implemented to reduce or avoid long-term vulnerabilities to identified hazards and to develop a detailed project and cost list for each measure.

### *National Flood Insurance Program*

The City of Dorris does not participate in the National Flood Insurance Program.

## 3.8. ADDITIONAL COMMENTS

The Union Pacific Railroad and Highway 97 bisect the City of Dorris, which could be a problem if the rail or highway is blocked due to an accident. This is an area that the City will need to explore for varying hazard circumstances.

## 3.9. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Dorris are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 3-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Flooding | 12/2005 | $95,000 City Property only |
| Severe Weather | Multiple events | Unknown |
| Wildfires | Multiple events | Unknown |

**TABLE 3-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Severe Weather | 51 |
| 2 | Wildfire | 45 |
| 3 | Flood | 30 |
| 4 | Drought | 18 |
| 5 | Earthquake | 9 |
| 6 | Volcano | 9 |
| 7 | Landslide | 6 |
| 8 | Dam Failure | 0 |

**TABLE 3-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | 2007 California Building Code |
| Zonings | Y | N | N | Y | Title 18 Dorris Municipal Code |
| Subdivisions | Y | N | N | Y | Title 16 Dorris Municipal Code |
| Stormwater Management | Y | Y | N | Y | Clean Water Act |
| Post Disaster Recovery | N | N | N | N | —- |
| Real Estate Disclosure | Y | N | N | Y | California Civil Code 1102 |
| Growth Management | Y | N | N | Y | Dorris General Plan 2007 |
| Site Plan Review | Y | N | N | N | Staff will review and Council will approve plans |
| Special Purpose (flood management, critical areas) | Y | N | N | N | General Plan Safety Element 2007 for fire, severe weather, flood, seismic |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | Dorris General Plan adopted Aug. 2007 |
| Floodplain or Basin Plan | N | N | N | N | Dorris is not listed in a floodplain |
| Stormwater Plan | Y | N | N | Y | Clean Water Act and SB 790 |
| Capital Improvement Plan | Y | N | N | N | City Admin adopted 2010-2014 |
| Habitat Conservation Plan | N | N | N | N | —- |
| Economic Development Plan | Y | N | N | N | City Admin Economic Development Grant |
| Emergency Response Plan | Y | N | N | Y | Department of Public Works ERP 2010 |
| Shoreline Management Plan | N | N | N | N | —- |
| Post Disaster Recovery Plan | N | N | N | N | —- |
| **Other** | | | | | |
| Other | Y | N | N | Y | Water Conservation Ordinance Title 13.05 |

**TABLE 3-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | City Contract Engineer and Public Works Department. Community Development Agency |
| Engineers or professionals trained in building or infrastructure construction practices | Y | City Engineer/Public Works and Community Development Agency |
| Planners or engineers with an understanding of natural hazards | Y | Same as above |
| Staff with training in benefit/cost analysis | Y | City Administration/Finance Clerk/Engineer |
| Floodplain manager | Y | Fire Chief/City Administrator |
| Surveyors | Y | City Contract Engineer |
| Personnel skilled or trained in GIS applications | Y | City Contract Engineer |
| Scientist familiar with natural hazards in local area | N | |
| Emergency manager | Y | Fire Chief/Public Works Department |
| Grant writers | Y | Community Development Department/City Admin |

**TABLE 3-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Y |
| Capital Improvements Project Funding | Y |
| Authority to Levy Taxes for Specific Purposes | Y |
| User Fees for Water, Sewer, Gas or Electric Service | Y |
| Incur Debt through General Obligation Bonds | Y |
| Incur Debt through Special Tax Bonds | Y |
| Incur Debt through Private Activity Bonds | Y |
| Withhold Public Expenditures in Hazard-Prone Areas | Y |
| State Sponsored Grant Programs | Y |
| Development Impact Fees for Homebuyers or Developers | Y |

**TABLE 3-6.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #D1**—Structural and non-structural retrofitting of existing facilities (elevation, floodproofing, storm doors, tie-downs, etc.) for wildfire, seismic, wind or flood hazards (including designs and feasibility studies when included as part of the construction project) | | | | | | | |
| New and Existing | All | 1,2,4,6,7,9 | FD | High | Hazard Mitigation Grants | Long-Term | Ongoing |
| **Initiative #D2—**Development and initial implementation of vegetative management programs | | | | | | | |
| New and Existing | Fire, Landslide, Drought, Flood | 2,3,5,7,8 | City | Low | USDA, FEMA Mitigation Grant, City | Short Term | Ongoing<br>Need more funding |
| **Initiative #D3—**Minor structural hazard control or protection projects that may include stormwater management (e.g., culverts, floodgates, retention basins), or landslide stabilization | | | | | | | |
| New and Existing | Severe Weather, Flood, Earthquake, Landslide | 1,2,3,4,6,7 | PW and Council | Med | Capital Improvement CDBG Infrastructure | Long Term | Ongoing |
| **Initiative D4#—**Undertake Earthquake Study for all "Critical Infrastructure" | | | | | | | |
| New and Existing | Earthquake | 1,2,3,4,7,9 | City, Planning | Low | CDBG Grant<br>FEMA | Short Term | Ongoing |
| **Initiative #D5**—Enhance/improve City code language and enforcement, including City Building and Fire Codes, to increase compliance with SB 1369 (Defensible Space) and other fire safe requirements in the City, and integrate mitigation plan into the Safety Element of the City's General Plan | | | | | | | |
| New and Existing | All | 2,3,4,5,7,8,9 | City, Planning, FD | Med | General Fund, FEMA, USDA, CDBG | Long Term | Ongoing |
| **Initiative #D6—**Continue to participate not only in general mutual-aid agreements, but also in agreements with adjoining jurisdictions for cooperative response to all hazards and disasters | | | | | | | |
| New and Existing | All Hazards | 3,4, 5, 7, 8, 9 | FD, PW, Sheriff | Low | County, City and FEMA Grants | Long Term | Ongoing |
| **Initiative #D7—**The Fire Department to conduct a mass care and shelter drill, which involves city and county employees, non-government agencies and the public | | | | | | | |
| New and Existing | All Hazards | 2,3,4,5, 7,8,9 | FD, City, PL, PW | Low | County, City and FEMA Grants | Annual | Completed |
| **Initiative #D8—**Consider participation in the Community Rating System (CRS) program | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #D9—**Consider participation in the National Flood Insurance Program (NFIP) | | | | | | | |

**TABLE 3-6.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #D10—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | High | City, FEMA Mitigation Grants | Long Term | Ongoing |
| **Initiative #D11—**Support County-wide initiatives identified in Volume 1 of this Plan | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #D12—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1 | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City, FEMA Mitigation Grants | Short Term | Ongoing |

**TABLE 3-7.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/ Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| D1 | 6 | High | Medium | Yes | Yes | Yes | High |
| D2 | 5 | Med | Low | Yes | Yes | Yes | Med |
| D3 | 6 | Med | Med | Yes | Yes | Yes | Med |
| D4 | 6 | Med | Med | Yes | Yes | Yes | Med |
| D5 | 7 | High | Med | Yes | Yes | Yes | High |
| D6 | 6 | High | Low | Yes | Yes | Yes | High |
| D7 | 7 | High | Low | Yes | Yes | Yes | High |
| D8 | 9 | Med | Low | Yes | No | Yes | Med |
| D9 | 9 | Low | Low | Yes | No | Yes | High |
| D10 | 9 | High | High | Yes | Yes | No | High |
| D11 | 9 | Med | Low | Yes | No | Yes | High |
| D12 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 3-8.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | | | | | | |
| Drought | 1, 2, 3 5, 11, 12 | 1, 2, 10 | 5, 7, 11, 12 | 1, 2, 3, | 1, 3, 6, 7 | 1, 2, 3 |
| Earthquake | 1, 4, 5, 11, 12 | 1, 3, 4, 10 | 4, 5, 11, 12 | 3, 4 | 1, 6, 7 | 1, 3, |
| Flood | 1, 2, 3, 5, 6, 7, 8, 9, 11, 12 | 1, 2, 3, 8, 9, 10 | 5, 6, 7, 8, 9, 11, 12 | 1, 2, 3, 8, 9 | 6, 7, 8, 9 | 1, 2, 3, 8 |
| Landslide | 1, 2, 3, 5, 11, 12 | 1, 2, 3, 10 | 5, 6, 7, 11, 12 | 2, 3, | 6, 7 | 1, 2, 3 |
| Severe Weather | 1, 2, 5, 11, 12 | 1, 3, 10 | 5, 6, 7, 11, 12 | 1, 2, 3 | 6, 7 | 1, 2, 3, |
| Volcano | 1, 2, 5, 11, 12 | 1, 2, 3, 10 | 5, 6, 7, 11, 12 | NA | 6, 7 | 1, 2, |
| Wildfire | 1, 2, 5, 11, 12 | 1, 2, 10 | 5, 6, 7, 11, 12 | 2, 3 | 5, 6, 7 | 1, 2, 3 |

a. See Section 1.3 for description of mitigation types

**TABLE 3-10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
| --- |
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |

# CHAPTER 4.
# CITY OF ETNA ANNEX

## 4.1. HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**
Josh Short
Police Chief
PO Box 460 (448 Main Street)
Etna, CA 96027
Telephone: 530 598 8462
e-mail Address: jshortpd@gmail.com

**Alternate Point of Contact**
Dan Burbank
Assistant Fire Chief & Public Works Dir.
PO Box 460
Etna, CA 96027
Telephone: 530 598 2286
e-mail Address: etnacitypwd@gmail.com

## 4.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation—**1878
- **Current Population—**716 as of 2016
- **Population Growth—**The population of Etna has decreased from a high of 880 to 771 (2000 census) to the present figure of 737, due almost entirely to the demise of the lumber industry and the spotted owl environmental issue. Etna schools (K-12) lost more than one-third of their ADA; logging families moved away; and businesses closed. Fortunately, the rural ranching area surrounding Etna and served by the Etna Post Office (approximately 1500 pop) has remained more stable, and there is a projection of a small population growth for Etna for the next 20 years. Several new businesses have opened recently and there is a sense of new beginnings.
- **Location and Description—**Etna is located near Etna Creek on the west side of Scott Valley, about 30 miles from the Oregon border, 27 miles from the county seat of Yreka. State Highway 3 runs from Yreka over Forest Mt., through Scott Valley, passing through Fort Jones, (12 miles north of Etna), Etna, and Callahan (13 miles south of Etna), continuing over Scott Mt. to Weaverville. Highway 3 provides the chief ingress/egress from the Valley. Etna's elevation is 2929 feet above sea level and geographic coordinates are 47º22'26"N, 122º53'49"W. Etna is surrounded on three sides by the Marble Mountains, Trinity Alps, and Siskiyou Mountains. Etna Creek provides an excellent water supply for Etna, with adjudicated water rights dating to the early 1900s. Etna covers a land area of 0.8 square miles. Heavily forested hills abut the city on the west.
- **Brief History—**After Hudson Bay trappers entered Scott Valley in 1836 and decimated the beaver population, the gold miners and farmers appeared in the early 1850s. In 1853, a sawmill was built on the site of present Etna (then called Rough and Ready), followed by a flour mill, stables, a hotel, a brewery, Scott Valley Bank and many large homes. Nearby Aetna Mills suffered a disastrous flood in 1861-62, and those residents and businesses moved to Rough and Ready, which assumed the Aetna Mills name. The town continued to grow and in 1878, was incorporated as a city: Etna Mills. The name was officially changed to Etna in

the 1930s. The first high school north of Red Bluff, CA was opened in 1892 on the second floor of the Denny Bar building (now Scott Valley Pharmacy). Schools, churches, social clubs, a library, and rodeo grounds were added. The city enjoyed prosperity until the slow-down of the mining and lumber industries. Since that time, the city has struggled, successfully, to maintain a viable presence in the Valley. Today, the small city has an excellent new library, a junior Olympic swimming pool, a park where the annual Bluegrass Festival hosts over 800 guests each July, a museum, a 306-seat theater that is garnering much praise, a well-staffed medical clinic, and good schools. The STAGE bus provides Etna-Yreka service four times daily, Monday-Friday. The work force includes education, Forest Service, service jobs, and a large number of residents who commute to Yreka for employment.

- **Climate—**Etna enjoys a highland Mediterranean climate characterized by hot, dry summers, and cold, wet winters, with an average precipitation of 22 inches. Average winter snowfall is about 30 inches, but varies greatly. Mountain snowfall provides a good supply of water year-round, with lowest flows in August and September.
- **Governing Body Format—**The City of Etna is governed by a five-person City Council. This body will assume responsibility for adoption and implementation of this plan. The City employs three full-time employees: a City Clerk responsible for day-to-day operations of the City, a Public Works Director responsible for streets, buildings, water and sewer, and other maintenance tasks, and a Chief of Police. There are also three part-time employees: an assistant clerk, a police administrator, and a maintenance worker. There is a volunteer Fire Department with a chief and 12 to 14 volunteer firefighters. The very active Ambulance Department, which serves the entire Valley, is headed by a director, with 12 to 14 volunteer qualified ambulance personnel. The lack of code enforcement, animal control, and building inspection personnel is presently being addressed by the Council. The General Plan was last updated in 2005; the housing unit was reviewed in March 2011. The Etna Municipal Code, dated 2008, covers administrative ordinances, including a section on Flood Damage Prevention.
- **Development Trends—**There are 362 housing units in Etna, 350 of those are single-family dwellings. The population includes 21.1 percent under 18; 4.7 percent 18-24; 21.4 percent 25-44; 25.1 percent 45-64; and 22.7 percent 65 and older. The median household income in 2010 was $25,179; median family income was $30,461. 19.7 percent of the population live below the poverty level. Housing demands are slow, due to the poor economy—the unemployment rate hovers around 15 percent. Population growth is predicted to be slow, with a possible population of 819 by 2019. There is adequate undeveloped land in Etna to support a population of 1,570 people. The Etna General Plan, adopted in 2005, includes a comprehensive plan to guide community development, including goals, policies, implementation measures, annexation, zoning, subdivision, design review and capital improvement.

## 4.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 4-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 0
- Number of Repetitive Flood Loss Properties that have been mitigated: 0

## 4.4. HAZARD RISK RANKING

Table 4-2 presents the ranking of the hazards of concern.

## 4.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 4-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 4-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 4-5. Classifications under various community mitigation programs are presented in Table 4-6.

## 4.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 4-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 4-8 identifies the priority for each initiative. Table 4-1 summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The City General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

### *National Flood Insurance Program*

The City of Etna does participate in the National Flood Insurance Program (NFIP) that provides federally backed flood insurance in exchange for communities enacting floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act. The County and most of the partner cities for this plan participate in the NFIP and have adopted regulations that meet the NFIP requirements. At the time of the preparation of this plan, all participating jurisdictions in the partnership were in good standing with NFIP requirements.

## 4.7. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Etna are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 4-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Flood | 12/2005-1/2006 | Over $200,000, |
| Flood | 12/1996-1/1997 | No estimates available |
| Flood | 2/1986 | No estimates available |
| Flood | Winter 1974 | No estimates available |
| Flood | 12/1964 | No estimates available; 1/3 of city flooded |

**TABLE 4-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Wildfire | 54 |
| 2 | Flood | 30 |
| 3 | Severe Weather | 12 |
| 4 | Drought | 10 |
| 5 | Earthquake | 6 |
| 6 | Volcano (lahar/ash fall) | 6 |
| 7 | Dam failure | 0 |
| 8 | Landslide | 0 |

**TABLE 4-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | Etna Municipal Code, 2008, Title 15 |
| Zonings | Y | N | N | Y | EMC, 2008, Title 17 |
| Subdivisions | Y | N | N | ? | EMC, 2008, Title 16 |
| Stormwater Management | N | N | N | ? | NA |
| Post Disaster Recovery | N | N | N | N | NA |
| Real Estate Disclosure | N | N | N | N | NA |
| Growth Management | N | N | N | N | NA |
| Site Plan Review | N | N | N | N | NA |
| Special Purpose (flood management, critical areas) | Y | N | N | ? | EMC, 2008, Title 14 |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | Etna General Plan, 2005. Adopted the local hazard mitigation plan into the safety element of general plan. |
| Floodplain or Basin Plan | N | N | N | N | NA |
| Stormwater Plan | N | N | N | ? | Presently being addressed |
| Capital Improvement Plan | N | N | N | N | NA |
| Habitat Conservation Plan | N | N | N | N | NA |
| Economic Development Plan | N | N | N | N | Etna is a member of the Siskiyou County Enterprise Zone |
| Emergency Response Plan | Y | N | N | Y | Etna Fire Dept., 2009, under revision |
| Shoreline Management Plan | N | N | N | N | NA |
| Post Disaster Recovery Plan | N | N | N | N | NA |

**TABLE 4-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available for mitigation activities | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | Contract service w/city engineer and PMC (private planning company) |
| Engineers or professionals trained in building or infrastructure construction practices | Y | Contract w/city engineer |
| Planners or engineers with an understanding of natural hazards | Y | Contract w/city engineer and PMC |
| Staff with training in benefit/cost analysis | Y | None on staff; available by contract w/private co. |
| Floodplain manager | Y | City clerk |
| Surveyors | Y | Contract service with city engineer |
| Personnel skilled or trained in GIS applications | Y | Contract service with city engineer |
| Scientist familiar with natural hazards in local area | Y | Contract w/PMC and/or Resource Management (private company) |
| Emergency manager | Y | Etna Fire Chief |
| Grant writers | Y | Contract w/Great Northern (private co.) |

**TABLE 4-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? To use for mitigation actions. |
|---|---|
| Community Development Block Grants | Y |
| Capital Improvements Project Funding | Y |
| Authority to Levy Taxes for Specific Purposes | Y |
| User Fees for Water, Sewer, Gas or Electric Service | Y |
| Incur Debt through General Obligation Bonds | Y |
| Incur Debt through Special Tax Bonds | Y |
| Incur Debt through Private Activity Bonds | N |
| Withhold Public Expenditures in Hazard-Prone Areas | Y |
| State Sponsored Grant Programs | Y |
| Development Impact Fees for Homebuyers or Developers | N |

**TABLE 4-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | No | N/A | N/A |
| Building Code Effectiveness Grading Schedule | Unknown | N/A | N/A |
| Public Protection | Yes | Unknown | Unknown |
| Storm Ready | No | N/A | N/A |
| Firewise | No | N/A | N/A |

**TABLE 4-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **E-1** Feasibility study for complete upgrade of stormwater drain system | | | | | | | |
| New | Flooding | 1,2,3,4,6,7 | City | $35,000 High | State, GF, FEMA Mitigation grants | Short term | Ongoing |
| **E-2** Update/construct/retrofit storm drain system in ensure maximum efficiency | | | | | | | |
| Existing | Flooding | 2,3,4,6 | City | $500,000 High | Rural USDA, DWR, FEMA HM grants | Short term | Ongoing |
| **E-3** Retrofit sewer mains in floodplain area and extend water main for fire hydrant | | | | | | | |
| Existing | Fire/ Flood | 2,3,6,7 | City | $100,000 High | FEMA HMA grant | Short term | Ongoing |
| **E-4** Continue participation and improve class rating in ISO programs (Building Code Effectiveness Grading, Public Protection) | | | | | | | |
| Existing | Fire/Flood | 1,2,4,5,7,8,9 | City | Low | Gen Fund | Ongoing | Ongoing |
| **E-5** Add a third reservoir (300,000 gallons) at the water plant for fire protection/drought management | | | | | | | |
| New | Fire/drought | 1,2,3,4,7 | City | $300,000 High | USDA Rural, FEMA Mitigation grant, DWR/State prop grants. | Short term | Ongoing |
| **E-6** Clear fuels to provide defensible open space: complete/maintain fuel break close to city boundaries; establish Etna Fire Safe Council | | | | | | | |
| Existing | Fire | 1,2,3,4,5,7,8 | City | $20,000 Medium | GF, FEMA Mitigation grants | Short term | Ongoing |
| **E-7** Require private property owners in city limits to maintain defensible space | | | | | | | |
| Existing | Fire | 2,3,4,5,7 | City | Low | Gen Fund | Ongoing | Ongoing |
| **E-8** Integrate risk assessment information from Siskiyou County Hazard Mitigation Plan into available City planning documents | | | | | | | |
| New | All hazards | 1,2,4,7,8 | City | $10,000 Low | Gen Fund | Short term | Ongoing |

**TABLE 4-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **E-9**—Update Emergency Operations Plan | | | | | | | |
| Existing | Fire, Floods | 1,2,3,4,5,7,8 | City | $10,000 Low | Gen Fund | Short term | Ongoing |
| **E-10**—Integrate the Hazard Mitigation Plan into the Safety Element of the General Plan | | | | | | | |
| New | All hazards | 1,2,4,5,7,8 | City | $10,000 Low | Gen Fund | Short term | Ongoing |
| **E-11**—Update Etna Municipal code language and enforcement re: Building and Fire Codes | | | | | | | |
| Existing | All hazards | 1,2,3,4 | City | $5,000 Low | Gen Fund | Short term | Ongoing |
| **E-12**—Complete or update mutual aid agreements with adjoining entities (City of Fort Jones, Scott Valley Fire Dist., CDF) | | | | | | | |
| Existing | Fire, Flood, Drought | 1,2,8 | City | Low | Gen Fund | Short term | Completed |
| **E-13**—Develop educational materials re: disaster planning, natural hazard risk, etc.; work with local schools, civic/social entities, Chamber of Commerce, Family Resource Center to educate community in hazard mitigation/disaster preparedness | | | | | | | |
| New | All hazards | 2,4,5,7,8,9 | City | $5,000 Low | Gen Fund, Shared cost w/partners | Short term | Ongoing |
| **E-14—**Consider participation in the Community Rating System (CRS) program | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8, 9 | City | Low | City | Short Term | Ongoing |
| **E-15—**Continue to maintain compliance and good standing in the National Flood Insurance Program (NFIP) | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term | Ongoing |
| **E-16—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | High | City, FEMA Mitigation Grants | Long Term | Ongoing |
| **E-17—**Support County-wide initiatives identified in Volume 1 of this Plan | | | | | | | |
| New and Existing | All Hazards | 1, 2, 3, 4, 5, 6, 7, 8, 9 | City | Low | City | Short Term | Ongoing |
| **E-18—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1 | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City, FEMA Mitigation Grants | Short Term | Ongoing |

**TABLE 4-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| E-1 | 6 | High | High | Yes | Yes | No | High |
| E-2 | 4 | High | High | Yes | Yes | No | High |
| E-3 | 4 | High | High | Yes | Yes | No | High |
| E-4 | 7 | High | Low | Yes | No | Yes | High |
| E-5 | 5 | High | High | Yes | Yes | No | High |
| E-6 | 7 | High | Med | Yes | Yes | No | High |
| E-7 | 5 | High | Low | Yes | No | Yes | High |
| E-8 | 5 | Med | Low | Yes | No | Yes | Med |
| E-9 | 7 | High | Low | Yes | No | Yes | Med |
| E-10 | 6 | High | Low | Yes | No | Yes | Med |
| E-11 | 4 | Med | Low | Yes | No | Yes | Med |
| E-12 | 3 | High | Low | Yes | No | Yes | High |
| E-13 | 6 | High | Low | Yes | No | Yes | Med |
| E-14 | 9 | Med | Low | Yes | No | Yes | Med |
| E-15 | 9 | Low | Low | Yes | No | Yes | High |
| E-16 | 9 | High | High | Yes | Yes | No | High |
| E-17 | 9 | Med | Low | Yes | No | Yes | High |
| E-18 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 4-9.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |

**TABLE 4-10.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | — | — | — | — | — | — |
| Drought | E-5, E-17, E-18 | E-17 | E-9, E-14, E-17, E-18 | | E-13 | E-5 |
| Earthquake | E-17, E-18 | E-17 | E-17, E-18 | | | |
| Flood | E-1, E-2, E-4, E-8, E-9, E-15, E-16, E-17, E-18 | E-1, E-2, E-11, E-12, E-15, E-16, E-17 | E-9, E-14, E-15, E-16, E-17, E-18 | E-15, E-16 | E-4, E-10, E-13, E-15, E-16 | E-2, E-3, E-15 |
| Landslide | — | —- | — | — | — | — |
| Severe Weather | E-1, E-2, E-3, E-4, E-9, E-17, E-18 | E-3, E-17 | E-9, E-10, E-14, E-17, E-18 | E-6, E-7 | E-10, E-11, E-12 | E-4, E-6, E-7 |
| Volcano | E-11 | , E-17 | E-14 | E-11 | E-9, E-10 | |
| Wildfire | E-4, E-5, E-6, E-7, E-17, E-18 | E-3, E-5, E-6, E-7, E-17 | E-8, e-9, E-12, E-14, E-17, E-18 | E-4, E-5, E-6, E-7, E-8, E-9, E-10, E-12, E-13 | E-10, E-13, E-14 | E-9, E-10, E-11, E-12, E-14 |

a. See Section 1.3 for description of mitigation types

# CHAPTER 5.
# TOWN OF FORT JONES ANNEX

## 5.1. HAZARD MITIGATION PLAN POINT OF CONTACT


**Primary Point of Contact**

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31 Newton St
Fort Jones, CA 96032
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**Alternate Point of Contact**

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Fort Jones, CA 96032
Telephone: 530 468-2281
e-mail Address: ksmith@sisqtel.net


## 5.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation** March, 1872
- **Current Population—**688 as of 2016
- **Population Growth—**+27.1 percent (mostly due to a prior annexation)
- **Location and Description** The Town of Fort Jones is located in central Siskiyou County in Northern California, 15 miles southwest of Yreka, the county seat. The general area is referred to as Scott Valley and the Town is surrounded predominately by agricultural and forest land.
- **Brief History—**Fort Jones takes its name from a frontier outpost once located less than a mile to the south of the current city limits. The town was originally named Scottsburg (ca. 1850), but was changed to Scottsville shortly thereafter. In 1852, the site was again renamed, this time in honor of Mr. O.C. Wheelock who, with his partners, established one of the area's first commercial enterprises. In 1854, a post office was established and the town was renamed again, becoming known as Ottitewa, the Indian name for the Scott River branch of the Shasta tribe. The name remained unchanged until 1860 when local citizens successfully petitioned the postal department to change the name to Fort Jones.
- **Climate—**The climate data provided by USDA/NRCS list the average annual minimum temperature for Fort Jones as 20º to 25º and the average annual maximum temperature as 85º to 95º. The average annual precipitation is 11 to 39 inches.
- **Governing Body Format—**The City government consists of a five-member City Council, administrative staff, and public works, parks, road, and fire department personnel. The City provides water, sewer, storm drainage and other public works services to properties inside and outside the city limits. The City is directed, administratively and financially, by the City Council in concert with city staff. The City owns numerous properties, buildings, facilities and infrastructure to support the function of the City.
- **Development Trends—**The City has sufficient land within the city limits and sphere of influence to accommodate the expected growth, and the community has sufficient commercial and industrial lands to support that population.

## 5.3. JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 5-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 2
- Number of Repetitive Flood Loss Properties that have been mitigated: 1

## 5.4. HAZARD RISK RANKING

Table 5-2 presents the ranking of the hazards of concern.

## 5.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 5-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 5-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 5-5. Classifications under various community mitigation programs are presented in Table 5-6.

## 5.6. HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 5-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 5-8 identifies the priority for each initiative. Table 5-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the Town changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the Town. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the Town and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The Town's General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the Town will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

### *National Flood Insurance Program*

The Tow of Fort Jones does participate in the National Flood Insurance Program (NFIP) that provides federally backed flood insurance in exchange for communities enacting floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act. The County and most of the partner cities for this plan participate in the NFIP and have

adopted regulations that meet the NFIP requirements. At the time of the preparation of this plan, all participating jurisdictions in the partnership were in good standing with NFIP requirements.

## 5.7. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the Town of Fort Jones are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 5-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Flood | 1/1973 | $86,206.90 (County) |
| Flood | 1/1997 | $5,500,000 (County) |
| Flood | 12/2005 | $58,662.(City) $7,000,000 (County) |
| Wildfire | Multiple events | Approximately $69,000,000 |

**TABLE 5-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Flood | 54 |
| 1 | Wildfire | 54 |
| 3 | Severe Weather | 33 |
| 4 | Drought | 18 |
| 5 | Volcano | 6 |
| 6 | Landslide | 3 |
| 7 | Earthquake | 0 |
| 8 | Dam Failure | 0 |

**TABLE 5-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | Contract w/Siskiyou County |
| Zonings | Y | N | N | Y | Title 18, Municipal Code |
| Subdivisions | Y | N | N | N | Title 17, Municipal Code |
| Stormwater Management | Y | N | N | N | Title 18, Municipal Code |
| Post Disaster Recovery | Y | N | N | N | Title 2, Municipal Code |
| Real Estate Disclosure | Y | N | N | Y | CA State Civil Code 1102 |
| Growth Management | Y | N | N | Y | Title 18, Municipal Code |
| Site Plan Review | Y | N | N | N | Title 18, Municipal Code |
| Special Purpose (flood management, critical areas) | Y | N | N | N | Title 18, Municipal Code |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | Fort Jones General Plan |
| Floodplain or Basin Plan | N | N | N | N | |
| Stormwater Plan | N | N | N | N | |
| Capital Improvement Plan | N | N | N | N | |
| Habitat Conservation Plan | N | N | N | N | |
| Economic Development Plan | N | N | N | N | |
| Emergency Response Plan | Y | N | N | N | Fort Jones General Plan |
| Shoreline Management Plan | N | N | N | N | NA |

**TABLE 5-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| Post Disaster Recovery Plan | Y | N | N | N | Fort Jones General Plan |

**TABLE 5-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | Planners, engineers and other specialists are contracted for job specific work. |
| Engineers or professionals trained in building or infrastructure construction practices | Y | Contracted for job specific work |
| Planners or engineers with an understanding of natural hazards | Y | Contracted for job specific work |
| Staff with training in benefit/cost analysis | Y | City Clerk and staff/ Contracted for job specific work |
| Floodplain manager | Y | Public Works Director |
| Surveyors | Y | Contracted for job specific work |
| Personnel skilled or trained in GIS applications | Y | Contracted for job specific work |
| Scientist familiar with natural hazards in local area | Y | Contracted for job specific work |
| Emergency manager | Y | Public Works Director |
| Grant writers | Y | Contracted for job specific work |

**TABLE 5-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Y |
| Capital Improvements Project Funding | |
| Authority to Levy Taxes for Specific Purposes | |
| User Fees for Water, Sewer, Gas or Electric Service | Y |
| Incur Debt through General Obligation Bonds | Y |
| Incur Debt through Special Tax Bonds | |
| Incur Debt through Private Activity Bonds | |
| Withhold Public Expenditures in Hazard-Prone Areas | |
| State Sponsored Grant Programs | Y |

| | |
|---|---|
| Development Impact Fees for Homebuyers or Developers | |

**TABLE 5-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | No | N/A | N/A |
| Building Code Effectiveness Grading Schedule | Yes | Unknown | Unknown |
| Public Protection | Yes | Unknown | Unknown |
| Storm Ready | No | N/A | N/A |
| Firewise | No | N/A | N/A |

**TABLE 5-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #FJ1—**Increase channel capacity of Moffett Creek by removing utility line dams, vegetation and accumulated sediment. | | | | | | | |
| Existing | flood | 2, 11, 31, 39, 42 | Town | $260,000 High | HMGP, PDM, FMA, RFC | Short term | Ongoing |
| **Initiative #FJ2—**Clear 100 feet of defensible space for 30 vulnerable homes**.** | | | | | | | |
| Existing | Wildfire | 29, 39, 42 | Town | $75,000 Medium | HMPG, PDM | Short term | Ongoing |
| **Initiative #FJ3—**Provide 150 acres of shaded fuel break, restore emergency fire road. | | | | | | | |
| Existing | Wildfire | 5, 8, 10, 29, 39, 41 | Town | $225,000 High | HMPG, PDM | Short term | Ongoing |
| **Initiative #FJ4—**Consider participation in the Community Rating System (CRS) program. | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | Town | Low | Town | Short Term | Ongoing |
| **Initiative #FJ5—**Continue to maintain compliance and good standing in the National Flood Insurance Program (NFIP). | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | Town | Low | Town | Short Term | Ongoing |
| **Initiative #FJ6—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | Town | High | Town, FEMA Mitigation Grants | Long Term | Ongoing |
| **Initiative #FJ7—**Support County-wide initiatives identified in Volume 1 of this Plan. | | | | | | | |

**TABLE 5-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | Town | Low | Town | Short Term | Ongoing |
| **Initiative #FJ8—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | Town | Low | Town FEMA Mitigation Grants | Short Term | Ongoing |

**TABLE 5-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| FJ1 | 5 | High | High | Yes | Yes | No | High |
| FJ2 | 3 | High | Med | Yes | Yes | No | High |
| FJ3 | 6 | High | High | Yes | Yes | No | High |
| FJ4 | 9 | Med | Low | Yes | No | Yes | Med |
| FJ5 | 9 | Low | Low | Yes | No | Yes | High |
| FJ6 | 9 | High | High | Yes | Yes | No | High |
| FJ7 | 9 | Med | Low | Yes | No | Yes | High |
| FJ8 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 5-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | 7, 8 | 6 | 7, 8 | | | |
| Drought | 7, 8 | 6 | 7, 8 | | | |
| Earthquake | 7, 8, | 6 | 7, 8 | | | |
| Flood | 4, 5, 7, 8 | 1, 4, 5, 6 | 4, 5, 7, 8 | 1, 4, 5 | 4, 5 | 5 |
| Landslide | 7, 8 | 6 | 7, 8 | | | |

**TABLE 5-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Severe Weather | 7, 8 | 6 | 7, 8 | | | |
| Volcano | 7, 8 | 6 | 7, 8 | | | |
| Wildfire | 3, 7, 8 | 2, 6 | 3, 7, 8 | 2 | 3 | 3 |

a. See Section 1.3 for description of mitigation types

**TABLE 5-10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |

# CHAPTER 6.
# CITY OF MT. SHASTA ANNEX

## 6.1 Points of Contact

Primary Contact
Bruce Pope, City Manager
305 N Mt. Shasta Blvd.
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Alternate Point of Contact
Juliana Lucchesi, City Planner
305 N Mt. Shasta Blvd.
Mt. Shasta, CA 96067
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## Planning Team

*City of Mt. Shasta – Staff*

Bruce Pope, City Manager
Parish Cross, Police Chief
Rod Bryan, Public Works Director
Matt Melo, Fire Chief
Muriel Terrell, Finance Director
Juliana Lucchesi, City Planner

*City of Mt. Shasta – Legislative Bodies*

City Council
Planning Commission

*Assisting Agencies*

Mercy Medical Center
California Highway Patrol
CalFire – Land Use Planning
U.S. Forest Service
Pacific Power

### 6.1.1 Planning Process

The 2018 update of the City of Mt. Shasta Annex to the Siskiyou County Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) involved internal review of the previous LHMP, outreach to the public, safety professionals, and community leaders, and revision to the annex to reflect the input received.

The update engaged the public through a three-day public workshop, survey, and public meetings. The input received is recorded in the update and used to develop and prioritize mitigations in the mitigation strategy. The public engaged through the update outreach involved local and regional jurisdictions and agencies; specifically, City of Dunsmuir, McCloud Community Services District, Siskiyou County, and U.S. Forest Service.

## 6.2 Jurisdictional Profile

Incorporation Date: May 31, 1905

The City of Mt. Shasta is governed by a five-member City Council with four-year terms, with an appointed Mayoral format. The City also maintains a volunteer Planning Commission with judiciary and legislative powers, and multiple volunteer advisory bodies which advise the City Council and Planning Commission. The operations of the City are achieved through a City Manager management system with departments reporting to the City Manager. The City has five main departments; Finance, Fire, Planning, Police, and Public Works.

Population Trends: The City of Mt. Shasta has experienced a net decrease in population between 2010 and 2018. The current total population is 3,383. The City's projected population for the next five years will continue to decrease¬¬ at an average rate of 0.2% (Table 1).

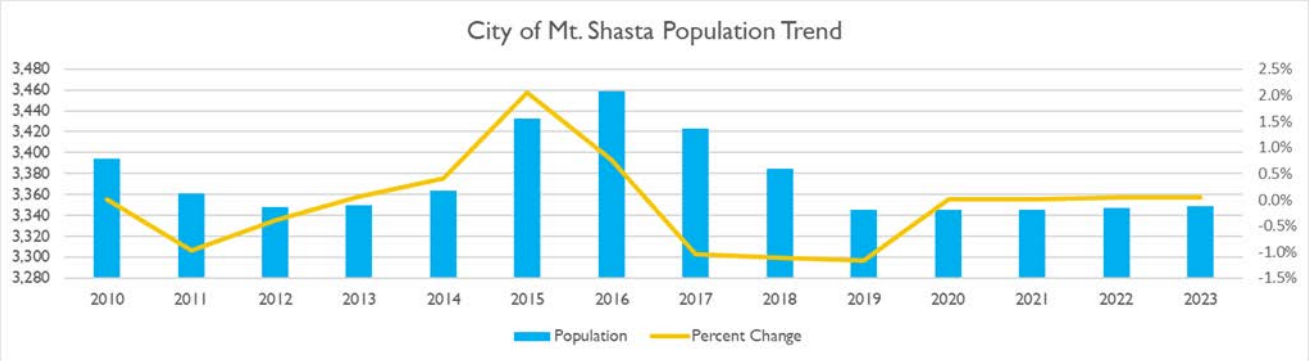



*Table 10: California Department of Finance, Demographic Research Unit Population Estimate for Cities, Counties, and the State, 2011-2018, with 2010 Benchmark & Total Estimated and Projected Population for California Counties: July 1, 2010 to July 1, 2060*

The City of Mt. Shasta demographic make-up is like the greater Siskiyou County population. The City is primarily white, English is the primary language spoken, and over 50 years of age (Table 2). The population age trends indicate that the City will continue to age with a decrease in percentage of school aged children (5 to 19 years) over the next five years.

The City of Mt. Shasta is considered a disadvantaged community in the state of California. The definition of a disadvantaged community is an area with household incomes at or below 80 percent of the statewide

median income. The distribution of income in the community indicates that half of the residents live on an annual income below $35,000 significantly lower than the $63,783 median income for the state. (Table 3).

The transient population due to regional tourism and climate requires additional safety consideration in terms of disasters. This transient population is made-up of international and national tourists, outdoor recreationalists, and regional homeless and has significantly increased in the past 5 years.

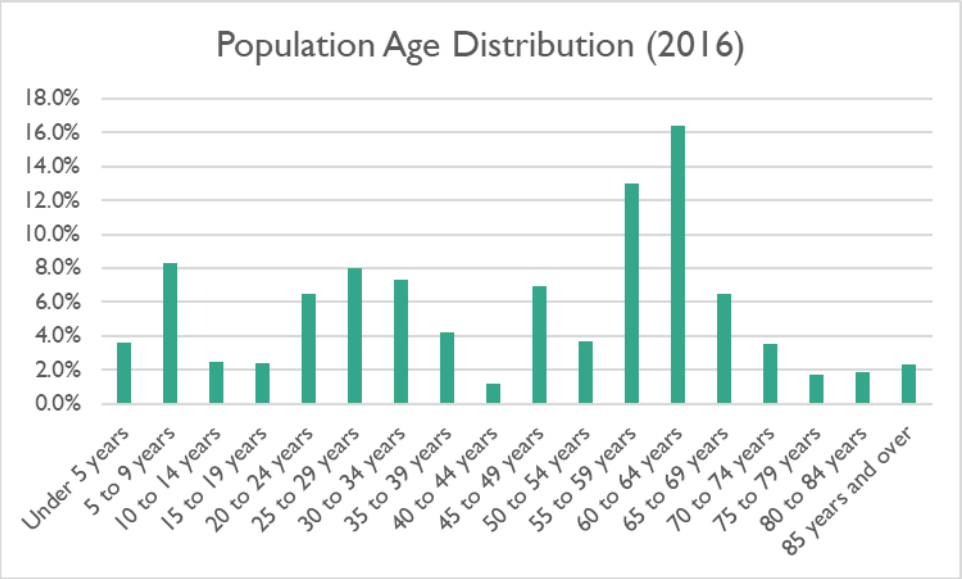



*Table 11: United States Census American Community Survey 2016 Estimates for Mount Shasta City*

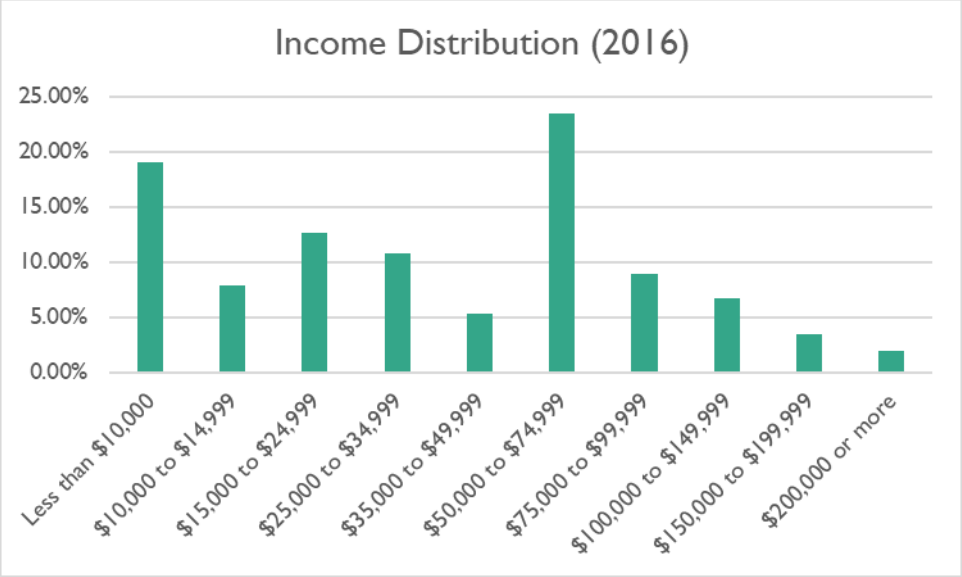



*Table 12: United States Census American Community Survey, 2016 Estimates for Mount Shasta City*

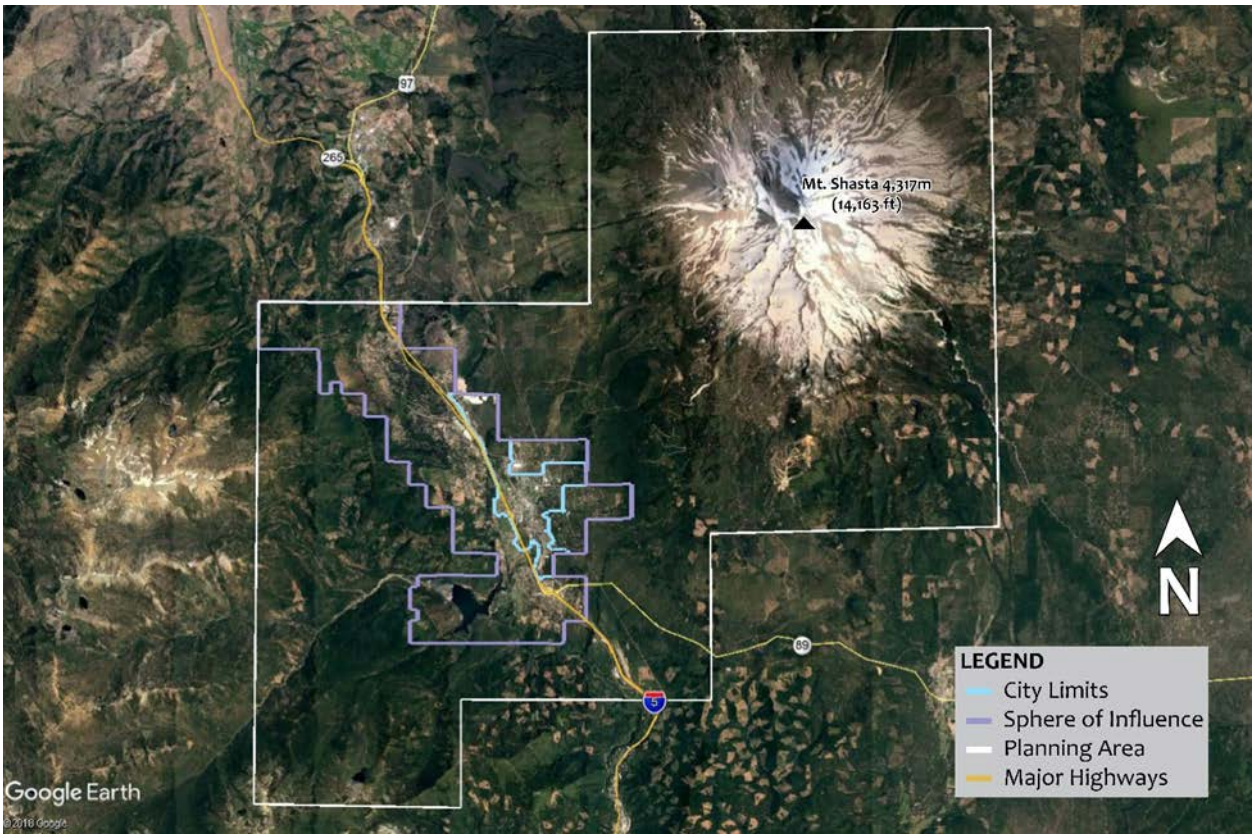
### 6.2.1 Economic Profile

The City of Mt. Shasta is a tourism-based economy with some permanent employers in the healthcare, technology, and financial services sectors. The tourism industry results in primarily service-based jobs that support spiritualism, outdoor recreation, and hotel industries. Over 60% of the jobs provided in the City of Mt. Shasta are held by individuals living outside the City Limits.

## 6.3 Planning Area

The City of Mt. Shasta is located at the southwestern base of Mount Shasta at an elevation of 3,500 feet above sea level. The City sits at the Highway 89 and Interstate 5 Interchange. This interchange connects the City with Reno, Nevada, Medford, Oregon, and the rest of southern California. The City is 55 miles north of the City of Redding and 88 miles south of Medford, Oregon which are both the nearest metropolitan areas. The City is located at the headwaters of the Sacramento River. The City is considered the northern boundary of the Upper Sacramento Regional Watershed. The City is surrounded by the Shasta-Trinity National Forest which is managed by the United States Forest Service.

The Planning Area for the Local Hazard Mitigation Plan Update 2018 has been expanded to match the Planning Area of the City's General Plan. The Planning Area includes Federal, State, Private, County, and City owned land. The inclusion of all land holders is to expand planning and safety efforts to protect the Mt. Shasta region.



## 6.4 Climate Change

The City of Mt. Shasta actively participates in the assessment of climate change on hazard frequency, severity, and the City's ability to recover from future disaster events. The Resilience Dialogues is a program that connects the City with by a multi-disciplinary team to identify climate change factors in the Mt. Shasta region and next steps the City should take to better plan for climate change and disaster resiliency (Appendix A).

The City is highly concerned with the change in severity and frequency of weather events. The City has experienced a significant drop in the number of rain events leading to drought in the region. In addition to less rain events, the severity of these rain events has increased leading to two Federally Declared Disaster in the last two years.

Climate change, outdated forest management practices, and the promotion of fire suppression over the past 50 years has created an environment on the verge of a mega-fire. A mega-fire is a wildfire that exceeds 100,000 acres. The region has not created or enforced strict timber management practices to reduce the fuel load of adjacent forests. The City has also not applied current development practices to ensure new development avoids high fire severity zones or reduces the fire severity rating.

Overall, the issue of climate change is a difficult one to mitigate due to the influence of other jurisdictional practices. Climate change cannot be mitigated by one local jurisdiction. The collaboration and understanding of other communities will be needed. The City of Mt. Shasta aims to improve plans and mitigation strategies to reduce carbon emissions, restore and preserve ecosystem services, and reduce the impact of climate change on weather events. These goals are meant to reduce our city's contribution to climate change with the hope that other jurisdictions reduce their impact.

## 6.5 Outreach Methods

The City of Mt. Shasta Planning department hosted a workshop, survey, and will present a draft version of the 2018 update to the Planning Commission and City Council of the City of Mt. Shasta. The Planning Commission and City Council meetings are open to the public and the draft update will be circulated publicly prior to both meetings.

Spirit of Mt. Shasta Region Building Resilience Workshop

The City of Mt. Shasta conducted a three-day workshop with 26 participants in March 2017 to collect input from the public, community leaders, and safety professionals concerning Disaster Resilience. The event was advertised and framed as a regional discussion involving the City of Mt. Shasta, City of Dunsmuir, McCloud Community Service District, and Siskiyou County. Technical advisors from the Federal Emergency Management Agency (FEMA), Environmental Protection Agency (EPA), and Metropolitan Transportation Commission/Association of Bay Area Governments facilitated the workshops using Regional Resilience Toolkit. The input from this workshop has shaped how the City views disaster mitigation, operations, and post-disaster recovery; specifically, wildfire (Appendix B).

Participants were asked to identify on maps areas of concern and places that are vulnerable to natural disasters. The main areas that were highlighted by the public and safety professionals were natural landmarks and major highways. The City is surrounding by the Shasta-Trinity Forest managed by the U.S. Forest Service. This forest land provides opportunities for outdoor recreation and natural resource

industries. The concern listed in the event stated that these forests have been mismanaged and are a high concern for wildfire.

The second areas listed on the maps were major highways in and out of the region. Interstate 5, Highway 89, and Highway 97 are the only major transportation routes in and out of the region. If any of these transportation routes were disabled, commerce and evacuation routes would be compromised.

The result of the workshop was a list of major themes and four follow-up topic areas. The major themes gleaned from the event were:

- Resilience is more than bouncing back; it is an opportunity to transcend a disaster and create a stronger community and economy.
- The rate of change due to climate change is a substantial challenge. Many of the hazards are not new, but they are occurring more frequently and with more severity, including winter storms, and wildfires
- Planning efforts need to strike a balance between the needs and demands of the community and economy, and between urbanized areas and rural locations.
- Need to improve communication and collaboration across jurisdictions is critical, especially to reduce duplication of jurisdictional and agency plans across the region
- Neighborhood and community engagement and communications surrounding disaster resilience should be improved.
- There is a need to diversify the region's economic industries to be more resilient
    - Establish alternative economies beyond the timber industry and recreational tourism, which could include non-timber forest products, mushroom hunting, arts and music, and a "learning laboratory" for regional colleges and universities that highlight the uniqueness of the Mt. Shasta region
    - Showcase the are as attractive not extractive
    - Manage and adapt for environmental and community benefits; manage the forest and create resilience

Theses major themes have been integrated into the mitigation strategy of the 2018 LHMP update.

City of Mt. Shasta General Plan 2045 Survey

The City of Mt. Shasta is in the process of revising the City's General Plan which guides city decision making for the future. Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at the workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

Additional Outreach Opportunities

The City of Mt. Shasta is in a General Plan revision which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute. The proposed timeline estimates approval of the General Plan in 2020.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

## 6.6 Review of Previous LHMP

A review of the previous LHMP was conducted initial by City Staff in September of 2017. The City Staff reviewed the previous list of hazards that were assigned priorities and discussed changes to City programs and policies since the LHMP ratification.

The previous LHMP annex for the City of Mt. Shasta lacked all required data and assessments due to errors in the text. Improper filing and connecting of data files have led to a version that is not usable. The mitigation action plan was recovered and action completeness was recorded (Appendix C).

## 6.7 Capability Assessment

The City excels and meets local, state, and federal expectations related to emergency response and evacuation, but little else. The City's long-term plans address hazards but are not applied to applicable codes and other plans. Based on the Capability Assessment (Appendix D), the City has room for improvement in all four categories.

Planning and Regulations

The 2007 General Plan serves as the City's long-term comprehensive plan. The plan has a specific chapter, called elements, that is dedicated to characterizing and mapping all applicable hazards in the Planning Area. The Safety Element discusses the hazards and offers policies and recommended actions to address these hazards. This element also weaves through the document to ensure that the long-term plan for land use, transportation, and housing adequately address the hazards identified in the Safety Element.

Unfortunately, the coordination and adequate language to address hazards ends with the long-term plans. The City's zoning code and subdivision regulations have not been updated to reflect the goals and policies of the 2007 General Plan. The Municipal Code does provide language on very high fire severity zones but does not guide development away from these zones.

Improvements to planning and regulations could be done to create consistency between the long-term and applied planning tools and meet federal and state requirements. The first improvement would be to bring the planning regulations into conformance with current hazard planning best practices. The City is in the process of revising the General Plan which would include a revision of the subdivision and zoning code.

Administrative and Technical

The City of Mt. Shasta safety personnel and supporting staff can serve the community during and post-disaster. Improvements can be made to staff knowledge and application of hazard mitigation planning. The frequency in which hazard mitigation and preparedness can be increased in all departments that are not safety related.

Many of the hazard and emergency planning efforts are done by safety personnel (i.e. police, water testing staff, and fire) with little involvement of other departments. A greater effort can be made to integrate finance, planning, administrative, and other staff into hazard mitigation and preparedness planning. This would include integrating hazards into department policies and policy documents.

Financial

The financial category of the capability assessment indicates that it is the weakest section. The City does not actively set aside funds for hazard mitigation or disaster recovery. The previous Federally Declared Disasters indicated that the City should begin to set aside funds for quick response to disaster recovery projects.

In addition to the City setting aside funds, determining consistent funding for hazard mitigation projects is a high priority. The City does not effectively utilize local measures, state programs, and federal funding for capital improvement projects that focus on hazard mitigation. The development of an easy to use matrix to rank current capital improvement projects' ability to address hazards should be created to begin the integration of hazards into projects and prioritize these projects more on their ability to mitigate hazards.

Education and Outreach

Education and outreach is the only category in the capability assessment that the City of Mt. Shasta currently invests a significant amount of time and effort in. A review of the education materials is underway with anticipated updates to evacuation routes, emergency preparedness, and mitigating various hazards.

The City could improve in providing more materials concerning flooding from wetlands and storm events, preparing for high winds and storm events, and winter weather safety. Written materials should also be translated into various languages to assist international and non-English speaking visitors and residents.

The outreach can occur in more diverse mediums. Most education and outreach are done through written materials. The greater public could benefit from safety preparedness clinics, interactive safety exercises, and online videos with preparedness information.

National Flood Insurance Program (NFIP)

The City of Mt. Shasta is not located in an area that is eligible for the NFIP. The City does sit in an area prone to springs and wetlands that result in flooding, but these hazards are not recognized under the NFIP.

## 6.8 Hazard Event History (2013 to Present)

The City of MT. Shasta in the past 5 years has experienced 2 of federally recognized disasters. There were not state declared disasters or fire assistance requests in the Planning Area.

| City of Mt. Shasta Hazard Events | | |
|---|---|---|
| Type of Event | Date | Post Disaster Awarded |
| California Severe Winter Storms, Flooding, Mudslides (DR-4308) | 4/1/2017 | $ 40,790.52 |
| California Severe Winter Storms, Flooding, and Mudslides (DR-4301) | 2/12/2017 | $ 82,046.50 |

## 6.9 Risk Assessment

The list of possible hazards that could occur in the Planning Area for the City of Mt. Shasta has remained relatively the same as the previous with the addition of Man-Made Disaster (i.e. railroad derailment, hazardous waste spill), Thunderstorms and Lighting, and dividing Severe Weather into various categories. Severe Weather has been separated into Extreme Temperatures, Winter Storms, and Damaging Winds. IT was important to City Staff to separate the Severe Weather hazard into the parts due to the history of these types of events.

The hazards descriptions area arranged in the high concern to lowest concern. The ranking of the hazard was done through an assessment of the frequency, severity, and history of the events in the Planning Area.

The most recent data and mapping of the below hazards is found in the City of Mt. Shasta 2007 General Plan (Appendix E).

### 6.9.1 Wildfire

The Wildfire hazard is the greatest hazard risk for the City of Mt. Shasta Planning Area. The impacts of climate change, fire suppression methods, and mismanagement of timberland have resulted in an environment highly prone to wildfire. Wildland and structure fires are both possible in the Planning Area, but the main concern for the City is wildland fires.

All areas of the Planning Area would be impacted from wildfire hazard. Wind, topography, and fuel load would determine the direction and longevity of the fire during the event. The other factor for wildfire probability is the history of the area.

Wildfire is not necessarily a bad hazard. Most of the forested areas in California have been managed with wildfire, but the loss of frequent burning and timber management practices have led to an environment where if a wildfire did break out, it would consume most of the Planning Area. The last recorded major

wildfire in the Planning Area was in the 1950's. This long break in fires means the probability of a wildfire is high.

## 6.9.2 Winter Storms

Winter storms is a subcategory of severe storm weather that was sectioned off due to the high frequency and severity of snow events. Two of the past five winter seasons have resulted in winter weather events that resulted in a high amount of snow dropping in a short time space. This sudden intensity puts a burden on snow removal services and resulted in the collapse of infrastructure.

Traffic flow and electrical systems in the City limits are the most vulnerable to winter storm hazards. Interstate 5 and Highway 89 are two major thoroughfares that transport supplies to the City. The lack of commercial traffic for an extend period can result in loss of essential food and safety supplies and drop in economic activity.

The electrical system in the City of Mt. Shasta is not totally underground. The sudden drop of heavy snow frequently results in the loss of power. In the past five years, the City experience 15 events of lost power with the longest outage lasting 18 hours. This poses a threat to critical facilities such as communication towers, healthcare facilities, and the hospital that must maintain consistent electrical service.

## 6.9.3 Man-Made Disasters

The proximity of the railroad and major highways results in a high probability and severity of a man-made disaster. Both interstate 5 and the Union Pacific Rail line transport flammable, hazardous chemicals, and petroleum products. The Canterra Loop Spill did not occur in the Planning Area but illustrates the risk that could happen.

The Canterra Loop Spill was a hazardous waste spill in 1991 due to the derailment of a railroad train. The spill resulted in 19,000 gallons of herbicide metam sodium being dumped into the Sacramento River. The incident resulted in a $14 million settlement for environmental and health impacts to the City of Dunsmuir. The restoration of the Sacramento River took 16 years and health impacts to clean-up workers and nearby residents are still being felt.

The same type of event could occur in the Planning Area. The transportation of hazardous compressed gasses and liquid chemicals are a daily occurrence along Interstate 5 and the Union Pacific Rail line. The extent of a hazardous waste incident would depend on the weather and type of hazardous substance. Properties immediate adjacent to the railroad track and interstate and properties within 500 feet of the commerce lines would be negatively impacted. This area is increased in the case of hazardous gas explosions or leaks.

## 6.9.4 Thunderstorms and Lightning

Thunderstorms and lightning events have increased in recent years due to the formation of "thunder heads" from local and regional fires and the warming of the atmosphere. Thunderstorms and lighting pose a high risk to the City due to the indirect create of wildfires in areas that could be inaccessible due to topography and vegetation and striking electrical system structures and lines. The City in the past year has responded to 12 wildland fires that began from lighting strikes. The increased frequency and the probable severity of a resulting wildfire make this hazard one of the top three for the Planning Area.

## 6.9.5 Flood

The City of Mt. Shasta flooding potential is localized, and a result of the wetland environment found in most of the incorporated of the City. Within the greater Planning Area, flooding occurs along riparian wetlands accompanying streams and creeks which lead into Lake Siskiyou. The final destination of all surface water in the Planning Area is the Sacramento River formally beginning in Box Canyon after the Dam.

Unincorporated areas along the Sacramento River are prone to flooding and the only areas that are eligible for the National Flood Insurance Program (NFIP). The area below Box Canyon Dam is subject to flood hazard from high precipitation over a short timeframe and failure of the dam. The areas identified in the last flood study (1973) indicated that the land impacted would not result in significant property loss or potential for the loss of human life. This is due to the lack of development in the floodplain.

Flooding due to high rainfall events and the loss of wetland habitat are higher frequency and severity due to the amount of development in the downtown area of the City of Mt. Shasta. A majority of development in 1950's and 1960's occurred in the areas that were originally wetlands. The filling in of wetlands and lack of buffers between wetlands and development have increased the amount of property damage from seasonal flooding (Appendix G).

## 6.9.6 Drought (Tied)

Drought is not listed in the safety section of the 2007 General Plan but is a high concern hazard for the State of California. The Planning Area contains the headwaters of the Sacramento River which is a major waterway used in agricultural industries in the central valley. The amount of water in the river is dependent upon snowpack on the mountains and consistent rain events. The Planning Area has experienced a decrease in both snowpack and consistent rain events.

The possibility of drought directly impacting the City is very low due to the high water table and available groundwater supplies. The concern surrounding the drought hazard is the need of water in other areas of the state. There is a great public fear that the supply will be shipped to other parts of the state and nation to alleviate droughts. The probably of droughts are high due to the increase in drought occurrence in the past five years but the severity of the hazard is low due to current water supplies.

## 6.9.7 Extreme Temperatures (Tied)

Extreme cold and hot have made their way onto the hazard list. Climate Change and the increase in hardscape due to development has increased the frequency of extreme heat in the summer and extreme cold in the winter. This hazard type is a high concern due to the aging population.

Aging populations and children are more vulnerable to extreme heat and cold than other age demographics. Over-exhaustion and hypothermia are concerns for public health and safety professionals. Extreme temperatures are also difficult to mitigate and avoid in the future.

Based on data from CalAdapt for the Planning Area. The historical annual average maximum temperature is 61.0 Degrees Fahrenheit. The predicted annual mean maximum temperature is 64. 7 Degrees Fahrenheit in the next 20 years. The 3.7 degree difference is significant with little possibility of leveling off or lower in the next 100 years.

The historical annual average minimum temperature is 34.3 Degrees Fahrenheit and will possibly increase to 37.5 Degrees in the next 20 years. Although the minimum temperature is warm and reducing the possibility of extreme cold, there is still a probability of severe drops in temperature for short time spans.

### 6.9.8 Damaging Winds

Like winter storm event, the City experiences damaging winds seasonally in the winter and spring. The damaging winds pose a threat to overhead electrical systems and dead or dying trees. The frequency and probably of the loss of power due to damaging winds is lower that other hazards, but the damage from falling debris is high.

The Planning Area is heavily wooded including the urban areas. Dropping tree limps have damaged power lines, homes, and business in the past five years. There is no active record of the damage or frequency at this time, but it is a concern based on local history and knowledge.

### 6.9.9 Volcanic Event

The City of Mt. Shasta earns its name from the active stratovolcano direct east of the City Limits. Mt. Shasta is the most voluminous of the Cascade Range volcanoes and is 4,317 m (14,163 ft) in height. The volcano is between 300,000 and 500,000 years of age based on geologic records recorded the United State Geologic Service (USGS).

The last major eruption is predicted to be approximately 11,000 years ago which created Black Butte and Shastina on the western side of the volcano. Smaller events have occurred near the summit from volcanic vents concentrated mainly on the east side of the summit. USGS does believes that there was a more recent minor eruption 200-300 years ago.

A volcanic event would be the most severe hazard out of all the hazards in the Panning Area. Volcanic gases, ash, volcanic rock, mudflows, landslides and accompanying seismic activity would result in the destruction of property and loss of human life. It is estimated in the 2007 General Plan Safety Element that 60% of privately developed land is within a volcanic hazard area. In addition to direct impact to property, the accompanying activity could result in the destruction of additional property in the Planning Area.

The frequency of a volcanic event is predicted to be once every 600-800 years, making the probability of a volcanic event within the next 300 years being low. The last estimated date of a possible eruption would be 2376 based on data from a 1980 volcanic study.

### 6.9.10 Dam Failure

Within the Planning Area of the City of Mt. Shasta exists on hydroelectric dam. The Box Canyon Dam separates Lake Siskiyou and Box Canyon in the southwestern portion of the Planning Area. The dam was erected in 1970 and modified in 1984 for electric production. The dam is managed by the Siskiyou County Flood Control and Water Conservation District and the Siskiyou Power Authority.

Lake Siskiyou created by the dam has an estimated 26,000 acre-ft of capacity. The failure of this would result in a drop in electric power availability and flooding of lower stream areas. The majority of the City population would not be impacted by the failure of the dam, but indirectly the recreational nature of Lake Siskiyou would be lost and negatively impact the economy of the City.

Earthquake

The City of Mt. Shasta does not sit on a known fault line and has experience little seismic activity in the last 5 years. The probability of an earthquake event is low but if an event were to occur the severity of that event would be determined by the duration, distance from developed areas, and magnitude.

There have only been two known 4.0 magnitude or higher earthquakes recorded in the area based on a 1994 Faulty Activity study. In the study, it confirms that no active or potentially active faults exist within the Planning Area. Mt. Shasta is known to have minor faults near the summit, but these have no probable activity without a volcanic event.

## 6.9.11 Landslide

The landslide hazard is the lowest risk for the Planning Area. Landslides are more of a concern as a secondary hazard after an earthquake, wildfire, of volcanic event. The probability of a landslide occurring in the Planning Area is low to nonexistent. Although there are natural ridges and steep elevation climbs, the forest habitat provides erosion protection.

Liquefaction is a probable risk in the center of the City of Mt. Shasta proper. The previous high school facility sank into an adjacent wetland area most likely due to liquefaction of the land. The public library project filled in and addressed this risk with proper fill. The probability of more liquefaction is low with little damage to property due to no development in the wetland and adjacent school athletic fields.

**Plan Maintenance**

The City of Mt. Shasta will review the LHMP on an annual basis along with our General Plan at the beginning of the calendar year. The review will consist of a status report of what mitigations have been completed in the previous year and prioritize mitigations to be accomplished in the upcoming year.

The LHMP will be amended as the City receives new disaster information and accomplishes mitigations.

**Mitigation Strategy**

The mitigation strategy for the City of Mt. Shasta is separated in four action types:

| Action Type | Description |
|---|---|
| **Local Plans and Regulations** | These actions include government authorities, policies, or codes that influence the way land and buildings are developed and built |
| **Structure and Infrastructure Projects** | These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards. |
| **Natural Systems Protection** | These are actions that minimize damage and losses and also preserve or restore the functions of natural systems. |
| **Education and Awareness Programs** | These are actions to inform and educate residents, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs. |

Appendix H contains the full list of mitigations set for the 2018 update. The mitigation strategy focuses heavily on education and awareness as a first priority to creating a more hazard resilient community.

## Appendix A: Resilience Dialogues Final Synthesis Report


# Final Synthesis Report Mt. Shasta, California

July 2017

**Resilience Dialogues Final Synthesis Report**

**Mt. Shasta, California, USA**

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# Resilience Dialogues Final Synthesis Report

# Mt. Shasta, California, USA

Introduction

This report captures the key outcomes from the Mt. Shasta, California, Resilience Dialogues process, which took place between May 15 and May 26, 2017. The Resilience Dialogues partners with communities to explore their risks from climate variability and change. Using a professionally facilitated, online process to connect community leaders to a network of vetted national experts, the Resilience Dialogues helps them work together to understand risks and lay the groundwork for long-term resilience. The service connects communities with the most appropriate resources, whether from federal agencies, regional networks, or the private sector. The Resilience Dialogues builds on recent federal efforts, such as the Partnership for Resilience & Preparedness, the Climate Data Initiative, the Climate Resilience Toolkit, and the National Climate Assessment. It also leverages nonprofit programs, including the Thriving Earth Exchange and the Community and Regional Resilience Institute. This report captures the following outcomes from the Mt. Shasta Resilience Dialogues process:

- List of key questions that Mt. Shasta community leaders are seeking to answer regarding how to proceed with building climate resilience;
- Highlights of the exchanges between community leaders and subject matter experts (SMEs) from throughout the dialogue;
- Annotated list of tools and resources that could help community leaders answer their key questions;
- Dialogue participant list; and
- Next steps for the consideration of community leaders.

## Community Context

The City of Mt. Shasta (population 3,394), located in Siskiyou County, California, is the largest of four communities (Mt. Shasta, McCloud, Weed and Dunsmuir; combined population of 10,000) located at the base of Mt. Shasta. This active volcano has a rich history in Native American culture and is considered one of the Seven Sacred Mountains of the World. As it attracts a large number of visitors, the city is home to a thriving economy supporting spiritual pursuits. The city has a tourism-based economy that is sensitive to climate impacts (e.g. skiing, hiking, mountain-biking, mushroom hunting, bird watching, dirt-biking, ATV riding, RV camping). While its once-thriving timber industry is in decline, extractive resource consumption (timber and water) remains prevalent. Maintaining and improving natural recreation options is a growing focus in the community.

Surrounded by lakes, rivers, forests and mountains, Mt. Shasta is rich in natural capital. This natural capital provides outdoor recreation opportunities and aesthetics, and is a point of local pride and community identity. The community is invested in protecting the region's vast expanses of coniferous forest, as well as a large number of endangered and special status species that live within unique microclimates in the region. The ecosystem services provided by these resources benefit the economic and environmental well-being of downstream and regional residents of California.

Mt. Shasta is located in a region that is considered a "Disadvantaged or Severely Disadvantaged Community" by the state, and the city government has limited staff and resources for implementing and monitoring resiliency initiatives. These limitations extend to state mandates concerning city services and infrastructure. Most efforts focus on providing basic services (e.g. clean water). Climate preparedness has historically been perceived as a luxury. However, there is great support in the community for environmental sustainability programs.

### Key Assets

Key assets possessed by Mt. Shasta include:

- *Community buy-in.* There is a high degree of support in the local community for environmental conservation and sustainability initiatives. This interest could be leveraged to support climate resilience in Mt. Shasta via engagement, volunteerism, and support.
- *Natural capital*. Mt. Shasta is located in an area rich in forests, lakes, rivers, mountains and wildlife. Economic, recreational and aesthetic value placed on these resources could be a starting point for engagement and progress on wider resilience initiatives.
- *Sense of place*. As a small, rural community in a specialized environment, Mt. Shasta possesses a unique identity which could serve as a starting point for messaging and action. The value residents place in the quality and identity of their community could make them more willing to engage on resilience issues that they feel are directly relevant to their lives. Initiatives designed to preserve, protect and enhance the community - and thereby contribute to climate resilience – may have high participation rates due to this intrinsic quality.
- *Size*. Small communities tend to find it easier to communicate and collaborate across departments. A couple of highly motivated organizations and businesses working with the local government can often build community support in a small community more rapidly than in larger metropolitan areas.

## Framing Dialogue: List of Key Questions

The purpose of the following questions is to establish a foundation and general direction for Mt. Shasta's climate adaptation and resilience building efforts following the conclusion of the community's participation in the Resilience Dialogues. These questions were developed during the first week of the Community Dialogue, through a conversation about Mt. Shasta's local context, priorities, and questions. The City of Mt. Shasta is primarily interested in strategies and best practices for integrating climate resilience into local plan updates. The community intends to implement these plans as soon as practicable through local initiatives and collaborations that invest in and advance resilient infrastructure and natural resources, and local hazard mitigation. The list presented reflects a number of refinements and additions derived from the exchange between community leaders and subject matter experts (SMEs) during the course of the dialogue.

## General

1) Is there a rational sequence of potential resilience building actions that Mt. Shasta could pursue? What obstacles (physical and political) must be addressed before implementation of priorities can happen?

2) What would be a substantive, priority project with multiple co-benefits that the city could tackle immediately to enhance resilience, unite multiple interest groups in the community, and build momentum for future efforts?

## Enhancing Community Safety and Resilience: Infrastructure

3) What is the appropriate role of infrastructure and technology (versus policy) in enhancing resilience in Mt. Shasta? How can infrastructure and technology address known climate risks while enhancing sustainability and economic growth?

4) What are local projections for wildfire risk, temperature and precipitation changes? How can vulnerable infrastructure and services be made more resilient to these stresses?

5) What approaches (smart technologies, materials, etc.) should the city adopt to enhance the reliability and longevity of infrastructure investments? What state-of-the-art design standards should be considered?

6) What are representative or informative case studies of efforts to retrofit existing infrastructure and buildings with more resilient designs that the city can or should emulate?

## Enhancing Community Safety and Resilience: Capacity

7) What state, federal and nongovernmental opportunities exist to provide additional capacity/manpower for city resilience programs and initiatives?

8) What approaches could Mt. Shasta adapt to streamline and bring efficiency to efforts to prepare for and manage the burden and uncertainty of rising temperatures, increased risk of wildfire, and precipitation extremes? What are methods, case studies and examples from similar towns that Mt. Shasta might consider?

9) What climate resilience initiatives could be adopted by the city within the context of “basic services” (e.g. wildfire risk prevention)? Which options are most attainable?

10) What are best practices for/ examples of successful integration of climate adaptation into hazard mitigation, general plans and local ordinances?

11) What mechanisms, support or incentives can the city/region offer to private land owners to increase conservation practices and easements? Are there frameworks for public input and forums to support private landowners and document strategies that work?

## Enhancing Community Safety and Resilience: Financing

12) What frameworks for financing resilience investments have been applied in similar communities?

13) What funding sources (internal or external) could Mt. Shasta leverage for climate adaptation activities?

### Engagement and Collaboration

14) What are effective strategies for engaging the private sector in resilience building?

15) Where are opportunities to connect or collaborate with universities for data collection and local climate resilience studies? How can Mt. Shasta pull in trusted scientific expertise and resources?

16) How can regional collaboration be leveraged to build regional resilience? Are there ways to engage with surrounding communities to enhance resilience without specifically referencing climate change?

17) What are good strategies for communicating the economic benefit and community protections that come with climate resilience (e.g., public safety, mitigating fire hazard and local self-determination)? Are there numbers that can be referenced?

18) Given the strong Native American cultural heritage and spirituality associated with the region, what might be opportunities for the city to collaborate with Native American organizations to preserve that character while enhancing environmental stewardship through that lens? Where are opportunities for Mt. Shasta to invite the perspective of tribes in the region?

19) Among which interest groups must trust and collaboration be built? How could the community approach identifying synergies between them?

### Ecosystem Services Valuation

20) What methods or models should Mt. Shasta consider to pursue ecosystem services valuation as a mechanism to enhance protection of natural resources (primarily water) and maintain ecosystem function?

21) Who are the trusted experts on developing ecosystem service metrics?

22) Are there examples of ecosystem services valuation being done successfully in communities like Mt. Shasta?

## Dialogue Highlights and Resources

Addressing climate change and enhancing climate resilience is a large and complex task that will manifest with a variety of actions to address impacts across multiple sectors. Prioritizing and developing focal points for action is essential, and can provide a roadmap for the pursuit of actionable goals that foster stakeholder collaboration. It is important to identify top priorities and break them down into small doable steps.

Key focus areas identified[1] that present the greatest opportunity or need to make progress on climate adaptation and resilience in Mt. Shasta include:

- Plan Updates.
    - Mt. Shasta is in the process of updating their Hazard Mitigation Plan to meet FEMA standards. The community is also due to update storm-water and drainage

[1] *Although it was not explored in detail as part of the Resilience Dialogues process, the inclusion of alternative energy planning was identified as an additional focus area. The presence of Wholesale Solar, Inc. represents an opportunity for the city to engage proactively in this space. Look for funding mechanisms and opportunities to build a relationship with this company to help the city lower greenhouse gas emissions and promote the local green industry.*

plans, and indicated a desire to integrate resilience throughout the city's General plan.

- Green Space and Green Infrastructure.
- Community Education and Engagement.
- Natural Resources (Forests and Water)

These key focus areas are discussed in the following sections. They highlight key points and information shared during the course of the Mt. Shasta Resilience Dialogues process.

### Community Needs and Potential Climate Impacts

- Community leaders in Mt. Shasta are striving to make climate resilience a lens through which City practices and policies are developed and evaluated. To support this effort, they need to know where to find appropriate data, information and training to facilitate efficient and appropriate actions and expenditures. High-impact, low-cost opportunities are critical to enhance local resilience without stressing limited city capacity and resources.
- To the extent possible, climate resilience should be integrated within existing initiatives focused on providing basic community services. Given limited city staff and resources, approaching resilience from a community-scale systems approach will be essential for turning interest into action.
- A key vulnerability is the potential for interruptions to Interstate-5, the primary road by which the community is accessed.
- Long-term residents of the community have observed fairly drastic short-term weather changes, but cyclical patterns of heavy vs. little precipitation on a decadal scale, with more extremes in recent years and a general warming trend.
- Climate extremes (e.g. flooding, drought, wildfire, extreme weather) may affect the local economy via interruptions to outdoor recreation and natural resource extraction.
- Enhanced fire risk is likely to affect tourism revenue and long-term capital investments like housing and business development. This risk may coincide with changes in vegetation, and may be enhanced or mitigated by the presence of different plant communities (e.g. drought-tolerant vegetation).
- More frequent and extreme flooding and runoff events due to rapid snowmelt, glacial melt or heavy rainfall is increasingly likely, and can impact transportation and cause extensive damage to local infrastructure. Repair costs and downtime could be extensive. The cumulative impacts of nuisance flooding from these events could be significant.

### Planning for Resilience

Integrating climate change into city plans (e.g. General Plan, Hazard Mitigation Plan) is an easy, low-to-no cost opportunity for Mt. Shasta to set the stage for achieving longer-term resilience objectives. As the city updates relevant plans, resilience should be made an integral part of meeting stated objectives. For example, in approaching the City's 2020 Vision the community could: examine the stated goals; reflect on what might be done differently in light of specific climate impacts; then alter or change action priorities

based on this analysis. Success is most likely when resilience planning is linked directly to on-the-ground actions that are responses to specific threats (e.g. fire-adapted plants or drought mitigation).

When updating these plans to incorporate resilience, consider looking at combinations of events and associated vulnerabilities (e.g. a drought followed by a flood, followed by a heat wave). Plan for hazards with potential magnitudes beyond the usual and pursue actions which increase the overall responsiveness of the community to change.

A key need and goal identified by community leaders is to expand the scope of resilience thinking in the city to include zoning, development, technology and infrastructure management, including improvements, alternative energy programs, and green space dedication and development. Implementation of these initiatives may come at a high price, but planning now will set the stage for future action. The city is well positioned to move forward with such initiatives in terms of will and timing.

**SME Suggestions:**

- The Capital Improvement Plan (CIP) represents a low-cost opportunity to begin mainstreaming climate thinking into city government operations. Consider creating an evaluation process to judge which projects make it into the CIP and associate budget, and which don't. One or more criteria can be climate-related, e.g. "Does this project reduce key greenhouse gas emissions?" or "Does it reduce a key vulnerability (wildfire risk, heat, flooding, etc.)?"
- Include climate-related or climate-focused stakeholders included in the planning process.
- Openly and actively discuss climate change during public discussions (to the extent it is appropriate and done in a contextually relevant way).
- Including regional climate-related entities in the planning process to help lay the foundation for regional coordination.
- Facilitate co-leadership in plan development between emergency managers and planners.
- Create a plan to integrate new climate information, as it is developed, into plan and strategies.
- Include a discussion of how climate change could affect each hazard in the community.
- Consider climate change as a stand-alone hazard.
- Factor climate change into probability calculations for future hazards.
- Consider structures and assets likely to be vulnerable in future years (e.g. not just those within a static 100-year floodplain).
- Design goals and strategies with future climate change in mind (not just historical occurrences of disasters).
- Integrate strategies that are specifically designed to be viable in a climate-altered future.
- Include climate change-related criteria in the evaluation of proposed strategies (e.g., greenhouse gas reduction potential and adaptation value).

**Resources:**

- California Adaptation Planning Guide (Local and Regional Actions and Projects, California Natural Resources Agency)
- Climate Adaptation Gap Assessment (from Model Forest Policy Program). Engagement starts by completing a survey, then working with the Program to identify where opportunities exist to easily integrate climate change into city planning. Missy Stults is working with a small town in Michigan which is considering using the resource and can provide more detail.
- Smart Growth Fixes for Climate Adaptation and Resilience (Environmental Protection Agency Office of Sustainable Communities) presents overall and hazard-specific strategies for incorporating resilience into land use and building codes based on strategies that require modest adjustment, major modifications and wholesale change. Consider when thinking through the types of actions that are feasible in the near- and longer-term.
- Quick Starts in Small and Rural Communities (BC Climate Action Toolkit, Canada) is a toolkit with specific sections dedicated to issues like transportation and land use. It has a heavy focus on mitigation, but many strategies are adaptation-relevant.
- The Arkstorm scenario simulation is a useful planning response and recovery actions for extreme events.
- Plan-specific Resources:
    - Hazard Mitigation Plan
        - Integrating Climate Change into Hazard Mitigation Planning: Opportunities,
        - Constraints, and Real-World Examples (Missy Stults): Analysis looking at the different ways a handful of municipalities integrated climate change into hazards planning from including a generic description of how hazards might chance (i.e., become more frequent, more intense, and have shorter return intervals) all the way to analyzing the changes to frequency and intensity for each hazard because of climate change and, as such, selecting actions for inclusion in the local hazard mitigation plan that are climate-smart.
        - Opportunities for embedding climate change into hazard plans (Missy Stults): A table identifying opportunities to integrate climate change into material required by FEMA in each element of a hazard mitigation plan.
        - City of Baltimore Hazard Mitigation Plan: A joint hazard mitigation and climate adaptation plan that was developed in close consultation with FEMA. It is considered one of the most comprehensive attempts to marry the two.
        - Draft guidelines from Office of Planning and Research for implementation
        - Contact staff at Office of Emergency Services (Victoria La Mar-Haas) to discuss guidance for local hazard mitigation plans

        - Draft General Plan Guidelines for Safety Element (California SB379) calls on local jurisdictions to integrate climate adaptation into local hazard mitigation plans and safety elements.
        - Examples: San Diego and Monterey County Local Hazard Mitigation Plan updates incorporate climate.

    - General Plan
        - Examples of integration of climate change throughout General Plan elements can be found in Sonoma, San Luis Obispo, Alameda County, Yolo County and Sacramento County.

**Potential Next Steps:**

Hold a workshop or training session to bring all city staff and decision makers up-to-speed and on the same page for thinking about climate change impacts and resilience for development and implementation of updated city plans. Resources to consider:

- Guidance on workshops and outreach are included in the California Adaptation Planning Guide (referenced above).
- Thriving Earth Exchange held a workshop in Boulder, CO to help city staff develop a better understanding of climate impacts and broaden thinking about where climate risks and opportunities lie. Contact Melissa Goodwin (Thriving Earth Exchange) for more information.
- *Future Shocks and City Resilience* was a game played in Tempe, AZ which brought together leaders of city departments and challenged them to adopt systems thinking in their operations to enhance local resilience and sustainability. Contact Lauren Keeler (Arizona State University) or Braden Kay (Sustainability Manager, Tempe, AZ) for more information.
    - Paper (Currently undergoing peer review) summarizing the game and its results.
    - Executive summary of the partnership on sustainability and resilience between Arizona State University and the City of Tempe. This could be a useful model for a similar collaboration between Mt. Shasta and a local university.
- Adapting to Climate Change: Managing Federal Lands in a Changing Environment Webinar Series (Southern Oregon Forest Restoration Collaborative) is a natural resources-focused resource which may be valuable.

## Community Engagement & Communication

Planning for resilience creates a prime opportunity to educate and engage with the public about the potential for changing conditions, and the actions proposed. Local support could be enhanced if the city can demonstrate that residents' interests are in mind, and that the city is preparing for events based on the best available science and projections. A community social network analysis to map network allies, community stakeholders, and involved parties, along with their respective interests can spark messaging and engagement ideas and serve as a baseline for the social, human and political elements at play in Mt. Shasta. Articulating agreements and divergent issues among stakeholders can help identify trusted voices and unlikely common ties. Meanwhile, building trust between these groups may make it easier to tackle difficult issues. While this trust exists in Mt. Shasta, the need for productive communication to drive this conversation can't be overemphasized.

The large amount of energy in the community for sustainability natural resources conservation is a significant asset for Mt. Shasta. However, community leaders indicated that Mt. Shasta is not traditionally a community of activists. Look for opportunities to implement actions that explicitly engage and leverage the actions of homeowners and citizens (e.g. citizen committees, neighborhood awards, citizen monitoring of high-risk areas, drone use).

A useful way to open and ground a conversation is to invite participants to describe lived experiences. This can help develop a baseline for understanding and visualizing how climate has changed locally and promote responsiveness to conversations about how it could change in the future – and facilitate the development of a common language of resilience. Framing conversations around public safety, hazard mitigation and local self-determination can help bring people to the table.

**SME Suggestions:**

- Simulations and games can be useful for engaging broader communities on climate risks and response. Goals for such activities include generating new ways of thinking about risk and responses, bringing together a diverse mix of sectors and interests, making climate risks tangible and directly linked to public service/environmental/infrastructure issues, and paving the way for new partnerships and collaborations. Examples:
    - Future Shocks and City Resilience (Tempe, AZ; See section above)
    - Game of Floods (Marin County, CA) is an interactive game that communities can play to address flooding and explore what kinds of strategies a fictional city can use to prepare.
- Consider opportunities to bring together local champions, apply their talents, and enhance the city's capacity to assess and implement programs. For example, Whitefish, Montana, launched a volunteer Climate Action Plan Committee to serve as an advisory group to the city on their energy and water consumption work.
- Keep discussion focused on local impacts to maximize engagement.
- Link climate engagement to concrete impacts and make it project-based. Get a diverse group of people in the room and manage the dialogue, linking it to actions and things already on people's plates.

- If you rely on data for evidence, good data visualization is critical. Show trends for concrete resources (stream gauges, snowpack, wildfire) and let the discussion emerge naturally around how to best manage those impacts.
- Frame resilience in broader terms beyond climate impacts to develop interventions. For example, ask "What happens if our fire season becomes 12 months in length? Or "What is the worst flood we could get in the next 50 years based on indicators?"
- Start with things people care about (health, safety, jobs, etc.) and relate climate change to these priorities. To frame issues in this way, identify:
    - Priority economic sectors (e.g., tourism, recreation)
    - The inputs and conditions needed for success in the sector (e.g., snow for skiing and snowboarding; road access to hiking, mountain biking, mushroom hunting areas; effective natural resource management)
    - The non-climate (e.g., under-valuing of natural resources) and climate stressors (e.g., changing snowfall patterns, floods) that currently adversely affect these inputs and conditions.

**Resource:**

- The Sierra Climate Adaptation and Mitigation Partnership (CAMP) is one of five regional climate change collaboratives in California. Their website features funding opportunities specifically focused on environmental education.

## Collaborations

Tied to community engagement and communication is the establishment and cultivation of strong collaborations among regional stakeholders. To build this network, establish small successes with existing partners and build upon them to generate word of mouth and further action, engaging and incorporating additional allies in the process.

**SME Suggestions:**

- The National Forest Service has a large presence in Mt. Shasta. They have a number of highly educated employees that live and work in and around the City. The service tends to stay in its own silo from the City, but some efforts to alleviate that have occurred in the last year. There is currently little to no data sharing between the two entities.
- Common collaborators include: Regional Watershed groups, CalFire, National Forest Service, Governor's Office of Planning and Research, Siskiyou Land Trust, California Office of Emergency services, Federal Emergency Management Agency, Chamber of Commerce, Siskiyou County Economic Development Council, and Regional Water Quality Board.
- The Regional Integrated Sciences and Assessments (RISAs) program supports research teams that help expand and build the nation's capacity to prepare for and adapt to climate variability and change. See the California-Nevada Climate Applications Program.

- Higher education institutions
    - Look to planning schools and policy programs (e.g. California State University, Chico or University of California, Davis).
    - Derek Kauneckis (Ohio University) could partner with Mt. Shasta for a Fall Climate Resiliency course to research further what other small communities are doing in this space.

**Potential Next Step:**

- Identify and engage with trusted collaborators.

## Infrastructure and Financing

Community leaders identified green space and green infrastructure as key opportunities to make progress on climate adaptation and resilience planning. Notably, city stormwater and drainage plans are due for updates near-term, and the city intends to include shovel-ready projects to integrate natural drainage and stormwater retention into the cityscape.

**SME Suggestions:**

- Project return on investment (ROI) and community buy-in can be higher for new development when it addresses risk mitigation, sustainability and economic growth. SMEs advised considering infrastructure development with multiple co-benefits. For example, investments in urban greening, cool paging and cool roofs can limit heat and provide aesthetic value. Especially viable projects may address both risk reduction and economic benefits directly (e.g. jobs) or indirectly (e.g. lower wildfire fighting costs and avoided losses). Examples:
    - Placer County, California, opened a woody biomass plant which reduced fire risk, lessened dependence on fossil fuels, and created jobs.
    - Grand Rapids, Michigan, requires that any work or upgrades to roads must integrate green infrastructure for storm-water management.
- When exploring infrastructure investments in Mt. Shasta, ask whether:
    - Considering the city's natural capital and the nature-based resilience strategies that are available, what is the role of infrastructure and technology?
    - Do planned investments address identified climate risks and community needs? Do they leverage (and sustain) the existing natural capital?
- Peer-to-peer learning opportunities can help support, inspire and connect to innovative strategies and opportunities.
- Engaging with the private sector to finance and develop projects can enhance the reach of resilience activities.

**Resources:**

- National Complete Streets Coalition (Smart Growth America) provides technical assistance and resources
- The Sierra Climate Adaptation and Mitigation Partnership (CAMP) is one of five regional climate change collaboratives in California. Their website features a variety of funding opportunities.
    - CAMP is situated within the Sierra Business Council and may have relevant insights for engaging the private sector.
- Funding Assistance Options (California State Water Resources Control Board) helps identify relevant state funding sources by project phase and project type.
- The U.S. Climate Resilience Toolkit has a section on potential funding resources.

**Potential Next Steps:**

- Consider attending regional or national professional events when possible to learn about smallscale community activities.
    - American Planning Association California Chapter
    - Strong Towns is a media organization which seeks to help cities, towns and neighborhoods become financially strong and resilient.
    - National Adaptation Forum

### Resilience Opportunities in Natural Resources

To advance resilience priorities in natural resources, build upon linkages that connect economic dependencies to the most apparent direct and indirect threats (e.g. fire and flood risks):

### Wildfire and Forest Management

A significant resilience gap in Mt. Shasta and the surrounding areas is a lack of synergy in fire management techniques among various landowners. Advancing climate-resilient forest management and wildfire mitigation strategies was identified as a priority by community leaders which could support regional coalition-building around natural resources and public safety.

There is a high level of political will from private landowners and foresters to preserve natural resources and manage forests and land with a long-term frame of mind. Sustainable conservation strategies are being applied on their properties, but challenges persist in funding, expertise and permitting for the sustained management of natural resources by private land holders. Needs include examples of successful private sustainable land management, collecting and documenting strategies that work, and frameworks for public input and private landowner forums.

Actions taken to reduce wildfire risks are often climate adaptive in drier forests.

**SME Suggestions:**

- In addition to reducing the likelihood that fire will reach buildings, focus efforts on having them survive fire passage (e.g. through building materials and design, and regulating the proximity of adjacent buildings). Such policies could be incorporated into city zoning and requirements during remodels.
    - For example, Chula Vista, CA set zoning requirements to address fire risk from materials and siting.
- Draw on traditional ecological knowledge concerning past forest structure and species mixes, as well as key understory components that will also support wildlife and wild pollinators.
- Reducing stand densities can help reduce crown fire risks, risks to homes and infrastructure, risk of insect and disease outbreak, and increase drought tolerance.
- Some form of commercial removal may be necessary to facilitate continuous wildfire hazard reduction. Look for opportunities to leverage this activity in a sustainable way.
- Initially, prioritize identifying and working with those who are already predisposed toward conservation activities, i.e. those enjoying co-benefits from standing forest (birding, hunters, timber harvesting, visual/sound buffers).

**Resources:**

- A cohesive forest strategy that ties to the National Fire Plan was recently finalized by the Southwest Oregon Forest Restoration Collaborative as an effort to develop fire plans that engage various stakeholders, provide grants and develop priorities. This could serve as a model for a similar undertaking in the Mt. Shasta region, and represents an opportunity to collaborate with the Forest Service. For more information, contact Kerry Metlen or Darren Borgias (The Nature Conservancy).
- Ashland, Oregon, has a fully forested watershed and has worked with local groups to educate the public about the risk of wildfire. Collaborations from this effort have led to federal funding for treatment, as well as greater public support. Consider reaching out to colleagues in this community for insights on their process.
- Era of Megafires Presentation (Forest Service Pacific Northwest Research Station) is a publicity and educational tool which can be effective for starting a local discussion.
- The Illinois Valley Timber Assessment can help inform forest planning, generate recommendations to land managers, strengthen public support for forest restoration, and improve project efficiency and effectiveness. This analysis was funded by an Oregon Energy Truest to sustain a local mill. (Terry Fairbanks can answer questions.)
- Pacific Forest Trust works on sustainable forest management practices with private companies.
- Lomakatsi Restoration Project develops and implements forest and watershed restoration projects in northern California. One current project is focused on treating plantations in the Cascade Siskiyou Monument. Contact them for a conversation about how agencies partner with NGOs and educational institutions to generate capacity for building local ecological and restoration workforces.

- EQIP (Natural Resources Conservation Service) helps fund small forest owner efforts to plan and implement sustainable conservation practices. The program is aimed at nonindustrial private forestlands and provides funding for both planning and implementing conservation practices, including reducing fire risks.
- Case Study: Wildfire mitigation actions taken by Flagstaff, Arizona
- Data Basin is a resource for how changing climate might affect local forests. Note: The website is dense, but regular webinars are provided on how to navigate and use the site. Relevant projects include:
    - AdaptWest - A Climate Adaptation Conservation Planning Database for Western North America (the Watershed Climate Data Explorer
    - California Water Planning Information Exchange
    - Conservation Biology Institute Climate Center
- Natural Resources Canada has the most comprehensive site for information on the effect of climate change on individual species
- College of the Siskiyous work-study program
- Incentive/grant programs include EQIP (see above), CalFire, California Office of Emergency Services, and FEMA
- USDA Natural Resources Conservation Service helps small private landowners manage forest resources
- The Nature Conservancy is a great partner for private conservation efforts.
- Comprehensive Fuels Treatment Practices Guide for Mixed Conifer Forests: California, Central and Southern Rockies, and the Southwest: covers the Sierra Nevadas, but the Southern Cascades are likely very similar.
- Synthesis of Knowledge from Woody Biomass Removal Case Studies: See section on the Pacific West Region (page 9)
- CalFire and the Forest Service can be a resource for keeping residents informed during prescribed burning operations.

**Potential Next Steps:**

- Connect and collaborate with other towns in Siskiyou County to coordinate fire prevention activities. Aim to develop some consensus around what that means in terms of types of treatments and priority areas, and incorporate actions by individual homeowners in a larger plan.
- Collaborate with local groups to educate the public about wildfire risk and facilitate honest conversations, presentations, field trips with strategic stakeholders and the public.
- Promote public acceptance of the actions needed to address wildfire risk. Include discussion of and preparation for impacts from smoke from prescribed burns.
- Consider undertaking a forest asset inventory to highlight areas most worth conserving for smarter resource allocation and to identify the most appropriate policy instruments. To

undertake a less funding-intensive survey, pull in local knowledge via a one-day workshop to identify 1) critical natural resources, 2) those you don't want to lose, and 3) those that would hurt to lose - but you could live without.

    - Common policy instruments include forest conservation tax benefits (especially in the Eastern/Midwestern states), conservation easements and voluntary deed restrictions.

- The establishment of a "wood bank" or "forest fuels to firewood" project was identified as a project which could be accomplished with existing city capacity. Co-benefits could include job creation, meeting local needs for firewood, and minimizing wildfire risk.

## Water Resources

Community leaders described Mt. Shasta as a “land of plenty” in terms of water resources. A critical need however, is to enhance knowledge and appreciation for the need to actively conserve and protect water resources in the community.

**SME Suggestions:**

- Success generated by household involvement will be limited unless companies investing in local water resources are brought to the table to collaborate on efforts. A multi-stakeholder conversation about what water resilience looks like in Mt. Shasta (economically, aesthetically, ethically, ecosystem-centric) will be a valuable start to this conversation.
- Opportunities for community education and engagement regarding water conservation may include:
    - Including water saving tips on people's water bills;
    - Having a rating on the water bill that tells people how much water they use compared to their neighbors;
    - Hosting a neighborhood competition where those who reduce water consumption the most in a sustained way are rewarded (e.g. community ceremony or yard sign);
    - Launching a reality TV/radio show with a local television or radio station to showcase competition to reduce water (or energy) use. See "Energy Smackdown" in Medford, MA;
    - Challenging a sister city to a water conservation competition;
    - Competing in the National League of Cities Water Conservation challenge;
    - Having a city-wide sign on pledge listing 10-12 things for each resident to do over the course of a year. (E.g. water conservation, home insulation, etc.) Each month, organize a campaign that focuses on one of those 10-12 things. Provide pledge stickers to showcase participation. Missy Stults can provide sample pledges.
- A community-climate science engagement workshop with scientists studying regional hydrological systems may be useful for identifying opportunities to advance this issue.

- Consider enlisting a volunteer(s) to collect freely available data and analyze it to discover trends in snowpack and precipitation. Target at least 30 years of data to meaningfully capture and mitigate interannual variability. Looking at the trends and the pattern of departure from an average can show how these elements are changing over time. Such trends help understand not only what is happening to snowpack and surface water availability but why they are changing.

**Resources:**

- For further reading on what works best in reporting vs. messaging, consider:
  - "Promoting conservation by managing residential outdoor watering evidence from the Truckee Meadows area in Northern Nevada" describes what works best in reporting vs. messaging.
  - The use of simulations is an excellent way to bring attention to an issue, though they require funding. Applicable models include ArkStorm, Drought Tournaments, and Alternative Futures.
- Sno-tel network provides snowpack data. While it doesn't have a station in Mt. Shasta, stations nearby in southern Oregon may suffice.
- WestMap has data for precipitation, minimum temperature, maximum temperature and average temperature by county. Use data for Siskiyou County instead of the hydrological unit (Upper Sacramento Basin).
- Staff at the Desert Research Institute (DRI), part of the Western Regional Climate Center can be a resource for understanding climate observations.
- Derek Kauneckis (Ohio University) and/or Thriving Earth Exchange could support development/implementation of community-science engagement workshops or programing.

**Potential Next Steps:**

- Confirm and assess city knowledge of local hydrological and meteorological projections over relevant timescales; engage with partners or volunteers to fill any gaps in knowledge.
- Consult with appropriate stakeholders to explore and develop a public engagement activity or program to meet water education and conservation goals.
- Look for and pursue opportunities to highlight and raise awareness of water conservation in city/utility information and products.

## Payment for Ecosystem Services (PES)

There was some interest in exploring PES as a way to reframe Mt. Shasta's ecological assets and engage new sectors to advance a conversation about demonstrating the value of Mt. Shasta's natural resources. Currently, they are viewed largely as exportable commodities. While it is a developing science, PES offers a model for adding explicit economic value to environmental public goods. PES can be useful for framing

the relative value of prevention vs. post-event response. Note, however, that it is important to not fully "monetize" the environment, but to retain valuation of intrinsic value.

**SME Suggestions:**

- Exploring climate linkages can help identify what should get valued using PES in order to justify certain interventions and adaptation actions.
- PES be used for everything from watershed services, carbon markets, to public health benefits depending on the service of interest. The most successful valuation schemes, effectively "bundle" benefits to get the highest value for the services they want to protect (i.e., water quality, biodiversity richness, flood protection, etc.).

**Resources**:

- GecoServ - Gulf of Mexico Ecosystem Services Valuation Database
- Proposed Lone Star Coastal National Recreation Area
    - 2013 Presentation by Jim Blackburn (Blackburn & Carter)

**Potential Next Steps**

- Engage in a series conversations with individuals knowledgeable in PES to explore the potential and applicability of PES for achieving local priorities. Consider scientists, economists, and groups that have launched successful PES programs.
- Pending results of those conservations, engage with partners to explore development of a pilot PES initiative in Mt. Shasta.

## Implementation

Despite staff and resource limitations on the municipal level, Mt. Shasta's place-based pride, engaged community and resident industries might offer a unique blend of resources and capacity to fill in gaps for implementation. Dialogue participants noted that climate implementation work fares best when tied to risk reduction or infrastructure planning; tie strategic development to people's sense of personal and community protection.

**SME Suggestions:**

- Many measures can be both cost-saving and climate adaptive, e.g. an earlier effort to convert streetlights to LED lights. Look to cast other initiatives in the same light where possible.
- The most defensible decisions and investments will be based on clear historical data and robust projections. Resources:

- Cal-Adapt is a resource for data produced by California's scientific and research community. Their website will soon have high-resolution, verified and scenario-guided climate projection data for the entire state, covering 6km resolution for fire, drought, snowpack and extreme heat.
- The U.S. Climate Resilience Toolkit has good data visualizations for Siskiyou County regarding temperature, precipitation and heating/cooling degree days.

**Resources:**

- CivicSpark is an AmeriCorps program dedicated to building capacity for local governments to address climate change and water management issues in California.
- The Thriving Earth Exchange can identify and support city engagement with a volunteer Earth and space scientist to advance a city priority.

## General Resources

The following are general resources about climate change resilience planning that were referenced during the Mt. Shasta Community Dialogue. Resources listed here span multiple key focus areas and may be cited elsewhere above in a specialized context.

- Thriving Earth Exchange (TEX) can connect Mt. Shasta with a volunteer Earth or space scientist to launch a project tailored to address a local priority.
- Community & Regional Resilience Institute (CARRI)
- Resilient Cities Climate Leadership Academy (Institute for Sustainable Communities) is an opportunity for multiple individuals from a single municipality to get together with sister municipalities from around the nation to explore issues of mutual interest.
- U.S. Climate Resilience Toolkit has case studies, tools, and resources.
- Climate Adaptation: The state of practice in U.S. communities (Abt Associates/ Kresge Foundation) features in-depth actions that municipalities are taking to address climate change
- Climate Adaptation Knowledge Exchange (CAKE) by EcoAdapt
- American Society of Adaptation Professionals
- The National Adaptation Forum is a great event to see what others are doing and network. Held every two years (next in 2019) and provides generous travel funds.

## Next Steps for Consideration

The resources and insights throughout this report can serve as the foundation for the planning and implementation of resilience activities in Mt. Shasta moving forward. It is meant to be a tool and resource for wider community and partner engagement in Mt. Shasta. It is not, however, a comprehensive resilience assessment. Further engagement of key community stakeholders will be important to share the

outcomes of the dialogues and determine which priorities and next steps are broadly supported. Potential next steps that were explicitly identified within the dialogue are described in detail in the sections above.

The additional list of next steps below was distilled from the dialogue for the consideration of community leaders as they proceed with their resilience building efforts:

1. Hold an interactive workshop to share information about climate change impacts and resilience with city staff and decision makers, with a focus on how to integrate climate resilience considerations into city plan updates and implementation.
2. Explore resources, tools and best practices that can help broaden the integration of resilience into city plans to promote co-benefits from the provision of basic services, and longer-term resilience frameworks.
3. Develop and include shovel-ready projects in city plans that integrate green space and green infrastructure. Seek financing opportunities to support expanded work.
4. Convene a multi-stakeholder conversation to establish a resilience vision for Mt. Shasta and explore opportunities to incorporate a resilience lens into community education and engagement around public safety, wildfire prevention, and water conservation.
5. Focus on leveraging local interest in environmental protection and build a multi-stakeholder coalition of volunteers to advise, collaborate, and engage in local resilience initiatives.
6. Seek to connect and engage with trusted local, regional and national collaborators to enhance capacity, share lessons learned, and advance resilience priorities.
7. Work with the Governor's Office of Planning and Research to develop an approach to incorporating climate into your local plans. *(Note: Follow-Up Meeting has been scheduled for Juy 21 in Sacramento, CA.)*

# The Spirit of Mt. Shasta Region

## Building Resilience | Next Steps

## Summary

The following document is a summary of technical assistance provided to the City of Mt. Shasta by the U.S. Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), and the Metropolitan Transportation Commission/Association of Bay Area Governments (MTC/ABAG). The assistance included bringing experts together during a threeday workshop to help the City of Mt. Shasta build resilience to natural disasters both locally and regionally. In addition, the Mt. Shasta workshop provided valuable feedback into the development of a regional resilience workbook and toolkit that will be used by other regions and communities across California and the rest of the nation.

Mt. Shasta applied and received technical assistance from EPA, FEMA, and ABAG/MTC to conduct a regional workshop that would help the city and other partners in the South Siskiyou County area imbed resilience strategies in the local General Plan update, Local Hazard Mitigation Plan, and other planning efforts. In addition, the City of Mt. Shasta used the assistance and workshop to build a robust network of partners around issues of resilience, as well as to kick start outreach to the community and surrounding areas. As of January 2017, the State of California requires jurisdictions to update the next version of their General Plan Safety Element (or a new Local Hazard Mitigation Plan (LHMP)) to include climate adaptation and resilience goals, strategies, and implementation steps (SB 379). Further, state law requires jurisdictions to consider equity as a primary principle in the development of these plans (SB 1000). The City of Mt. Shasta is beginning a two- to three- year process to update their General Plan and will complete an update of their LHMP in May of 2018.

The three-day workshop was held March 7th to 9th, 2018 in Mt. Shasta. The hosts for the workshop included EPA, FEMA, MTC/ABAG, and the City of Mt. Shasta Planning Department. The workshop brought community leaders, residents, and key stakeholders from across the region together to discuss the importance of planning for disaster resilience, with a focus on wildfire hazards. The City of Mt. Shasta will use information gathered at the workshop to update the Safety Element of the city's General Plan, update the LHMP, as well as to continue ongoing partnerships and conversations around specific actions the city and regional partners can take to protect the region from disaster impacts.

This Next Steps Memo provides an overview of the workshop findings and the specific strategies developed during the workshop, identifies the key barriers and challenges to implementing those strategies, and summarizes the priority next steps the city might take.

## Primary Takeaways from the Workshop

The workshop included an evening public workshop, a daylong intensive workshop with regional experts, and a wrap up meeting with decision-makers in Mt. Shasta. The first two segments of the workshop were open to the public, but specific interest groups were invited to participate, including Siskiyou County representatives; neighboring cities of McCloud, Dunsmuir, and Weed; California Highway Patrol (CHP); Siskiyou County Sherriff; Great Northern Services; City of Mt. Shasta Planning Commission; United States Forest Service; McCloud Service District; California Department of Forestry and Fire Protection (CAL FIRE); Pacific Power; and California Governor's Office of Emergency Services (CALOES ).

Several major themes and takeaways were gathered through the public meeting and focus groups from the three-day workshop:

- Resilience is more than bouncing back; it is an opportunity to **transcend a disaster** and create a stronger community and economy.
- The **rate of change** is a substantial challenge. Many of the hazards are not new, but they are occurring more frequently and with more severity, including winter storms and wildfires.
- Planning efforts need to strike a **balance** between the needs and demands of the community and the economy, and between urbanized areas and rural locations.
- Need to improve **communication and collaboration** across jurisdictions is critical, especially to reduce duplication of jurisdictional and agency plans across the region.
- **Neighborhood and community engagement and communications** surrounding disaster resilience should be improved.
- There is a need to **diversify the region's economic industries** to be more resilient
    - Establish **alternative** economies beyond the timber industry and recreational tourism, which could include non-timber forest products, mushroom hunting, arts and music, and a "learning laboratory" for regional colleges and universities that highlights the uniqueness of Mt. Shasta.
    - Showcase the area as **attractive not ex-tractive**.
    - **Manage and adapt** for environmental and community benefits; manage the forest and create resilience.

## Issues & Opportunities

The Community Workshop on the first evening asked participants to identify the things in the community they love and want to protect as well as to discuss some of the major issues and barriers to building resilience to natural disasters.

### Things the Community Loves and Wants to Protect (Opportunities)

- Pure water!
- Spiritual history and attraction to the mountain, including the area's tribal, cultural, and historical foundation
- Love of the place and lifestyle is strong: clean air, forest, river and lakes, outdoor recreation, solitude, and night sky
- Natural resources
- Tourism
- Active transportation (bike and pedestrian) options could be improved
- Encourage a "learning laboratory" for research
  - Collaborate with universities to study the impacts and climate changes on the slopes of Mount Shasta
  - Could bring additional funding to the region

## Challenges and Barriers to Overcome

### Organizational

- Multiple overlapping jurisdictions in the region: local, county, state, and federal
- There is a lack of data and GIS capability in the neighboring communities
- The costs and time related to CEQA analysis is a barrier for a range of projects including resilience projects
- Long timeframe to complete the Mt. Shasta General Plan due to staffing limitations
- Need additional technical assistance to finish Mt. Shasta's planning efforts
- Overall communications between jurisdictions and with the community is inadequate
- High turnover rate for agency staff throughout the region

### Community

- Aging population
- Narrow economic markets: tourism and logging – need to diversify
- Community "stressors" that exacerbate disaster vulnerabilities
    - Food desert
    - Mental health problems
    - Domestic violence
    - Homeless and transient population
- Need to work with the Siskiyou County Public Health Division on these stressors and on disaster planning
- Outdoor marijuana growing creates additional risks and environmental impacts from fires, including mobilization of toxics into the air, water, and soil

### Physical

- Need to engage private property owners in planning and implementation of disaster resilience projects
- Limited transportation access and potential for freeway closures during natural disasters
- Propane distribution and storage adjacent to the railway creates additional vulnerabilities related to fuel access and availability during disasters
- Water system infrastructure in need of basic upgrades

## Vulnerability Assessment

On the second day of the workshop, participants conducted a mock vulnerability assessment using known community assets and specific hazards to determine the most significant challenges. Participants split into three groups that focused on different hazards and assets. Highlights from each group are included below.

**Group 1. Goal:** Preserve the natural environment
**Asset:** Wastewater plant **Hazard:** Winter storm
**Key Points:**

- The wastewater plant is beyond capacity and needs many upgrades.
- Capacity issues create local and downstream impacts to the entire community and visitors.
- The long-term solution will be to build a new wastewater treatment plant.
- Fire mitigation projects are needed to reduce the potential "fuel" nearby to reduce fires.
- The plant is on high ground with a two-day power backup.
- Residents on septic systems and wells experience no direct impacts but need to convey the importance of this issue to everyone, such as disruptions in local business services.

**Group 2. Goal:** Protect water quality
**Asset:** Drinking water **Hazard:** Wildfire
**Key Points:**

- General Issues
    - Ash fall can impact water quality
    - Water availability depleted due to fighting fire
    - Potential inability to reach the water source in the event of a disaster
    - Need to proactively create defensible space

- General need to upgrade drinking water system

- Water system is gravity fed, so power disruptions do not impact supply
    - There are broad and serious consequences if water quality is impacted by fires. Water degradation in any form would hurt Mt. Shasta's reputation and "brand" as a place with clean, untreated, mountain spring water.

**3. Goal:** Manage forest to reduce ecological damage
**Asset:** Forest **Hazard**: Wildfire
**Key Points:**

- Focus on short-term and small-scale, manageable fire mitigation projects
- Historic practices (harvesting) need updating
- Major economic impacts for everyone if forest ecology is threatened (i.e. tourism-based retail, lodging, service industry)
- Who is in charge of planning and implementing fire management projects?
    - Multiple agencies, with various approaches to management
    - There are the same vegetation management/fire mitigation requirements for owners regardless of size (i.e. 2 acres versus 500 acres)
    - Ecological services are of huge value, including for carbon sequestration, water quality, and air purification
    - Resilient forest that can withstand change over time

## Identifying Resilience Strategies

Following the risk assessment exercise, participants worked together to create strategies to address the vulnerabilities already identified. Julie Titus, a local consultant who is developing the Siskiyou County Wildfire Protection Plan, presented information about the region's fire history, which set the context for understanding the great risk this region faces from fires and the importance of creating a common fuels management strategy.

### Before, During, and After

An important takeaway from this work session is the need to consider resilience with three perspectives: before, during, and after a disaster. This frame allows planners to delineate strategies based on timing and helps the broader community understand the role of planning in addressing vulnerabilities before a disaster and thinking ahead about the aftermath of a disaster. The actual event requires a separate process that focuses on emergency response plans.

## Refined Strategy Areas

The following strategy areas are potential organizing concepts for the General Plan or Local Hazard Mitigation Plan (LHMP). These strategy areas encompass all of the assets within the community and can be discussed in terms of their potential vulnerability to various hazards, which for Mt. Shasta are most likely wildfire, winter storms, flooding, drought, and even volcano eruption. As the city develops updates to the General Plan, LHMP, or has input into other regional plans, such as the Community Wildfire Protection Plan, Ecology Center Adaptation Plan, or Integrated Regional Water Management (IRWM) Plan, these strategy areas could help reflect common goals and priority actions across these different plans and efforts.

### 1. Connected Community

Human capital is a core resource and an essential asset for the city to protect and support both now and into the future. Human capital includes residents, visitors, and city staff, and focuses primarily on planners, disaster professionals, and emergency responders.

### 2. Critical Services

There are a number of critical services that are essential to a community and need to be protected at a higher level than others, including public facilities and infrastructure that protect life, provide safe and reliable transportation and access, and provide power, water, and communications among others.

### 3. Built Environment

Buildings, housing, infrastructure, and community-serving facilities such as schools and public facilities are all critical to a thriving community. Understanding how they support the community and pinpointing the potential vulnerabilities within the built environment is essential to establishing a more resilient community.

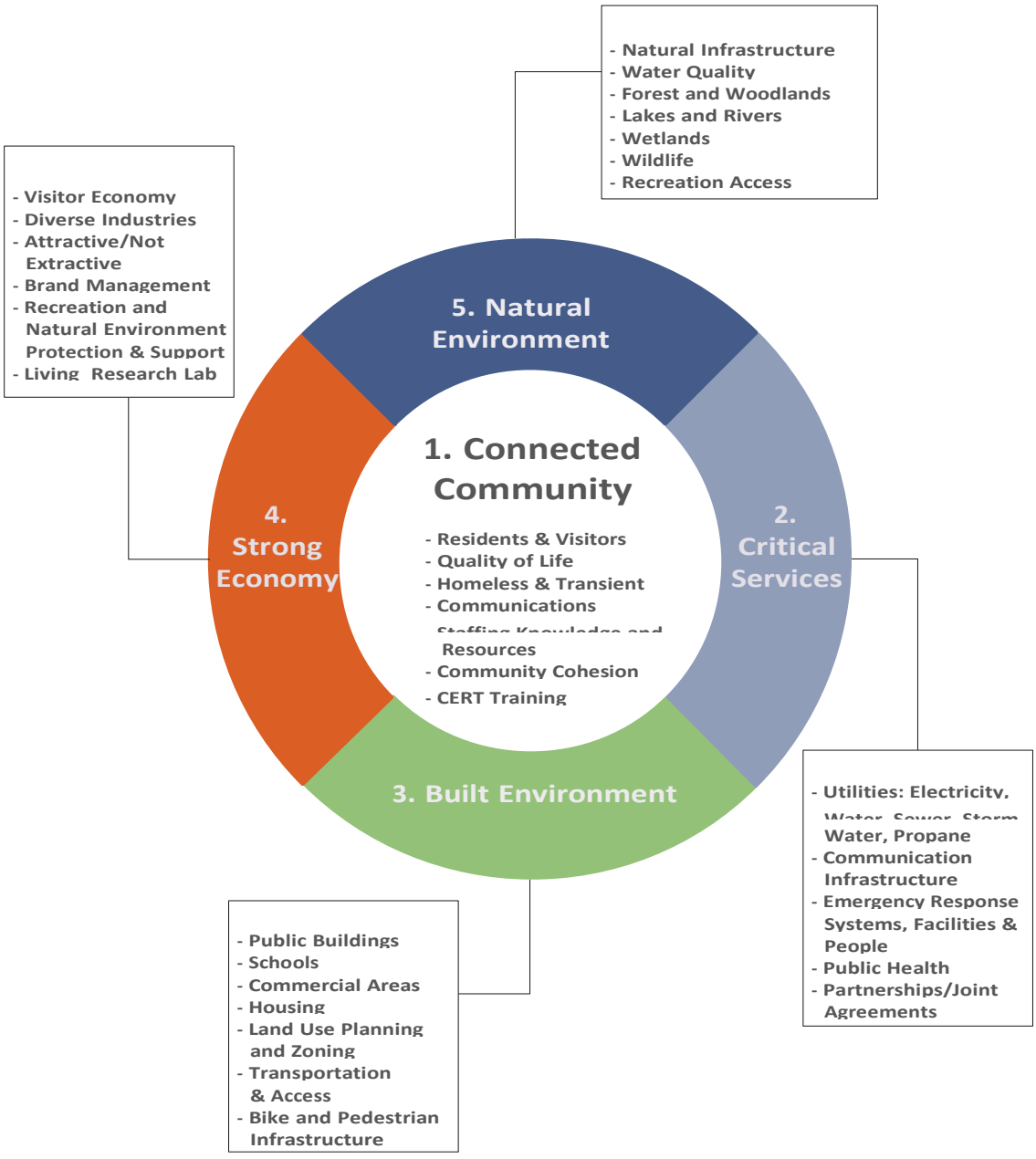
### 4. Strong Economy

The natural environment supports the region's economy in the form of visitors who are attracted by the beautiful scenery, spiritual aspects of Mt. Shasta, and a multitude of recreational opportunities. In addition, the region's extensive forests and history of logging have provided the core economy and job market for the region. The region will need to protect these natural assets as well as the supporting businesses districts both physically and in terms of potential loss of visitors after a disaster.

### 5. Natural Environment

In addition to the economic value of the environment, the natural environment is a central attraction for residents, supports spiritual life, and provides essential ecological services related to carbon sequestration, wildlife habitat, and drinking water. It is essential to balance the economic elements of the environment with these other fundamental benefits of the surrounding environment.

## Strategy Areas



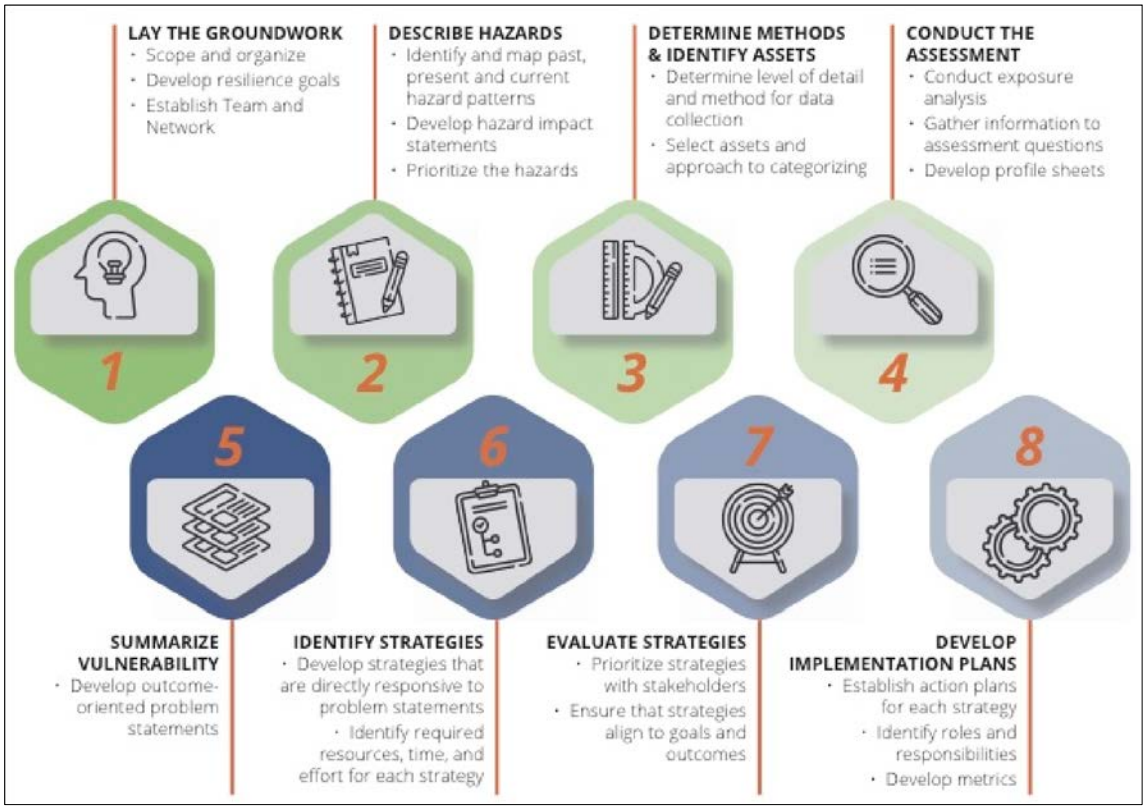

## Next Steps

Three primary next steps, which are connected but distinct, were identified during the workshop.

### 1. Complete the City's Vulnerability Assessment and Strategy Development

The first recommendation is to continue working with the region's experts to complete updates to the Mt. Shasta LHMP and General Plan. Ideally, these plan updates can offer the surrounding cities and other similar California communities a model for resilience planning and action. Specific next steps for plan updates include:

- Build on workshop information, and further refine and update priorities for wildfire hazards and develop an Action Plan to implement.
- Conduct vulnerability assessment and develop strategies for flooding and winter storms.
- Work with partners to map and identify a history of hazards to help to plan and focus resources.
- Identify data gaps and additional research and resource needs to complete detailed planning for the General Plan Safety Element and LHMP.



## 2. Expand and Solidify a Regional Network

The region will need to more effectively coordinate across jurisdictions, with state and federal agencies, and with non-governmental partners to share knowledge, capabilities, and resources to prepare for future disasters. In addition, this network can be invaluable when catalyzed during and after a disaster.

**Build Network Throughout Region**

*Dunsmuir, Weed, Mt. Shasta and McCloud*

- Board of Supervisors
- CALFire
- California Highway Patrol
- California National Guard
- Caltrans
- Chamber of Commerce
- City Police
- City Sherriff
- City Water and Sewer
- Community Resource Centers
- County Departments
- Forest Service
- Hospitals and Clinics
- Local bottling company
- Local radio
- Mount Shasta Unified School District
- Parks and Recreation Departments
- Power Company
- Railroad / Union Pacific
- Redding Red Cross
- Regional Water Act: RWAG
- Resource Conservation District
- Siskiyou County Office of Emergency Services
- Tribal communities

### Build Partnerships and Planning Alignment

- For each hazard type, determine critical partners and other planning processes in the immediate region to leverage and align. As noted in the wildfire assessment, CALFIRE and Siskiyou County are essential partners. For example, the City of Dunsmuir developed a Community Wildlife Protection Plan (CWPP) and the county is in the process of developing one as well, which can complement and enhance the city's efforts to plan for wildfires.

### Continue Community Outreach and Engagement

- Community engagement with the broader public is important to establish a better understanding of community goals and vision, as well as to help refine and hone disaster resilience priorities. In addition to workshops, the city has already planned several activities to go where the community is rather than asking them to come to planning meetings. These activities, including the following, are good opportunities to build public support:
    - Brew Coffee and Happy Hour Meetings (planned)
    - Volunteer Corps (planned)
    - Community Events
    - Farmers Markets (planned)
- Specific outreach to special interest groups and technical experts in the area is also essential to ensure that final planning products are comprehensive, well-informed, and include broad buy-in. The city could consider several additional activities for these specific stakeholders:
    - One-on-one interviews with key leaders
    - Small group meetings with special interest groups or cohorts of stakeholders,

e.g., hoteliers, or recreation providers, or school leaders.

- Online surveys designed to gather specific information and details

- Ongoing information sharing with the public and stakeholders is essential and should be done via the city's website as well as with news emails and targeted calls.
- Communication materials could be distributed via typical city channels as well as posted at local coffee shops, libraries, hotels, and other locations frequented by the community or visitors.

### Branding and Public Relations

- The city could highlight its efforts to build resilience to disasters and make Mt. Shasta a safe place to live, work, and visit. Marketing the city's efforts around resilience can bring more awareness and support for ongoing planning and project investment, as well as brings in new businesses and elevate the community's own image.

## 3. Build Internal Knowledge, Staff Capacity, and Resources

To effectively complete the first two next steps, the City of Mt. Shasta will need to identify additional resources to assist in planning and implementing for the General Plan and LHMP, including new planning and operational grants related to resilience and risk management, dedicating new funding for high priority projects, and/or developing (and receiving) funding proposals for other agencies such as CALFIRE.

- Identify additional resources and staffing to enable the city (and region) to address resilience plan implementation. This may include, but is not limited to, applying for additional technical assistance grants, operational funding grants, and other grants that would expand technical and staff abilities to conduct planning and implementation.
- Launch Community Emergency Response Team (CERT) training in Mt. Shasta to enable community members to become better educated and prepared for disasters.
- The City of Mt. Shasta should strive to be a model and enabler for LHMP updates and Resilience Planning for the entire South Siskiyou region, which could attract additional funding and support for planning and projects.
- Develop funding plan targeting key initiatives and operational support.
- Conduct internal disaster preparedness training for all city staff to fulfill state requirement and build internal teams and awareness.

# Appendix C: Previous Mitigation Plan Assessment

| Previous Mitigation Plan Assessment | |
|---|---|
| Action | Achieved |
| Equip Police and Fire centers with reliable emergency power | Yes |
| Identify and implement alternate power sources | No |
| Undergrounding of utilties | No |
| Trim back trees form power lines | Yes |
| Improve existing fire hydrants and water supplies | Yes |
| Consider becoming a "Firewise" community | No |
| Maintain mutial aid agreements | Yes |
| Encourage use of fire-resistant materials and creaiton of defensible space | Yes |
| Encourage performance based design | No |
| Support detailed lahar and ash fall studies | No |
| Consider partificaotion in the Community Rating System program | No |
| Maintain compliance and good standing under the NFIP | No |
| Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures form future damage, with repetitive loss and severe loss properties as priority | No |
| Support County-wide inititatives identified in Volume I of the Plan | Yes |
| Continue to support the implementation, monitoring, maintenance, and updating of this Plan as identified in Volume I | No |

# Worksheet 4.1

Capability Assessment Worksheet

## Capability Assessment Worksheet

Jurisdiction: City of Mt. Shasta, Siskiyou County, California

Local mitigation capabilities are existing authorities, policies, programs, and resources that reduce hazard impacts or that could be used to implement hazard mitigation activities. Please complete the tables and questions in the worksheet as completely as possible. Complete one worksheet for each jurisdiction.

## Planning and Regulatory

Planning and regulatory capabilities are the plans, policies, codes, and ordinances that prevent and reduce the impacts of hazards. Please indicate which of the following your jurisdiction has in place.

| Plans | Yes/No Year | Does the plan address hazards? Does the plan identify projects to include in the mitigation strategy? Can the plan be used to implement mitigation actions? |
|---|---|---|
| Comprehensive/Master Plan | Yes, 2017 | The Safety Element contains information on hazards, projects, and actions |
| Capital Improvements Plan | Yes, 2018 | CIP does not discuss hazards |
| Economic Development Plan | No | |
| Local Emergency Operations Plan | Yes, 2018 | Plan contains hazards but no projects or actions |
| Continuity of Operations Plan | No | |
| Transportation Plan | Yes, 2007 | Transportation is included in General Plan and coordinates with Safety |
| Stormwater Management Plan | Yes, | Does not address hazards |
| Community Wildfire Protection Plan | No | |
| Other special plans (e.g., brownfields redevelopment, disaster recovery, coastal zone management, climate change adaptation) | No | |

# Worksheet 4.1

Capability Assessment Worksheet

## Appendix D: City of Mt. Shasta Capability Assessment Worksheet

| Building Code, Permitting, and Inspections | Yes/No | Are codes adequately enforced? |
|---|---|---|
| Building Code | Yes | Version/Year: 2018 California Building Code |
| Building Code Effectiveness Grading Schedule (BCEGS) Score | No | Score: |
| Fire department ISO rating | Yes | Rating: 3/3Y |
| Site plan review requirements | Yes | Commercial and multi-unit residential require architectural review. Actively enforced |
| **Land Use Planning and Ordinances** | **Yes/No** | **Is the ordinance an effective measure for reducing hazard impacts?<br>Is the ordinance adequately administered and enforced?** |
| Zoning ordinance | No | No language pertaining to hazards |
| Subdivision ordinance | No | No language pertaining to hazards |
| Floodplain ordinance | No | Not in floodplain |
| Natural hazard specific ordinance (stormwater, steep slope, wildfire) | Yes | very high wildfire severity zone ordinance contains language and is enforced |
| Flood insurance rate maps | No | |
| Acquisition of land for open space and public recreation uses | Yes | Subdivision Ordinance is not effective nor enforced |
| Other | | |

**How can these capabilities be expanded and improved to reduce risk?**

Improvements can be made to the City's codes to match the work accomplished in long-term plans. An update of the zoning and subdivision codes could make the City more effective at planning for hazards.

The Capital Improvements Plan could contain a hazard analysis and hazard prioritization of future projects.

Building code should be assessed and rated for hazard response.

# Worksheet 4.1

Capability Assessment Worksheet

## Administrative and Technical

Identify whether your community has the following administrative and technical capabilities. These include staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. For smaller jurisdictions without local staff resources, if there are public resources at the next higher level government that can provide technical assistance, indicate so in your comments.

| Administration | Yes/No | Describe capability<br>Is coordination effective? |
|---|---|---|
| Planning Commission | Yes | Planning Commission is a monthly committee that is effective at coordinating and evaluating plans |
| Mitigation Planning Committee | No | |
| Maintenance programs to reduce risk (e.g., tree trimming, clearing drainage systems) | Yes | Programs are response based. Very little proactive effort |
| Mutual aid agreements | Yes | Mutual aid agreements between police and fire staff with outside agencies |
| **Staff** | **Yes/No<br>FT/PT[1]** | **Is staffing adequate to enforce regulations?<br>Is staff trained on hazards and mitigation?<br>Is coordination between agencies and staff effective?** |
| Chief Building Official | Yes/Contr | Contract employee is not adequate for any of the above. |
| Floodplain Administrator | No | |
| Emergency Manager | No | |
| Community Planner | Yes/FT | Planning staff is not adequate to enforce regulations. Staff is trained on hazards and mitigations. Coordination is effective |
| Civil Engineer | Yes/Contr | City Engineer Contract has civil engineer capable to meet above questions. |
| GIS Coordinator | Yes/Contr | City Engineer Contract provides GIS services when needed. Not adequate |
| Other | | |

1 Full-time (FT) or part-time (PT) position

# Worksheet 4.1

Capability Assessment Worksheet

| Technical | Yes/No | Describe capability<br>Has capability been used to assess/mitigate risk in the past? |
|---|---|---|
| Warning systems/services<br>(Reverse 911, outdoor warning signals) | Yes | CodeRed is limited to cell phone users who have signed up. Not adequately capable |
| Hazard data and information | Yes | Not adequate for general public or staff training |
| Grant writing | Yes | Limited in time and scope of training |
| Hazus analysis | No | |
| Other | | |

| How can these capabilities be expanded and improved to reduce risk? |
|---|
| Very little staff training and time is spent specifically on hazard mitigation. Most effort is put toward response.<br><br>All aspects of City functions could be improved to address hazards on a more frequent basis. Highest priority being communication to the public. |

# Worksheet 4.1

Capability Assessment Worksheet

## Financial

Identify whether your jurisdiction has access to or is eligible to use the following funding resources for hazard mitigation.

| Funding Resource | Access/ Eligibility (Yes/No) | Has the funding resource been used in past and for what type of activities?<br><br>Could the resource be used to fund future mitigation actions? |
|---|---|---|
| Capital improvements project funding | No | CIP does not prioritize or focus on hazard mitigation projects. Little political or fiscal ability to fund through CIP |
| Authority to levy taxes for specific purposes | Yes | Fire assessment is in place for services. Could be utilized more for hazard mitigaiton projects. |
| Fees for water, sewer, gas, or electric services | Yes | Has been used for disaster recovery. No hazard mitigation. |
| Impact fees for new development | No | |
| Storm water utility fee | Yes | Funds not adequate to support hazard projects |
| Incur debt through general obligation bonds and/or special tax bonds | No | |
| Incur debt through private activities | No | |
| Community Development Block Grant | No | City does not have qualifying income level for hazard projects |
| Other federal funding programs | No | Post disaster recovery only |
| State funding programs | No | Post disaster recovery only |
| Other | | |

| How can these capabilities be expanded and improved to reduce risk? |
|---|
| There is no fiscal support for hazard mitigation programs in the City. Any effort to expand consistent funding sources would be an improvement. |

# Worksheet 4.1

Capability Assessment Worksheet

## Education and Outreach

Identify education and outreach programs and methods already in place that could be used to implement mitigation activities and communicate hazard-related information.

| Program/Organization | Yes/No | Describe program/organization and how relates to disaster resilience and mitigation.<br><br>Could the program/organization help implement future mitigation activities? |
|---|---|---|
| Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access and functional needs populations, etc. | Yes | Mt. Shasta Bioregional Ecology Center focuses on environmental health with a prescribed burn program. Shasta Community Foundation is a nonprofit that collects private donations for disaster recovery |
| Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education) | Yes | Fire safety, evacuation plans, water conservation, and solid waste programs are periodically used |
| Natural disaster or safety related school programs | Yes | Fire safety and active shooter programs for safety personnel are annual applied |
| StormReady certification | No | |
| Firewise Communities certification | No | |
| Public-private partnership initiatives addressing disaster-related issues | No | |
| Other | | |

How can these capabilities be expanded and improved to reduce risk?

More education and engagement is always needed to all types of hazards. Specifically, information related to winter weather, fire safety, and storm preparedness.

The City can also improve relations with outside organizations that can assist with hazard mitigation and disaster preparedness.

# Safe Growth Audit

Use this worksheet to identify gaps in your community's growth guidance instruments and improvements that could be made to reduce vulnerability to future development.

| Comprehensive Plan | Yes | No |
|---|---|---|
| Land Use | | |
| 1. Does the future land-use map clearly identify natural hazard areas? | | |
| The 2007 General Plan does map the natural hazards in the area but does not communicate that to the zoning code. | ☑ | ☐ |
| 2. Do the land-use policies discourage development or redevelopment within natural hazard areas? | | |
| The land use policies do not discourage or address natural hazard areas. | ☐ | ☑ |
| 3. Does the plan provide adequate space for expected future growth in areas located outside natural hazard areas? | | |
| The General Plan discusses development in hazard areas but does not offer recommendations to reduce development in those areas. | ☐ | ☑ |
| Transportation | | |
| 1. Does the transportation plan limit access to hazard areas? | | |
| | ☐ | ☑ |
| 2. Is transportation policy used to guide growth to safe locations? | | |
| | ☐ | ☑ |
| 3. Are movement systems designed to function under disaster conditions (e.g., evacuation)? | | |
| The transportation system is designed for evacuation but mismanagement of auxiliary routes has decreased the system's effectiveness. | ☑ | ☐ |

| Comprehensive Plan (continued) | Yes | No |
|---|---|---|
| Environmental Management | | |
| 1. Are environmental systems that protect development from hazards identified and mapped? | | |
| | ☐ | ☑ |
| 2. Do environmental policies maintain and restore protective ecosystems? | | |
| City Staff encourage the preservation and restoration of protective ecosystems but it is not a formal policy. | ☐ | ☑ |
| 3. Do environmental policies provide incentives to development that is located outside protective ecosystems? | | |
| | ☐ | ☑ |
| Public Safety | | |
| 1. Are the goals and policies of the comprehensive plan related to those of the FEMA Local Hazard Mitigation Plan? | | |
| This a new state mandate that will be applied to the General Plan revision | ☐ | ☑ |
| 2. Is safety explicitly included in the plan’s growth and development policies? | | |
| The Safety Element of the General Plan specifically addresses all hazards in the area and provides policy and actions to mitigate. This element is coordinated with the land use and circulation elements to address growth | ☑ | ☐ |
| 3. Does the monitoring and implementation section of the plan cover safe growth objectives? | | |
| | ☐ | ☑ |

| Zoning Ordinance | Yes | No |
|---|---|---|
| 1. Does the zoning ordinance conform to the comprehensive plan in terms of discouraging development or redevelopment within natural hazard areas? | | |
| | ☐ | ☑ |
| 2. Does the ordinance contain natural hazard overlay zones that set conditions for land use within such zones? | | |
| | ☐ | ☑ |
| 3. Do rezoning procedures recognize natural hazard areas as limits on zoning changes that allow greater intensity or density of use? | | |
| | ☐ | ☑ |
| 4. Does the ordinance prohibit development within, or filling of, wetlands, floodways, and floodplains? | | |
| | ☐ | ☑ |
| **Subdivision Regulations** | **Yes** | **No** |
| 1. Do the subdivision regulations restrict the subdivision of land within or adjacent to natural hazard areas? | | |
| | ☐ | ☑ |
| 2. Do the regulations provide for conservation subdivisions or cluster subdivisions in order to conserve environmental resources? | | |
| | ☐ | ☑ |
| 3. Do the regulations allow density transfers where hazard areas exist? | | |
| The City does have a density program that is not hazard specific. | ☑ | ☐ |

| Capital Improvement Program and Infrastructure Policies | Yes | No |
|---|---|---|
| 1. Does the capital improvement program limit expenditures on projects that would encourage development in areas vulnerable to natural hazards? | | |
| | ☐ | ☑ |
| 2. Do infrastructure policies limit extension of existing facilities and services that would encourage development in areas vulnerable to natural hazards? | | |
| | ☐ | ☑ |
| 3. Does the capital improvement program provide funding for hazard mitigation projects identified in the FEMA Mitigation Plan? | | |
| | ☐ | ☑ |
| **Other** | **Yes** | **No** |
| 1. Do small area or corridor plans recognize the need to avoid or mitigation natural hazards? | | |
| | ☐ | ☑ |
| 2. Does the building code contain provisions to strengthen or elevate construction to withstand hazard forces? | | |
| Snow load, flooding potential, and development in fire severity zones are accounted for the City's Building standards | ☑ | ☐ |
| 3. Do economic development or redevelopment strategies include provisions for mitigation natural hazards? | | |
| | ☐ | ☑ |
| 4. Is there an adopted evacuation and shelter plan to deal with emergencies from natural hazards? | | |
| There is an extensive emergency plant that is updated annually | ☑ | ☐ |

Questions adapted from Godschalk, David R. Practice Safe Growth Audits, *Zoning Practice*, Issue Number 10, October 2009, American Planning Association. http://www.planning.org/zoningpractice/open/pdf/oct09.pdf.

# National Flood Insurance Program (NFIP) Worksheet

Use this worksheet to collect information on your community's participation in and continued compliance with the NFIP, as well as identify areas for improvement that could be potential mitigation actions. Indicate the source of information, if different from the one included.

| NFIP Topic | Source of Information | Comments |
|---|---|---|
| Insurance Summary | | |
| How many NFIP policies are in the community? What is the total premium and coverage? | State NFIP Coordinator or FEMA NFIP Specialist | 0 |
| How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage? | FEMA NFIP or Insurance Specialist | 0 |
| How many structures are exposed to flood risk within the community? | Community Floodplain Administrator (FPA) | 0 |
| Describe any areas of flood risk with limited NFIP policy coverage | Community FPA and FEMA Insurance Specialist | 0 |
| Staff Resources | | |
| Is the Community FPA or NFIP Coordinator certified? | Community FPA | No |
| Is floodplain management an auxiliary function? | Community FPA | No |
| Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability) | Community FPA | No services are facilitated by the City due to no river flooding potential |
| What are the barriers to running an effective NFIP program in the community, if any? | Community FPA | We are not eligible for the program due to no river floodplain. |
| Compliance History | | |
| Is the community in good standing with the NFIP? | State NFIP Coordinator, FEMA NFIP Specialist, community records | Never been in the program |
| Are there any outstanding compliance issues (i.e., current violations)? | | None that are known |
| When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)? | | No record of any visit |
| Is a CAV or CAC scheduled or needed? | | Unknown |

| NFIP Topic | Source of Information | Comments |
|---|---|---|
| Regulation | | |
| When did the community enter the NFIP? | Community Status Book http://www.fema.gov/national-flood-insuranceprogram/national-floodinsurance-programcommunity-status-book | We are not in the NFIP program |
| Are the FIRMs digital or paper? | Community FPA | N/A |
| Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways? | Community FPA | N/A |
| Provide an explanation of the permitting process. | Community FPA, State, FEMA NFIP<br>Flood Insurance Manual http://www.fema.gov/flood-insurance-manual<br>Community FPA, FEMA CRS Coordinator, ISO representative<br>CRS manual http://www.fema.gov/library/viewRecord.do?id=2434 | N/A |
| Community Rating System (CRS) | | |
| Does the community participate in CRS? | Community FPA, State, FEMA NFIP | No |
| What is the community's CRS Class Ranking? | Flood Insurance Manual http://www.fema.gov/flood-insurance-manual | N/A |
| What categories and activities provide CRS points and how can the class be improved? | | N/A |
| Does the plan include CRS planning requirements | Community FPA, FEMA CRS Coordinator, ISO representative<br>CRS manual http://www.fema.gov/library/viewRecord.do?id=2434 | N/A |

# Appendix E: 2007 General Plan Safety Element

## 6. SAFETY ELEMENT

### A. Introduction

California Government Code Section 65302(g) specifies that general plans include a safety element for the protection of the community from unreasonable risks associated with the effects of various hazards. The list of possible hazards includes: seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction and other seismic hazards; flooding; and wildland and urban fires. A safety element may also address evacuation routes, military installations, peak load water supply requirements, and minimum road widths and clearances around structures as those items relate to fire and geologic hazards.

The fire safety provisions in the safety element should comply with the minimum statewide fire safety standards pertaining to road standards, signing standards for roads and buildings, private water supply reserves, and fuel breaks and greenbelts.

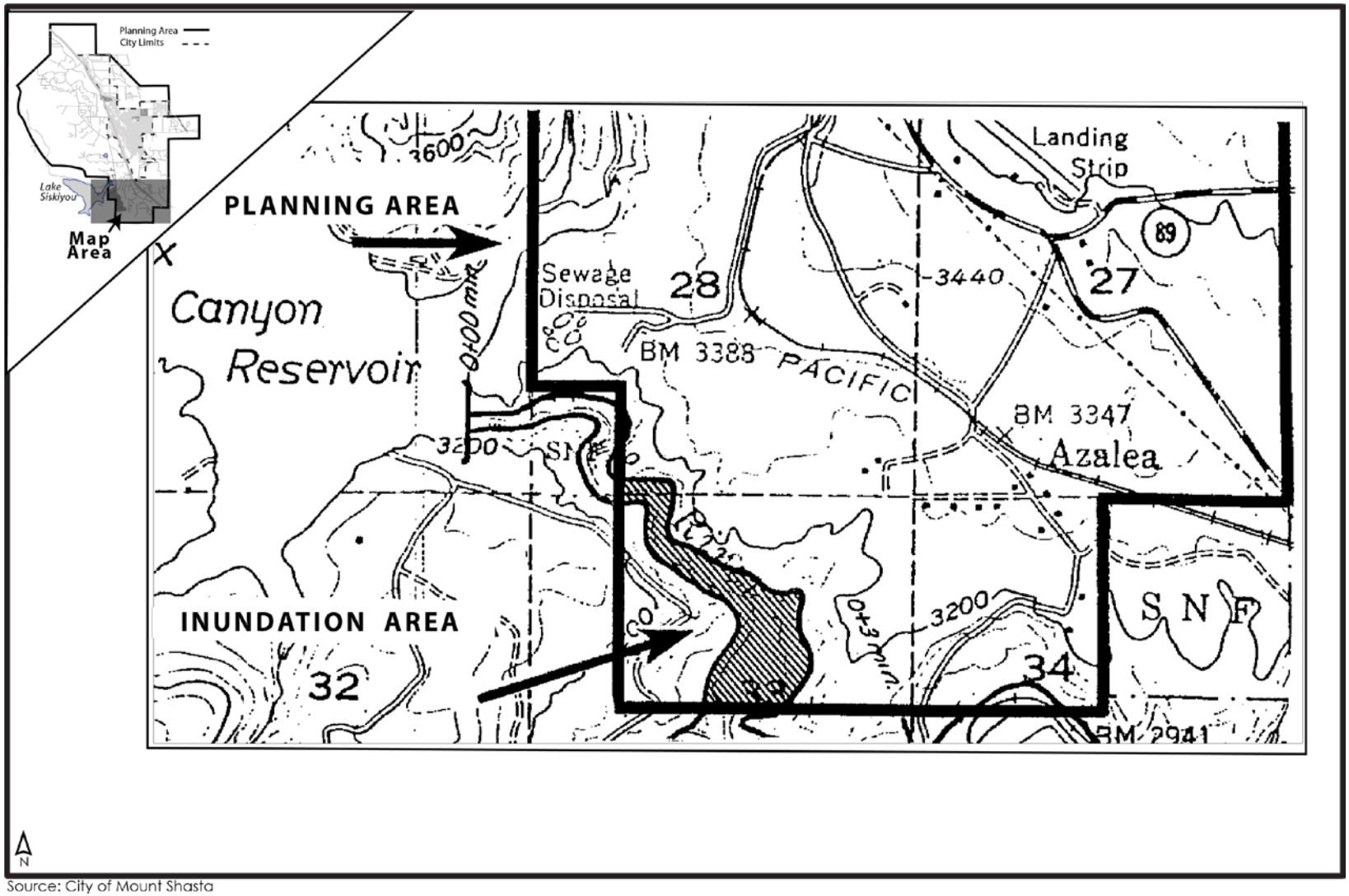
### B. Flood Hazards

#### 1. Background

Flood hazard in the planning area is very localized. The hazards are generally limited to riparian areas along streams, the shores of Lake Siskiyou and along the Sacramento River below Box Canyon Dam. The flooding of streams is caused by seasonal flow fluctuations and peak storm events. Flooding that occurs in the planning area generally only affects the immediate vicinity of particular streams.

The Federal Emergency Management Agency has not mapped floodplains in the planning area, with the exception of the shore of Lake Siskiyou and a narrow fringe area along the Sacramento River. Figure 6-1, Flood Hazards, shows the areas subject to inundation.

The Box Canyon area below Lake Siskiyou is subject to flood hazards from high precipitation and from potential dam failure. An inundation study prepared for the County indicates that portions of the canyon area below the dam would be inundated in the event of a dam failure. The study was prepared in 1973 by Olson and Associates Engineering and concluded that, in the planning area, inundated areas would be confined in the inner canyon area.




Source: City of Mount Shasta

**FIGURE 6-1**
**FLOOD HAZARD AREAS**



PMC

**2. General Plan Objectives and Programs: Flood Hazards**

**Goal SF-1:** Protect people and property from flooding.

**Policy SF-1.1:**

Identify areas subject to inundation

**Implementation Measures:**

SF-1.1(a): Require that the limits of flooding resulting from a one hundred-year storm event be shown on all permit site plans where lands may be subject to inundation.

SF-1.1(b): When subdivisions or discretionary permits are sought for lands adjoining streams that have had a history of overtopping the banks, require that an assessment be prepared by a qualified engineer or hydrologist to delineate areas likely to be subject to inundation from a one hundred-year storm event.

**Policy SF-1.2:** Develop a program to identify areas subject to flooding.

**Implementation Measures:**

SF-1.2(a): As studies related to flooding are prepared and submitted for projects, the Department of Public Works shall maintain a file of such reports and maps for public use.

SF-1.2(b): Each year, upon the annual review and update of the General Plan, any boundaries of flood studies prepared during the previous years shall be identified on a City Flood Sensitive Area map.

**C. Geologic Hazards**

**1. Background**

Potential geologic hazards in the area include seismicity (with related impacts such as liquefaction), slope instability and subsidence, and volcanism.

**Seismicity**

The severity of the impact of an earthquake on a community depends on the intensity and duration of ground shaking and on the occurrence of other seismically-induced phenomena. Factors related to severity include the magnitude of the seismic event, the distance between the community and the event fault, and on local geologic and soil conditions. Potential hazards induced by seismic activity include ground shaking, fault rupture, slope failures and liquefaction.

A fault rupture is an actual crack or breaking of the ground along a fault during an earthquake. Available literature indicates the planning area is subject to low levels of seismicity and low risk of fault surface rupture. The planning area is located in a “moderate” seismicity zone with a possible maximum earthquake intensity of VI

or VII on the Modified Mercalli Scale. Earthquakes of this magnitude would be noticeable by the public and could cause minor to moderate structural damage. The planning area has been subject to minor earthquakes.

Historically, there have been only two recorded earthquakes with a Richter magnitude of 4.0 or greater occurring in the immediate Mt. Shasta area. The 1994 Fault Activity Map, prepared by the California Division of Mines and Geology, indicates no active or potentially active faults within the Mt. Shasta
Planning Area. Two faults classified as "potentially active" by the California Division of Mines and Geology exist near the planning area. One is a northsouth trending fault running through the top of Mount Shasta, the other is an east-west trending fault that runs from the top of Mount Shasta to a point north of Black Butte. Because of the active volcanic status of Mount Shasta, these faults are considered potentially active by the California Geological Survey.

Some soils in the planning area may be subject to liquefaction as a result of seismic activity. Liquefaction occurs when earthquakes shake loose, wet, sandy soil. When this occurs, the soils can become almost like quicksand and lose their ability to support structures. Building foundations can sink, break apart or tilt. Gravity-fed pipelines can back up. In the planning area, soils underlain with glacial outwash deposits consisting of sands may be subject to liquefaction.

Pursuant to the Uniform Building Code, the project area is in Seismic Zone 3. Within the provisions of the Uniform Building Code, there are numerous differences between the low seismic risk zones of 0 and 1, the moderate risk zones of 2A and 2B, and the higher risk zones of 3 and 4. These differences include, among others, design force levels, structural connection details, and allowable materials (e.g., whether or not unreinforced masonry is allowed in new construction).

**Slope Instability and Subsidence**

The terrain of the planning area has primarily low to moderate slopes. During preparation of the Siskiyou County General Plan (1980), reconnaissance mapping was undertaken to identify potential geologic hazards. This mapping revealed no geologic hazards east of Interstate 5 given that slopes are relatively gentle. Mapping of slope instability of areas west of Interstate 5, including lands in the Shasta Trinity National Forest, identified landslide features along Rainbow Ridge and the Box Canyon Gorge. Steep hillsides such as Quail Hill and south of Old McCloud Road, although unmapped as to geologic hazards, may be subject to slope instability due to similar geology as Rainbow Ridge.

There are no known significant subsidence hazards in the planning area. Geologic or hydrologic conditions associated with subsidence are not known to occur in the area. However, some localized subsidence could result from peat oxidation in wetlands.

**Volcanic Hazards**

The City of Mt. Shasta lies on the southwestern flank of the Mount Shasta volcano, a large, historically active eruptive center in the southern Cascade Mountains. The Mount Shasta volcano has a long but irregular record of eruption. It has erupted at least once every 600-800 years for the past 10,000 years with its

most recent eruption having occurred over two hundred years ago in 1786 (Christianson, 1982). The potential volcanic hazards in the vicinity of Mt. Shasta have been detailed in geologic literature. The most pertinent studies were completed since the 1980 eruption of Mount St. Helens in Washington State (Crandell, 1987).

Fumarolic and hot spring activity persist at the summit area of Mount Shasta, which suggests that there is still a body of molten rock below the surface. The eruptive record suggests that the Mount Shasta volcano will probably erupt again in the future, but at a time and with a magnitude that are not possible to predict.

The figure and discussion below outline the types of volcanic-related hazards that could affect the City of Mt. Shasta and its planning area. Various kinds of volcanic activity can endanger life and property both close to and far away from a volcano. Some hazards are more severe than others, depending on the extent of the event, whether people or property are in the way, and the amount of time in which the community is warned of an impending event.

Although most volcanic hazards are triggered directly by an eruption, some hazards may occur when a volcano is quiet. Volcanic-related mudflows (often addressed as a “lahar”; a term from Indonesia) are a mixture of water and rock fragments that sometimes flow down the slopes of volcanoes and into downslope valleys and rivers. Eruptions may directly trigger mudflows by quickly melting snow and ice on the volcano. Mudflows can also be triggered by intense rainfall without being related to an eruption. Mudflows vary in size and speed. **Figure 6-2, Potential Mud Flow Channels**, indicates low-lying areas in the planning area that could potentially experience flows as the result of a volcanically triggered mudflow event. The potential mud flow areas indicated on this figure are not precisely defined and have only been presented as advisory information.

Pyroclastic flows are mixtures of hot gases and dry rock fragments that are blasted away from a vent at high speeds. Most pyroclastic flows consist of a basal flow of gases and coarse fragments that move along the ground, and a turbulent cloud of extremely hot gases and ash that rises above the basal flow. Ash may fall from this cloud over a wide area downwind from the pyroclastic flow.

Landslides may also be triggered on or near a volcano by an eruption or by seismic events related to volcanic forces beneath the surface.

In the case of the Mount Shasta volcano, eruptions during the last 10,000 years produced lava flows around the flanks of the mountain. Pyroclastic flows from summit and flank vents extended as far as 20 kilometers from the summit. Most of these eruptions also produced large mudflows, many of which reached more than several tens of kilometers from the mountain. If a future eruption resembled those of the past, the City of Mt. Shasta and the vicinity, as well as the communities of Weed, McCloud and Dunsmuir, would be endangered. USGS Bulletin 1503 speculated that such eruptions could generate lava and pyroclastic flows that could affect low areas almost anywhere within about 20 kilometers of the summit and mudflows may cover valley floors and other low areas for several tens of kilometers from the volcano [Miller, 1980].

Such a major event could be expected to have significant impacts within the planning area. The City of Mt. Shasta lies in the lower portion of an old, broad pyroclastic and debris fan on the southwest side of the volcano. Cold Creek, Big Springs Creek, and Wagon Creek run along the base of the fan and are likely channels into which any far-traveled flow would empty. The lower portions of the drainages of Cascade Gulch and Avalanche Gulch are likely pathways for flows to travel toward the City.

Development located in these hazard areas may be at risk if a future eruption occurs on the south or west slopes of Mount Shasta. While it is possible to avoid substantial impacts by precluding development in recognized volcanic hazard areas (which amounts to approximately 60 percent of the private land in the planning area), the City has considered a number of factors in adopting its related attitude that the City will not preclude development in lands that may be subject to volcanic hazards. The predicted eruption interval of six to eight hundred years suggests an estimate that Mount Shasta may not erupt until the year 2376, if at all. If the City were to preclude development in potential hazard areas, the City could be required to compensate property owners for condemnation of property. This would be an infeasible fiscal liability in response to a hazard that has such an uncertain potential of occurring.

Hazards due to potential volcanic airfall and volcanic-related earthquakes can be reduced by requiring building foundations, walls and roofs to be properly supported and kept in good repair. Such construction is already required by building codes due to the potential for non-volcanic (i.e., tectonic) seismic hazard potential. Proper geotechnical examinations should assure that foundations are set in well-consolidated deposits or hard rock. Development should be avoided in poorly consolidated substrata, especially in areas with high water tables such as marshes and meadows, as well as in river and stream flood plains. Steeply gabled roofs designed for snow may also be effective for shedding volcanic ash. Flatter-topped buildings should have easy access to the roof and handy shovels to remove debris that might result in excessive roof loads that could cause structural collapse.

Technological advances in volcano monitoring, new and refined volcanohazard assessments, and better warning programs have significantly improved the ability to warn of impending eruptions and related volcanic hazards. However, volcano monitoring technology and warning plans, no matter how timely and accurate, will reduce risks only to the extent that warnings are communicated effectively to emergency personnel and to people who live and work in potentially hazardous areas.

Education of the citizenry, including distribution of pamphlets on possible volcanic hazards, can be an important tool as part of the long-term planning goals and emergency contingency plans for the community.

The general conclusion concerning volcanic risks in the Mt. Shasta area is that it is recognized that there is a long-term potential for volcanic hazards to property and infrastructure in the vicinity, but that there is a very low risk to human life since it is expected that an impending eruption would be detected in ample time to notify and evacuate people. Although it is understood that some low-lying areas in the planning area have a higher potential than other areas for destruction of property

that could be caused by volcanic mudflows, etc., the expectation that such an event may not occur for hundreds of years, if ever, leads local agencies to conclude that the potential is not regarded as a constraint to planning and approval of development projects in relatively vulnerable areas.

**Liquefaction**

The California Geological Society has identified soils in the planning area that may be subject to liquefaction as a result of seismic activity. Soils underlain with glacial outwash deposits consisting of loose sands, silty sands and gravelly sands may be subject to this condition. For example, it is reported that the California Geological Society has discovered soils of this type near the Sisson school site.

**2. General Plan Objectives and Programs: Geologic Hazards**

**Goal SF-2:** Assure life and property are adequately protected from seismic hazards in the area.

**Policy SF-2.1:** Avoid development in areas of steep slope and high erosion potential.

**Implementation Measures:**

SF-2.1(a): Maintain a maximum density of not more than one dwelling per ten acres of gross land area on slopes in excess of thirty percent.

SF-2.1(b): Amend the land development code to establish special review standards for areas with slopes of greater than thirty percent.

SF-2.1(c): Ensure that site development on steep slopes is designed to avoid creating areas that may be subject to slippage or movement from storm events.

SF-2.1(d): Encourage the use of density transfer to avoid new private construction in areas of steep slopes or high erosion potential.

**Goal SF-3:** Take prudent steps to maintain emergency services in the event of volcanic activity.

**Policy SF-3.1:** Periodically update the City's emergency service program to minimize destruction from volcanic activity.

**Implementation Measures:**

SF-3.1(a): Evaluate power, telephone, water, sewer and other utilities; roads, and landing strips for their location and resistance to the effects of various volcanic hazards, and provide the City Council with recommendations for improvements.

SF-3.1(b): Local, state, and Federal governments should develop contingency plans for a possible volcanic eruption at Mt. Shasta, including provisions for emergency communication.

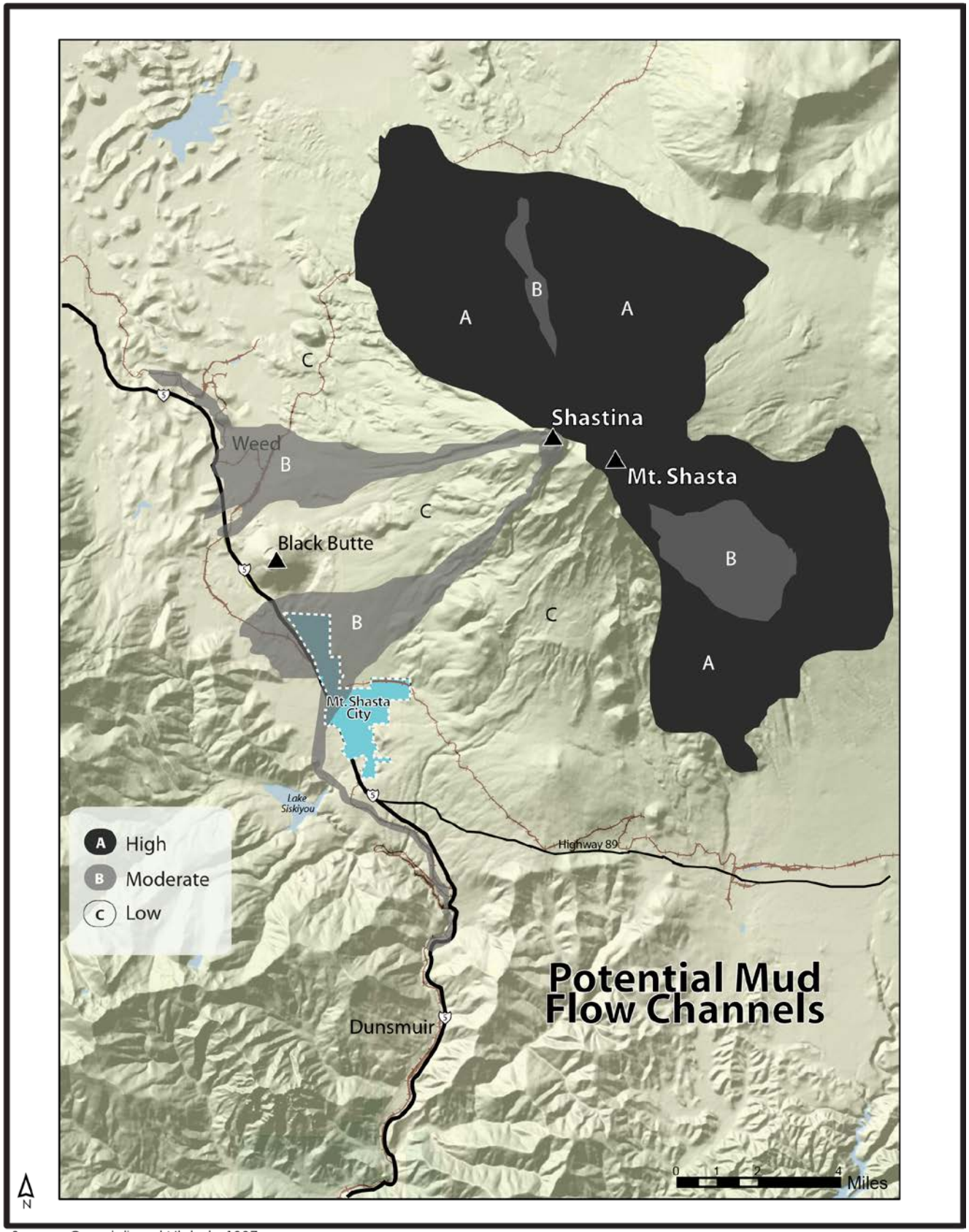
SF-3.1(c): Develop programs to educate residents about preparing for volcanic hazards.

**Policy SF-3.2:** Take steps to protect public facilities and emergency service providers.

**Implementation Measures:**

SF-3.2(a): Avoid construction of public or emergency buildings within low-lying areas that may be subject to volcanic flows.

SF-3.2(b): Evaluate and upgrade necessary local codes to accommodate the potential effects of volcanic induced seismic and airfall hazards.




Source: Crandell and Nichols, 1987

**FIGURE 6-2**

## POTENTIAL MUD FLOW CHANNELS



PMC

## D. Fire Hazards

### 1. Background

(Note: Fire protection services are addressed in the Land Use Element.)

Due to the abundance of native vegetation, hillside slopes, dry summers, and the extent of development that is located in the wildland interface, fire hazards within the planning area include the potential for wildland fires as well as structural fires.

Wildland fires present considerable risks to development in areas where a wildland-urban interface exists. A wildland-urban interface is simply the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. Given that much of the planning area around the City of Mt. Shasta meets the definition of such an interface, a potential threat to both life and property exists for many residents of the planning area. Even without a loss of life or structures, wildland fires often result in substantial suppression costs, a loss of forest resources, considerable disruption to the surrounding community, and visual scars on the landscape.

In order to better address wildland fire hazards in the vicinity of the City of Mt. Shasta and develop measures to minimize these risks, the Mt. Shasta Fire Safe Council obtained funding for, and coordinated preparation of, the Mt. Shasta Area Community Wildfire Protection Plan (CWPP), dated June 2006 . The CWPP was prepared with the purpose of identifying areas of high priority for fuels reduction treatment, and to provide guidelines for the implementation of a pro-active program that would reduce the potential for loss of life and property resulting from wildfires. The plan also assessed community fire emergency preparedness.

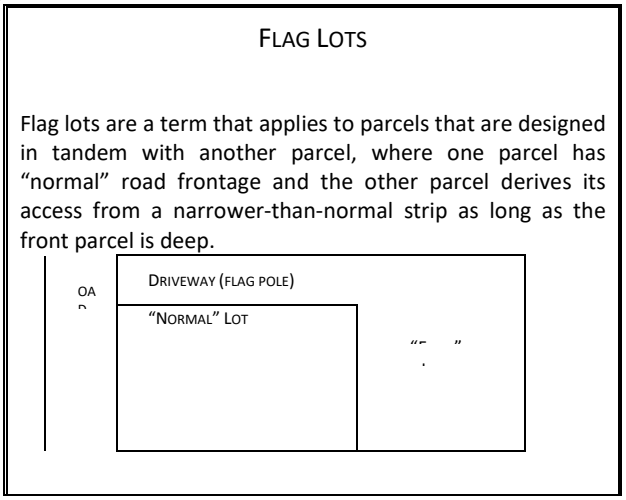
According to the CWPP, areas dominated by chaparral pose the greatest risk for wildfire due to the intensity of the fuel loading, with areas dominated by grass, brush and timber also posing significant risks. The greatest impact to structures, however, would likely occur along the southern and eastern edges of the City where there are not only ample fuels present, but a substantial amount of development as well.

The CWPP proposes a number of measures to minimize risks to life and property resulting from wildfires. These include: the creation of fuel breaks and shaded fuel breaks surrounding the City; forest thinning to reduce the existing fuel load; enforcement of state defensible space requirements; and implementation of a public education campaign. While implementation of these measures would undoubtedly reduce the impact of a wildfire should one occur, there needs to be resolution concerning how much of the program recommended in the CWPP will be generally supported by the City and the general public. Some residents are concerned about the visual impacts of planned projects that would significantly thin forests and develop wide fuel breaks around the community.

Various provisions of State law address fire safety. The City of Mount Shasta is rated as being in a “Very High Fire Hazard Severity Zone” pursuant to California Government Code Section 51179. Jurisdictions and property owners within such zones are required to comply with the requirements of Section 51182 of the Government Code. One such requirement is the maintenance of at least 100 feet

of defensible space around structures, or the clearing of all flammable vegetation (with a few exceptions) to the property line should that distance be shorter. Other requirements of the Code are designed to reduce hazards to residences in the event of a wildfire, but are likewise designed to minimize the likelihood of fires spreading outward from a structural fire.

Successful responses to structural fires involve short response time, good water supply, adequate equipment and trained personnel. In areas served by the City's water system, hydrant availability, flow and pressure are generally adequate for fire fighting purposes. Access to development in the planning area is generally adequate with the exception of some "flag lots." In addition, winter snow conditions and railroad crossings may delay response time to structural fires.




In response to a series of devastating fires in the rural foothills of California and the infamous Oakland Hills fire in October 1991, California law has undergone a number of revisions and updates as the Legislature, the California Department of Forestry and Fire Protection, and local fire-fighting organizations strive to improve the means of protecting property and life from fire danger.

Sometimes relatively simple measures can benefit community fire safety. Such measures include requirements for readily-visible street addresses, maintaining public street signs and ensuring that owners of private roads do the same. The use of firebreaks in strategic locations along the wildland-urban interface is also beneficial. Construction standards such as prohibiting flammable roofing materials, encouraging the use of residential sprinkler systems, and ensuring that new developments have adequate water pressure to serve fire hydrants are among the simpler measures that can be implemented. Other key issues are the lengths of dead-end roads to cul-de-sacs and flag lots, and the standards of access roads to accommodate fire-fighting vehicles and ensure the safety of fire-fighting personnel. The Uniform Building Code (UBC) provides for such things as firewall standards and sprinkler systems in certain types of new buildings.

Issues concerning evacuation of neighborhoods in the event of wildfire are addressed below.

**2. General Plan Objectives and Programs: Fire Hazards**

**Goal SF-4:** Protect property and life from fire hazards.

**Policy SF-4.1:** Update City codes to provide for fire protection.

**Implementation Measures:**

SF-4.1(a): Amend the City's building and land development codes to incorporate fire prevention and wildfire protection measures.

SF-4.1(b): Utilize the expertise and experience of the area fire fighting personnel to recommend a workable program that can be used to gain public cooperation in protecting property and lives against fire hazards.

SF-4.1(c): Require street and address signs to be clearly and legibly displayed for all streets and structures in the City.

SF-4.1(d): Amend the land development code to require adequate fire suppression water supplies for all new development, other than the construction of a single-family home on an existing single family parcel.

SF-4.1(e): Require residents to maintain defensible space around their homes and businesses consistent with state standards.

SF-4.1(f): The City shall review the recommendations of the
Mt. Shasta Area Community Wildfire Protection Plan and, when found to be appropriate and otherwise consistent with City policy, support and/or implement its recommendations.

SF-4.1(g): In evaluating proposed measures for public safety concerning fire hazards, the City will consider, and

will encourage the County to consider, the recommendations and standards set forth in the Fire Hazard Zoning Field Guide.

**Policy SF-4.2**: Adopt and enforce development standards that provide adequate fire protection.

**Implementation Measures:**

SF-4.2(a): Avoid individual driveways of more than seventyfive feet in length by requiring as a condition of building permits extra width or mandating a paved, all-weather surface for longer driveways.

SF-4.2(b): Amend the land development code to require that cul-de-sacs serving individual parcels with a length of more than three hundred feet be wide enough to allow for incoming-and outgoingvehicles during a fire emergency. The minimum paved width shall be twenty feet with two four-foot shoulder areas.

SF-4.2(c): Amend the land development code to require special fire agency approvals for any new cul-desac proposed to have a length greater than onequarter of a mile. The City may deny a road design on the basis of single access point and length of cul-de-sac.

SF-4.2(d): Require all new subdivisions when viewed as complete projects to have at least two points of public ingress and egress unless there are overriding considerations agreed to by the fire chief or California Department of Forestry and Fire Protection for allowing only one public access point.

## E. Hazardous Materials

### 1. Background

Hazardous materials consist of injurious substances that may include flammable liquids and gases, poisons, corrosives, explosives, oxidizers, radioactive materials, bio-waste and medical supplies.

Hazardous materials are transported in large volumes on Interstate 5 and on the Union Pacific Railroad (UPRR). Caltrans indicates that nearly every conceivable type of hazardous material is transported over Interstate 5. The most common materials are liquefied petroleum gas and gasoline. Some transportation of hazardous materials occurs on local streets within the planning area, but in much smaller quantities compared to the quantities transported on Interstate 5. UPRR transports hazardous materials through the area. The most common types of materials transported by rail are flammable and nonflammable gases, corrosives and flammable liquids.

The “Cantara Spill” of 1991, which is regarded as one of California’s largest inland ecological disasters, dramatized the hazards associated with transportation of hazardous materials in the area. On July 14, 1991, railcars of a Southern Pacific Railroad train (before the line was acquired by UPRR) derailed just south of the Mt. Shasta planning area at a hairpin turn along the Sacramento River called Cantara Loop. One railcar was ruptured by the fall and spilled approximately 19,000 gallons of a highly toxic compound (metam sodium) into the river. As the chemical moved downstream toward Shasta Lake, it destroyed aquatic life for approximately 36 miles of the river. The river ecosystem slowly recovered, but the spill had a significant impact on the river as well as on the neighboring community of Dunsmuir.

The California Highway Patrol and UPRR both maintain hazardous material response units. However, these units are not locally based and, therefore, the Mt. Shasta Police and Fire Departments and the Mt. Shasta Fire Protection District are expected to respond first to any incidents in the planning area.

Industrial facilities, depending on the nature of their business, may store, use and generate hazardous materials and hazardous waste. Industries that typically have hazardous material issues include metal plating, painting and machining, and manufacturing and testing.

Hazardous materials storage and handling and hazardous waste generation and disposal are regulated by various federal and state regulations. The Resource Conservation and Recovery Act (RCRA) has mandated a national waste management program since 1976. Under RCRA, hazardous waste must be tracked from the time of generation to the point of disposal. A program must be instituted by every generator and handler to manage hazardous waste in a manner that minimizes the present and future threat to the environment and human health. Each hazardous waste generator must register and obtain an identification number from the Environmental Protection Agency under RCRA regulations.

The State Hazardous Waste Control Law is the basic state law that implements the RCRA waste management system. The Department of Toxic Substances Control is

the primary regulatory agency administering the state hazardous waste program. DTSC has delegated local agencies to inspect and regulate small generators.

Any business handling hazardous materials (as defined in Section 25500 of the California Health and Safety Code, Division 20, Chapter 6.95) requires a permit (typically from the local fire department) in order to register the business as a hazardous materials handler. Such businesses are also required to comply with California's Hazardous Material Response Plans and Inventory Law (AB 2185). AB 2185 requires immediate reporting of any release or threatened release of a hazardous material to the local administering agency and the State Office of Emergency Services. In addition, any business handling more than 500 pounds of solid, 55 gallons of liquid, or 200 cubic feet of gaseous hazardous material, at any one time, is required under AB 2185 to file a business plan. The business plan must be submitted to the local administering agency of the program. Emergency response procedures should be included in the business plan.

**2. General Plan Objectives and Programs: Hazardous Materials**

**Goal SF-5:** Protect people and the environment from hazardous materials exposure.

**Policy SF-5.1:**

Assure that the use, storage, and transportation of hazardous materials complies with Federal and State regulations.

**Implementation Measures:**

SF-5.1(a): Working with the State Department of Health and the County Health Department, enforce the applicable provisions of State law related to hazardous material storage.

SF-5.1(b): Ensure that the Fire Department maintains the appropriate "Right-to-Know" records related to storage, use, and disposal of hazardous materials.

**Policy SF-5.2:** Develop communications with the railroads concerning the transportation of hazardous materials.

## Implementation Measures:

SF-5.2(a): Each year during the annual review of the General Plan, send a letter to the appropriate official of the McCloud and Union Pacific Railroad requesting notification of any changes in the status of the railroads' procedures for tracking and transporting hazardous materials in the area.

SF-5.2(b): At least once every three years, coordinate an emergency services exercise with the County

Office of Emergency Services to practice procedures related to a hazardous material spill.

**F. Railroad Crossing Safety**

**1. Background**

Collisions at highway-rail crossings are one of the leading causes of death and serious injury associated with railroad operations in the United States.

Two railroad lines are located within the City of Mt. Shasta. The Union Pacific Railroad (UPRR) line through the City (previously operated by Southern Pacific Railroad) is the main north/south railroad through Northern California. Approximately 16 trains per day pass through Mt. Shasta on this interstate line. The McCloud Railway Company (MRC) operates a short-line railroad out of McCloud. The MRC line connects with the UPRR line in Mt. Shasta along North Mt. Shasta Boulevard.

There are a total of seven railroad crossings within the City of Mt. Shasta. Five grade crossings are located along the Union Pacific line. Two crossings are on Nixon Street, and there are crossings of Alma Street, Lake Street and Ream Avenue. All five UPRR crossings are gated. There are two grade crossings for the MRC line; one for Everitt Memorial Highway and one for North Mt. Shasta Boulevard. Both MRC crossings are "passive" and are equipped with flashing lights but no gates.

"Passive" traffic control devices are simply signs and pavement markings that provide warning to vehicles on the street of an upcoming railroad crossing. "Active" traffic control devices are activated by a detection circuit in the railroad track and give warning of an approaching train at the crossing. Typically, the circuit triggers the flashing of lights, the ringing of audible alarms, and the lowering of gates across the street. A warning provided by a train's horn is required as a train approaches both at-grade crossings with active warning devices and crossings with "passive" warning measures.

Locomotive engineers typically sound their horns at least 15 seconds before the train enters a public highway-rail grade crossing. The intent is to sound the horn loud enough and timely for a vehicle on the street approaching the crossing to hear the horn. With the objective of the warning having a sound level of 95 dB(A) at the "motorist decision-making point" 50 feet in advance of the grade crossing, the Federal Railway Administration (FRA) has determined that 108 dB(A) is the optimal sound level for locomotive horns (Federal Railroad Administration, 2005). A horn sound level of 110 dB(A) is the maximum and 96 dB(A) is the minimum sound level. However, such a warning exposes a considerable segment of the local community near the tracks to the blast of the horn as well as the motorists and pedestrians, as intended, who may be approaching the crossing.

The use of train horns as trains approach crossings has raised two particular issues concerning public safety and related noise impacts to neighborhoods around the crossings. These issues are 1) the alternative use of "wayside horns", and 2) the establishment of "quiet zones". These issues are discussed in more detail in the Noise Element of this general plan. However, because the issue is primarily a public safety concern, a related goal and policy statement with an implementation proposal are set forth below in this Safety Element.

**2. General Plan Objectives and Programs: Railroad Crossings**

**Goal SF-6:** Maintain public safety at locations where rail and other transportation facilities interface.

**Policy SF-6.1:** Work with Union Pacific Railroad and the McCloud Railway Company to identify measures to reduce the impact of rail traffic on the City's circulation system.

**Implementation Measure:**

SF-6.1(a): Evaluate the adequacy of public safety provisions at railroad grade crossings and support improvements where warranted.

**Goal SF-7:** Maintain adequate levels of public safety at street-rail grade crossings while, when possible, reducing noise impacts involved with warning systems.

**Policy SF-7.1:** The City will consider the feasibility and means for modifying warning and control systems at selected street-rail grade crossings to reduce related noise impacts, provided that adequate public safety is provided.

**Implementation Measure:**

SF-7.1(a): The City will consider the feasibility of establishing "quiet zones" and/or the use of wayside horns to reduce train horn noise impacts pursuant to the criteria of the Federal Railroad Administration. A determination to proceed with implementation will be based on the expected adequacy of public safety and cost feasibility.

**G. Evacuation and Related Infrastructure**

**1. Background**

Portions of the planning area may need to be evacuated for a number of reasons including wildfire, volcanic activity, or truck or railroad accidents involving significant quantities of hazardous materials. Response and evacuation procedures have been addressed in the City's Emergency Plan, which is updated periodically. The responsibility for day-to-day initial emergency response is that of the Mt. Shasta Fire and Police Departments, the County Sheriff, and the Mt. Shasta Fire Protection District.

General evacuation of the Mt. Shasta area could be required prior to a volcanic eruption. Such an eruption is expected to be preceded by warning signs detected by seismic and other monitoring devices installed in the Mt. Shasta area. As in the case of Mt. Saint Helens, a warning would be issued in ample time prior to an eruption and an orderly evacuation could take place.

Concerning evacuation issues related to wildfire, the need for and scope of evacuation is dependent on the extent and severity of the fire. Evacuation of only a few homes within a threatened area would not typically create a serious traffic control problem. A large scale evacuation, however, may result in significant traffic problems and would require more extensive traffic control measures.

Principal evacuation routes from Mt. Shasta include Interstate 5 north- and southbound and Highway 89 to the southeast. Evacuation routes should be developed with the intent to direct traffic toward the nearest highway. Due to vehicle carrying capacity, the highways are logical routes by which to move people away from endangered areas. In some locations of the planning area, evacuation could be constrained by the lack of access and egress roads into the area, or by the length of dead-end and cul-de-sac roads.

Although most primary roads (e.g., Mt. Shasta Boulevard, Everitt Memorial Highway, Old Stage Road) in the City of Mt. Shasta and the surrounding community are of sufficient width to allow for passage of emergency vehicles and evacuating residents, many of the secondary roads that serve residential areas (e.g., Davis Place Road, Shasta Ranch Road) are narrow and/or may have few if any ingress/egress options. This would make it exceedingly difficult for engines, tankers, and other firefighting equipment to enter the area while residents are evacuating. Traffic control in these less accessible areas would be crucial in the event of fire.

Evacuation planning needs to be concerned about the capacity of local roads in the event of sizable fires. Many of the roads that service areas of residential development, primarily in older neighborhoods, are inadequate to provide safe passage of residents out of some areas and, at the same time, provide good access to emergency vehicles responding to a fire. These roads are often narrow with dense vegetation growing up to the road shoulder. The steepness of roadway grades can also be an issue.

The lack of multiple access and egress to the unincorporated area east of the City is a recognized concern. The County has permitted a substantial amount of residential development that relies upon McCloud Avenue as the only paved street for evacuation and emergency access. Rockfellow Drive, which could provide an important optional route, has not been extended and developed to adequately serve this area.

To ensure the provision of adequate evacuation routes, as well as the provision of adequate access roads for emergency equipment, standards for minimum road widths and maximum access road lengths are prescribed. For example, the California Code of Regulations includes basic wildland fire protection standards of the California Board of Forestry. (California Code of Regulations, Section 1270, et seq.) Standards include provisions that the maximum length of a dead-end road shall not exceed 800 feet for parcels zoned for less than one acre and 1,320 feet for parcels zoned for 1 acre to 4.99 acres in size. Typically, all two-way roads should be constructed to provide a minimum of two nine-foot traffic lanes. The grade for all roads, streets, private lanes and driveways shall not exceed 16 percent. (Many communities limit the grade of roads and driveways to no more than 12 percent. The California Code of Regulations should be consulted for a more-complete discussion of these and other standards.

Evacuation events should be overseen by an “incident commander” and local police and fire departments. Upon initiation of an evacuation, a local law enforcement agency such as the Mt. Shasta Police Department or Siskiyou County Sheriff’s Department would be called upon to mange crowds and traffic and will be designated as the Evacuation Coordinator. The Evacuation Coordinator will

select the best routes from the endangered area after considering the nature of the incident, the size of the population to be evacuated, and road capacity and characteristics. Specific evacuation routes will be selected as the emergency situation develops. An evacuation location will be identified. A school, park, or church would generally have enough parking and facilities to serve this purpose. During an incident, residents would be briefed on the situation and instructed on how to properly evacuate, which way to drive out of the area, and where the nearest evacuation point has been established.

(See also the related policies and implementation measures in the "Fire Hazards" section above.)

**2. General Plan Objectives and Programs: Evacuation**

**Goal SF-7:** Identify and maintain emergency evacuation routes.

**Policy SF-7.1:** Working with the County, identify routes to evacuate area residents for different types of emergencies.

**Implementation Measure:**

SF-7.1(a): Work with the County to establish emergency evacuation routes in the event of different categories of emergencies: severe rain or snow storm, flood, fire, volcanic or seismic.

**H. Snow Removal**

**1. Background**

The City of Mount Shasta wishes to ensure the safe and orderly flow of traffic within and through the City. During the winter months, snowfall presents an added challenge to achieving this goal. Snow must be properly managed in order to reduce risks to pedestrians and vehicles, ensure that emergency equipment has access to all areas of the City, and to minimize impacts on commerce and community services.

With approximately 50 miles of roadway and other City-owned right-of-ways to be cleared during each storm event, it can take between eight and twelve hours to clear 12 inches of fresh snowfall. The City typically initiates plowing once the snow reaches a depth of four to six inches, with plowing beginning earlier during storms that pose a greater hazard to the community. The City currently (2006) has seven snowplows, one truck for spreading sand and 11 public works employees responsible for snow removal and safety during storms.

During major snowstorms, the City's primary goal is to provide for the safe and orderly movement of emergency equipment and the traveling public. In these situations, the priority order is typically:

1) Support for emergency response vehicles.
2) Clear main arterial roadways and intersections.
3) Clear collectors.
4) Clear secondary residential streets. 5) Clear City-owned parking lots.

During plowing activities, parking along City streets and right-of-ways is prohibited. This helps ensure that snow removal equipment can operate unimpeded and can clear the City's streets in an efficient and timely manner. For those individuals lacking off-street parking, the City provides a number of "snow parking" areas. These areas are: a small dirt parking lot behind the Sportsman's Den off Castle Street; the public parking lot across from the fire station on West Lake Street; Ivy Street between Mt. Shasta Boulevard and Chestnut Street (south side only); the Little League ballpark on Washington Drive behind Sisson School (near snow parking signs); and the parking lot off of Alma Street between North Mt. Shasta Boulevard and the railroad tracks.

It is the City's intent to clear snow from the entire road width prior to allowing on-street parking to continue. This is accomplished by making multiple passes along each of the City streets. The first pass removes enough snow for the roads to remain open, with subsequent passes widening the traffic lanes. During big storms, this process may continue for several days before on-street parking can resume. So that on-street parking may resume sooner in the downtown area and permit commerce to continue, snow is plowed to the center of the street rather than to the curb. The City subsequently removes the snow berms from the center of the roadways with front end loaders as time and priorities allow.

In order to ensure the safe and orderly flow of traffic through the City during snow events, the City has adopted several ordinances governing snow removal. These ordinances have been codified in Chapter 12.24 of the Mt. Shasta Municipal Code. Two of the more noteworthy sections in this chapter are Section 12.24.030, which prohibits obstructing snow removal equipment with vehicles parked along roadways and in City right-of-ways, and Section 12.24.060, which regulates the dumping of snow from private property onto roadways and City right-of-ways.

Developers should consider snow management at the earliest phase of development planning and incorporate design features to handle snow plowing and storage. Snow storage areas must be designated on site; plowing snow onto public streets is not allowed.

**2. General Plan Objectives and Programs: Snow Removal**

**Goal SF-8:** Ensure the safe and orderly flow of traffic through the City during and after winter storm events.

**Policy SF-8.1:** The City shall enforce rules and regulations that govern the ability of the City to provide roadways unobstructed by snow.

**Implementation Measure:**

SF-8.1(a): Enforce Chapter 12.24 of the Mt. Shasta Municipal Code.

**REFERENCES:**

California Code of Regulations, SRA Fire Safe Regulations, Title 14, Section 1270 et seq., 2000.

Christianson, Robert L., Volcanic Hazard Potential in the California Cascades; Martin, R. and Davis J. (editors), Status of Volcanic Prediction and Emergency

Response Capabilities in Volcanic Hazard Zones of California (Sacramento: California Division of Mines and Geology, Special Publication 63, 1982), pp. 41-59.

City of Mt. Shasta, General Plan, 1993.

Crandell, Dwight R. and Nichols, Donald, R., Volcanic Hazards at Mount Shasta (Menlo Park, CA: U.S. Geological Survey, 1987), pamphlet, 21 p.

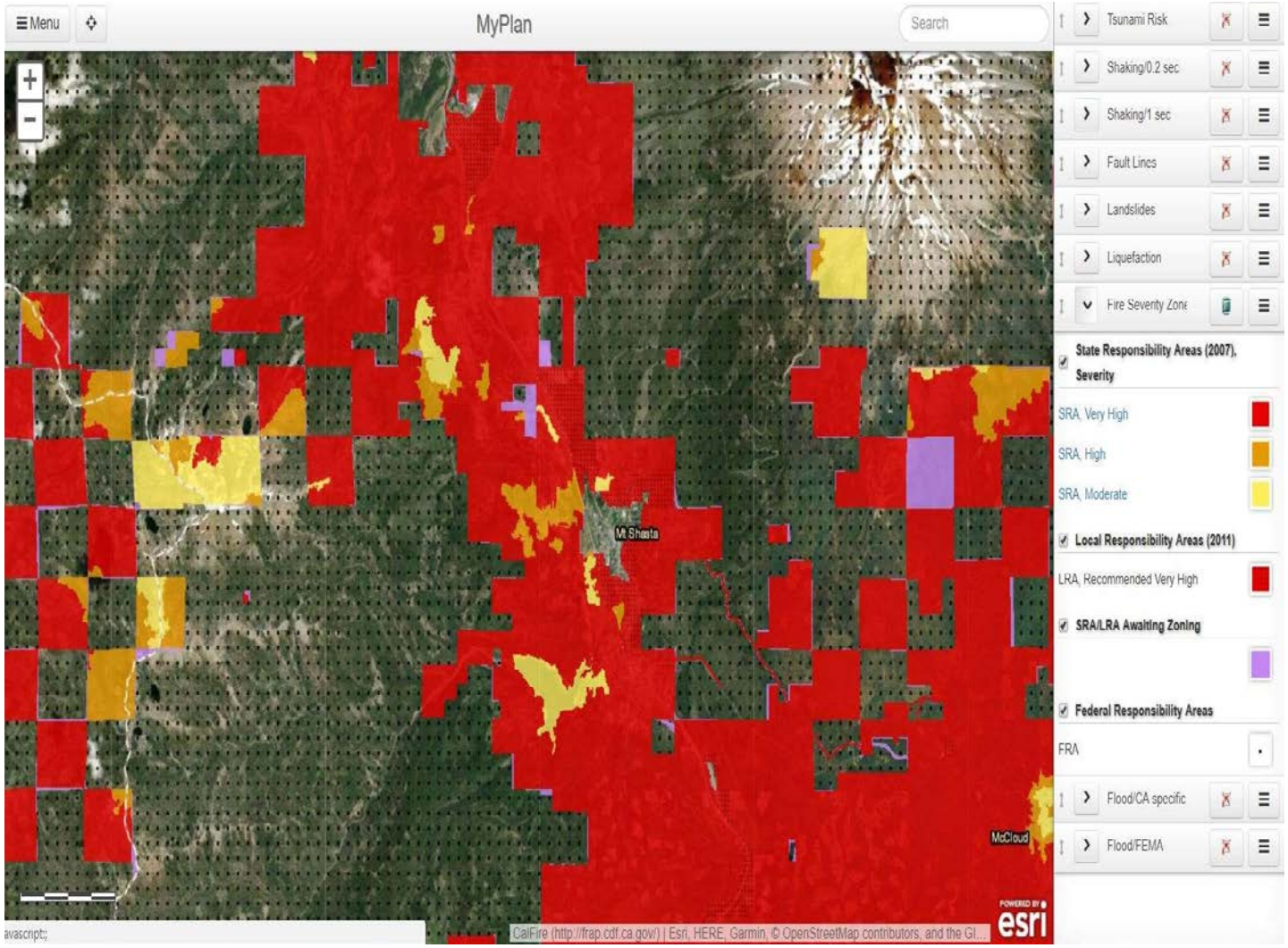
Federal Railroad Administration, Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings, Federal Register, Vol. 70, No. 80, April 27, 2005.

Miller, C. Dan, Potential Hazards from Future Eruptions in the Vicinity of Mount Shasta Volcano (Northern California: U.S. Geological Survey, Bulletin 1503, 1980), 43 p.

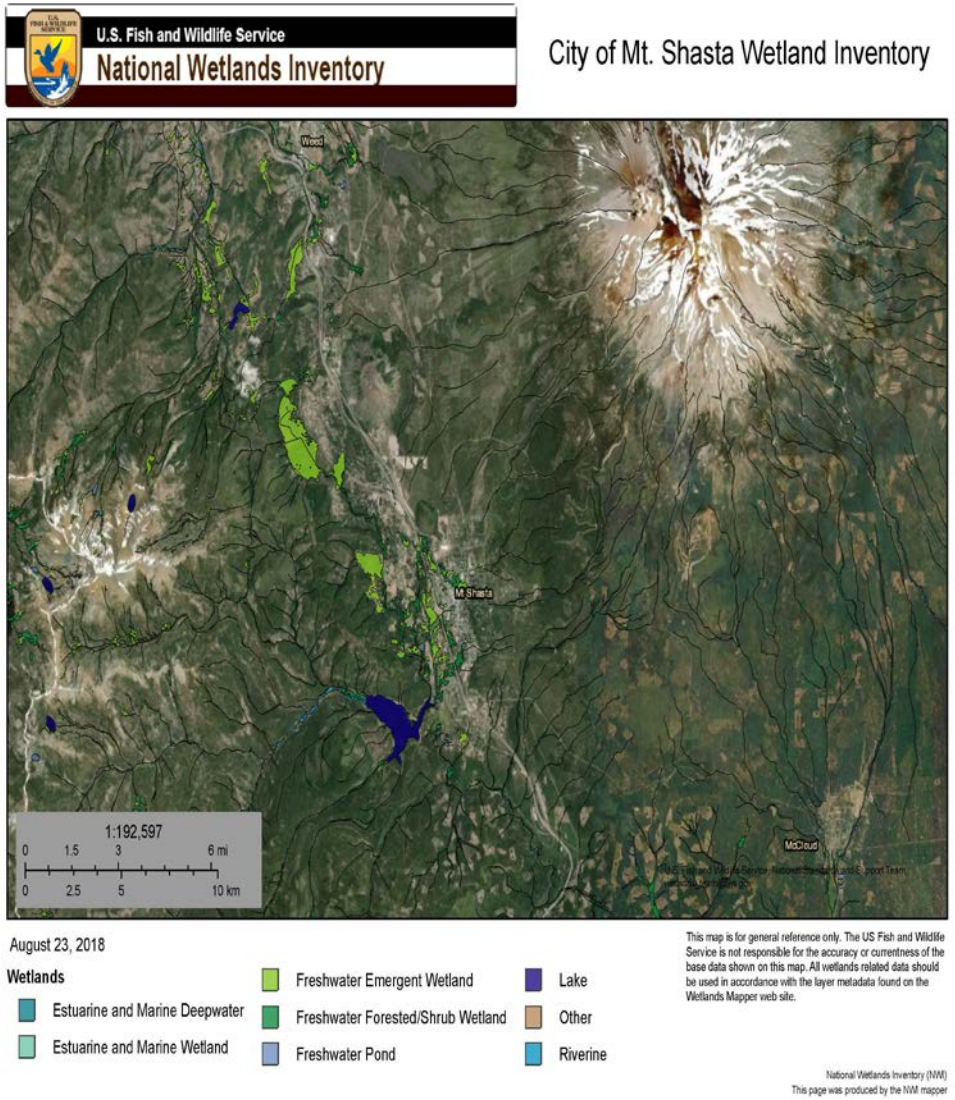
Mt. Shasta Area Fire Safe Council, Mt. Shasta Area Community Wildfire Protection Plan, June 2006.

Siskiyou County. General Plan Land Use Element, August 1980.

# Appendix F: City of Mt. Shasta Wildfire Severity Zones



# Appendix G: City of Mt. Shasta Wetland Inventory



# Appendix H: Mt. Shasta Local Hazard Mitigation Strategy

# 2018 Update

**Goal 1: Develop and improve communications with the general public, public safety agencies, and community leaders concerning hazard mitigation, preparedness, and disaster recovery**

| Objective | Action | Action Type | Priority Level | Action Lead | Funding Source | Completion Timeframe |
|---|---|---|---|---|---|---|
| Develop a universal communication strategy | Develop and maintain emergency preparedness guides for evacuations | Local Plan and Regulations | High | City Manager | City General Fund, Ford Foundation | Less than 1 year |
| | Create a central webpage for hazard and evacuation information and materials | Education and Awareness Programs | High | City Manager | City General Fund, Ford Foundation | Less than 1 year |
| | Ensure all staff are properly trained in Incident Command System (ICS) communication techniques | Education and Awareness Programs | High | City Manager | City General Fund, Ford Foundation | Less than 1 year |
| | Develop multi-lingual emergency preparedness and evacuation materials that cater to residents and visitors | Education and Awareness Programs | High | City Manager | City General Fund, Ford Foundation | 1 to 3 years |
| | Develop hazard specific education and mitigation materials | Education and Awareness Programs | Medium | City Manager | City General Fund, Ford Foundation | 1 to 3 years |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Establish a process to coordinate with local, regional, state, and Federal agencies to maintain up-to-date hazard data, maps, and assessments | General | Medium | Planning Department | City General Fund, Ford Foundation | 1 to 3 years |
| Increase hazard education and risk awareness | Develop a "Hazard Awareness Month/Week" in coordination with media to promote hazard awareness | Education and Awareness Programs | Low | City Manager | City General Fund, Ford Foundation | 1 to 3 years |
| | Schedule an annual hazard mitigation brief for wildfire awareness | Education and Awareness Programs | Low | Fire Department | City General Fund, Ford Foundation | Less than 1 year |
| | Enhance hazard awareness of the private sector, specifically in the housing sector | Education and Awareness Programs | Low | Planning Department | City General Fund, Ford Foundation | 1 to 3 years |
| | Develop and share information related to local hazard vulnerability with housing and business sector | Education and Awareness Programs | Low | Planning Department | City General Fund, Ford Foundation | 1 to 3 years |

**Goal 1: Develop and improve communications with the general public, public safety agencies, and community leaders concerning hazard mitigation, preparedness, and disaster recovery**

| Objective | Action | Action Type | Priority Level | Action Lead | Funding Source | Completion Timeframe |
|---|---|---|---|---|---|---|
| Increase hazard education and risk awareness | Educate the public on tradeoffs associated with multi-hazard design | Education and Awareness Programs | Low | Planning Department | City General Fund, Ford Foundation | 1 to 3 years |
| | Establish a technical assistance program for residents to access data or resources for mitigation purposes | Education and Awareness Programs | Low | Planning Department | City General Fund, Ford Foundation | 3 to 5 years |

**Goal 2: Increase community capability to mitigate and recover from hazards**

| Objective | Action | Action Type | Priority Level | Action Lead | Funding Source | Completion Timeframe |
|---|---|---|---|---|---|---|
| Improve community data to assess vulnerability and level of risk | Obtain local data on parcel, building footprints, critical facility locations to improve risk analysis | Local Plan and Regulations | High | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |
| | Develop and maintain a database to track community vulnerability | Local Plan and Regulations | High | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |
| | Develop and keep aerial photography current, especially post disaster | Local Plan and Regulations | Medium | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Develop a coordinated GIS database to track permitting, land use patterns, hazard areas, etc. | Local Plan and Regulations | Medium | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |
| Increase financial stability of the community | Identify strategies to increase consistent, sufficient funding for hazard mitigation and recovery projects | General | High | Finance Department | City General Fund | Less than 1 year |
| | Develop a list of private, nonprofit, and government funding sources for hazard mitigation and recovery | General | High | Planning Department | City General Fund | Less than 1 year |

**Goal 2: Increase community capability to mitigate and recover from hazards**

| Objective | Action | Action Type | Priority Level | Action Lead | Funding Source | Completion Timeframe |
|---|---|---|---|---|---|---|
| Increase financial stability of the community | Integrate hazards into Capital Improvements Plan | Local Plan and Regulations | Medium | Planning Department | Pre Disaster Mitigation Program, City General Fund | Less than 1 year |
| | Provide tax disincentives for developing in high hazard areas | Local Plan and Regulations | Medium | Planning Department | City General Fund | 3 to 5 years |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Develop tax abatement, public subsidies, and other incentives to encourage private mitigation practices | Local Plan and Regulations | Medium | Finance Department | FEMA Individuals and Households Program, City General Fund | 3 to 5 years |
| | Encourage infill development through tax incentives, streamlined approval process, etc. | Local Plan and Regulations | Medium | Planning Department | City General Fund | Less than 1 year |
| Incentivize private hazard mitigation efforts | Utilize outreach programs to advise homeowners of risks to life, health, and safety, and facilitate technical assistance programs that address measures that residents can take | Education and Awareness Programs | Low | Planning Department | City General Fund | 1 to 3 years |
| | Establish, maintain, and promote a library section on hazard mitigation techniques for local residents | Education and Awareness Programs | Low | Planning Department | City General Fund | 1 to 3 years |

| | | | | | | |
|---|---|---|---|---|---|---|
| | and businesses | | | | | |
| | Develop and offer hazard susceptibility audits of local small businesses | Education and Awareness Programs | Low | City Manager | City General Fund | 1 to 3 years |
| | Complete and showcase a demonstration model showing the use of mitigation techniques for public display | Structure and Infrastructure Projects | Low | Public Works Department | Hazard Mitigation Grant Program, Pre Disaster Mitigation Program, FEMA Individuals and Households Program | 3 to 5 years |
| Increase reliability of evacuation and transportation routes | Inventory and assess condition of transportation routes and alternative routes | Local Plan and Regulations | High | Planning Department | Pre Disaster Mitigation Program | Less than 1 year |
| | Establish and maintain communication with transportation agencies concerning current and future road improvement projects | Local Plan and Regulations | High | Public Works Department | City General Fund | 1 to 3 years |

| Goal 2: Increase community capability to mitigate and recover from hazards | | | | | | |
|---|---|---|---|---|---|---|
| **Objective** | **Action** | **Action Type** | **Priority Level** | **Action Lead** | **Funding Source** | **Completion Timeframe** |
| Increase reliability of evacuation and transportation routes | Identify, prioritize, and improve infrastructure improvement projects to improve transportation routes | Structure and Infrastructure Projects | High | Public Works Department | Hazard Mitigation Grant Program, Pre Disaster Mitigation Program | 1 to 3 years |
| | Identify and develop green infrastructure improvements to existing and future roadway projects | Structure and Infrastructure Projects | High | Public Works Department | Hazard Mitigation Grant Program, Pre Disaster Mitigation Program | 1 to 3 years |
| **Goal 3: Reduce and eliminate the exposure of development to area hazards** | | | | | | |
| **Objective** | **Action** | **Action Type** | **Priority Level** | **Action Lead** | **Funding Source** | **Completion Timeframe** |
| | Develop land use regulations and mechanisms to reduce development in wetlands, high wildfire severity zones, and areas prone to heavy winter storms. | Local Plan and Regulations | Medium | Planning Department | City General Fund | Less than 1 year |
| | Develop additional building standards for development in flooding, wildfire, and seismic prone areas | Local Plan and Regulations | Medium | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |

| | | | | | | |
|---|---|---|---|---|---|---|
| Create and enforce development regulations to reduce development in hazard areas | Identify and eliminate development in areas experiencing high rebuilding rates from hazards | Structure and Infrastructure Projects | Low | Planning Department | Pre Disaster Mitigation Program, California Disaster Assistance Program, FEMA Individuals and Households Program | 1 to 3 years |
| | Develop internal policies and regulations to protect and restore wetland areas to absorb hazard impacts | Natural Systems Protection | Low | Planning Department | City General Fund | Less than 1 year |
| Improve critical infrastructure to maintain critical services during and post-disaster | Identify infrastructure vulnerable to hazards | Structure and Infrastructure Projects | High | Planning Department | Pre Disaster Mitigation Program | Less than 1 year |
| | Develop underground standards for utilities | Local Plan and Regulations | High | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |
| | Require undergrounding of new utility infrastructure, when physically possible | Local Plan and Regulations | High | Planning Department | Pre Disaster Mitigation Program | 1 to 3 years |
| | Underground existing utilities, whenever physically possible | Structure and Infrastructure Projects | High | Public Works Department | Hazard Mitigation Grant Program, Pre Disaster Mitigation Program | 3 to 5 years |

| Goal 3: Reduce and eliminate the exposure of development to area hazards | | | | | | |
|---|---|---|---|---|---|---|
| **Objective** | **Action** | **Action Type** | **Priority Level** | **Action Lead** | **Funding Source** | **Completion Timeframe** |
| Improve critical infrastructure to maintain critical services during and post-disaster | Work with private utility providers to ensure system redundancy | Structure and Infrastructure Projects | Medium | City Manager | City General Fund | 1 to 3 years |
| Integrate natural systems to improve infrastructure resiliency to hazards | Develop green infrastructure standards for future infrastructure projects | Structure and Infrastructure Projects | High | Public Works Department | Hazard Mitigation Grant Program, Pre | 1 to 3 years |
| | Restore stream and wetland habitat | Natural Systems Protection | Medium | City Manager | Hazard Mitigation Grant Program, Pre Disaster Mitigation Program | 1 to 3 years |
| | Develop green infrastructure standards for commercial development | Structure and Infrastructure Projects | Low | Planning Department | Hazard Mitigation Grant Program, Pre Disaster Mitigation | 1 to 3 years |

| Previous Mitigation Plan Assessment | |
|---|---|
| Action | Achieved |
| Equip Police and Fire centers with reliable emergency power | Yes |
| Identify and implement alternate power sources | No |
| Undergrounding of utilties | No |
| Trim back trees form power lines | Yes |
| Improve existing fire hydrants and water supplies | Yes |
| Consider becoming a "Firewise" community | No |
| Maintain mutial aid agreements | Yes |
| Encourage use of fire-resistant materials and creaiton of defensible space | Yes |
| Encourage performance based design | No |
| Support detailed lahar and ash fall studies | No |
| Consider partificaotion in the Community Rating System program | No |
| Maintain compliance and good standing under the NFIP | No |
| Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures form future damage, with repetitive loss and severe loss properties as priority | No |
| Support County-wide inititatives identified in Volume I of the Plan | Yes |
| Continue to support the implementation, monitoring, maintenance, and updating of this Plan as identified in Volume I | No |

# CHAPTER 7.
# CITY OF TULELAKE ANNEX

## 7.1. HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**

Brett Nystrom, Director of Public Works

PO Box 847

Tulelake, CA 96134

Telephone: 541-810-1915

e-mail Address: tulelakepublicworks@cot.net

**Alternate Point of Contact**

Tony Ross, Chief of Police

PO Box 400

Tulelake, CA 96134

Telephone: 530-667-5284

e-mail Address: Tross@tulepd.com

## 7.2. JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

**Date of Incorporation:** March 1, 1937

**Current Population:** 1,010 as of the 2010 Census

**Population Growth:** Based on the U.S. Census Bureau numbers from 2000 to 2010 the population of the City of Tulelake has remained stable in population with less than a 1% fluctuation in population over a ten-year period with the population decreasing from 1,020 to 1,010. According to the California Cities Demographics Statistics, the population has fluctuated from 1,004 to 991, a less than 2% decrease, from 2011 to 2016.

**Location and Description:** The City of Tulelake lies four miles southeast of the Oregon border along State Highway Route 139. The City is 28 miles southeast of Klamath Falls, Oregon and 147 miles northeast of Redding, California.

**Brief History:** The City of Tulelake is the result of the Newlands Reclamation Act of 1902. The purpose of the Act was to "reclaim" arid land through construction of federal irrigation projects and reservoirs to provide water for agriculture. Through the Newlands Reclamation Act, the process began to reclaim land by draining swamps, marshes and lakes within the Klamath and Tule Lake Basins by the U.S. Bureau of Reclamation called the "Klamath Project".

The Klamath Project involved the partial drainage and/or construction of three lakes, two major rivers and a network of man-made canals between the 1905 and 1948. As a result, the Tule Lake Basin reclaimed over 13,000 acres of which 80 and 160-acre parcels were awarded to qualified veteran homesteaders through a government land lottery. Developed and built by these "Veteran Homesteader's", the City of Tulelake provides business and public services for farming families and travelers. Agriculture and tourism are the City of Tulelake's main economic resource today.

**Climate:** Tulelake's climate is classified as a steppe climate**.** Annual precipitation is approximately 10 to 15 inches per year. The surrounding forest and mountain precipitation ranges from 15 to 20 inches per year. Fluctuations in climate are from warm, dry summers to cold, severe winters. Temperatures can range from 100˚F in the summer to -35˚F in winter. Average annual rainfall is 10.89 inches; average annual snowfall is 21/1 inches. The average maximum temperature for Tulelake is 62˚F, with the average annual minimum temperature being 31.4˚F.

**Governing Body Format:** The City of Tulelake, governed by an elected five-member Council, from which the Mayor and Mayor Pro Tem is appointed. The City consists of three departments: Administration, Police and Public Works.

**Development Trends:** Anticipated development trends for the City of Tulelake are moderate consisting of economic and residential development. There has been a significant amount of infrastructure development done within the past five years for water, sewer, streets and sidewalks. These improvements will allow the city to encourage economic development of new businesses as well as increase the capacity for new and renovated housing. There is a current demand for more housing and business services due to an increase in the job market with new types of agricultural industries moving to the Klamath and Tule Lake Basins.

## 7.3. JURISDICTION-SPECIAL NATURAL HAZARD EVENT HISTORY

Table 7-1 list all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: 0
- Number of Repetitive Floods Loss Properties that have been mitigated: 0

## 7.4. HAZARD RISK RANKING

Table 7-2 presents the ranking of the hazards of concern.

## 7.5. CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table7-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 7-4. The assessment of the jurisdiction's fiscal capabilities is presented in table 7-5. Classifications under various community mitigation programs are presented in Table 7-6.

## 7.6. HAZARD MITINGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 7-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 7-8 identifies the priority for each initiative. Table 7-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

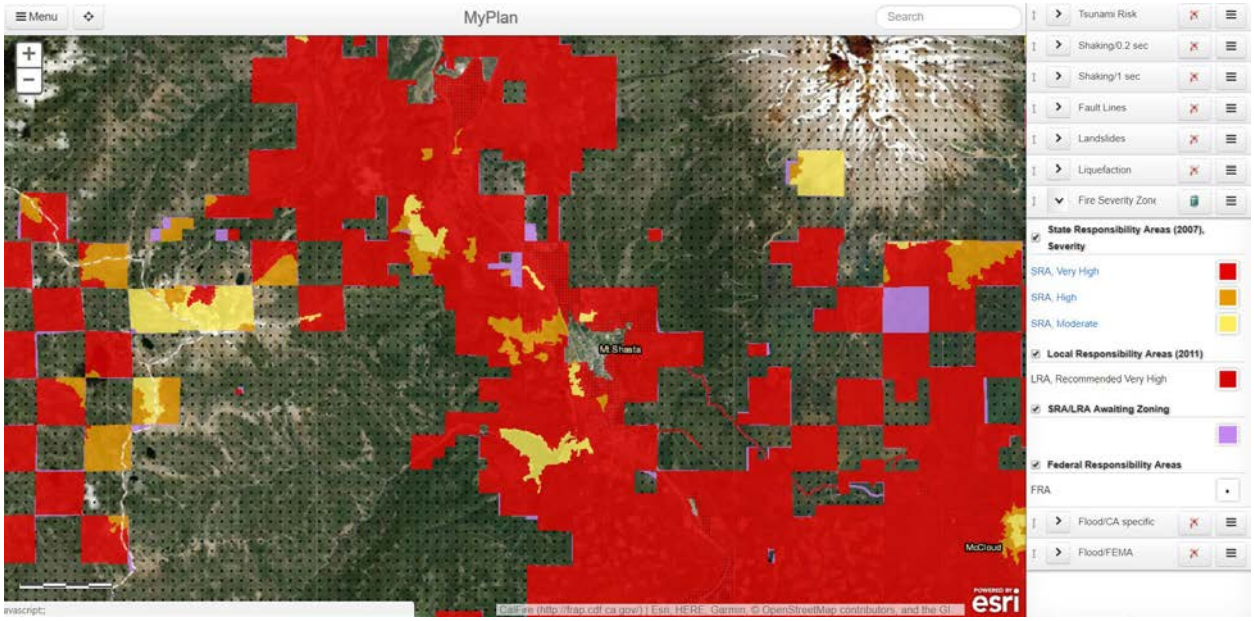
The City General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

### *National Flood Insurance Program*

The City of Tulelake does not participate in the National Flood Insurance Program.

## 7.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY




The City of Tulelake would like to be able to better identify risk and vulnerability through the scientific study of issues related to earthquakes, severe weather and drought. The City could pursue collaborating with state and federal agencies to address these needs.

## 7.8. ADDITIONAL COMMENTS

The City of Tulelake has ongoing and historical incidences of severe weather events, drought and earthquakes. The City experienced significant damage to buildings and infrastructure during the 1993 earthquake. This required the demolition of several unreinforced block buildings and other older buildings that were not up to earthquake code. Tulelake also has extreme weather events from high winds and storms causing damage to buildings. Today there are still many older buildings that are now not in use that are subject to hazards from storm or earthquake related events. The other event that continually seems to plague the City is extreme droughts. Over the past 8 years, Tulelake experienced droughts in 2010, 2014 and 2015. Droughts severely affect the economy within the City of Tulelake, as a large number of the City residents are dependent upon the surrounding agriculture industry.

Another pending hazard is the possibility of a train derailment within the City limits that could be carrying hazardous materials, damage nearby buildings and hurt residents. The Union Pacific Railroad is within the east side of the City limit and is adjacent to a very busy State Highway Route 139. A train derailment occurred along the main street railroad crossing several years ago which resulted in the railroad crossing being closed to traffic for several months thus impeding Tulelake's main entrance to the City and affecting them economically. An actual train derailment simulation was conducted in 2013 using the example of a hazardous spill of chlorine. At the simulation, experts recommended that the City of Tulelake notify the Siskiyou County Office of Emergency Services if the derailment involved a hazardous mitigation. Due to the remote location where Tulelake is located within Siskiyou County, Tulelake is in a remote area of Siskiyou County and the nearest hazmat unit would potentially by two hours away located in Yreka, California.

## 7.9. HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Tulelake are included at the end of this chapter. These maps based on the best available data at the time of the preparation of this plan are considered adequate for planning purposes.

**TABLE-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Drought | 2015 | $77.537 decrease om water/tax revenues |
| Severe Weather | 2007 | $38,500 in tree removal and roof repairs |
| Drought | 2001 | $62,500 decrease in water/tax revenues |
| Earthquake | 1993 | $364,281 infrastructure repair and replacement; building demolition, replacement and repairs. |

**TABLE-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Drought | 54 |
| 2 | Severe Weather | 42 |
| 3 | Earthquake | 48 |
| 4 | Train Derailment | 24 |
| 5 | Wildfire | 14 |
| 6 | Volcano | 15 |
| 7 | Dam Failure | 4 |

**TABLE-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 8 | Flood | 3 |
| 9 | Landslide | 3 |

**TABLE-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | Tulelake Municipal Code, Title 17, Sec. 15.04.010 |
| Zonings | Y | N | N | Y | Tulelake Municipal Code, Title 17, Sec. 15.04.010 |
| Subdivisions | Y | N | N | N | Tulelake Municipal Code, Title 17, Sec. 15.04.010 |
| Stormwater Management | Y | Y | N | Y | Managed by Public Works, SB 790 Stormwater Resources Act |
| Post Disaster Recovery | N | N | N | N | —- |
| Real Estate Disclosure | Y | N | Y | Y | California Civil Code 1102 |
| Growth Management | Y | N | N | N | |
| Site Plan Review | Y | N | Y | N | County Code |
| Special Purpose (flood management, critical areas) | Y | N | N | N | |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | Currently being updated as necessary |
| Floodplain or Basin Plan | N | N | N | N | |
| Stormwater Plan | Y | N | N | Y | Managed by Public Works, SB 790 Stormwater Resources Act |
| Capital Improvement Plan | Y | N | N | N | Currently being updated as necessary |
| Habitat Conservation Plan | N | N | N | N | —- |
| Economic Development Plan | Y | N | N | N | |
| Emergency Response Plan | Y | N | N | N | Currently being updated as necessary |
| Shoreline Management Plan | N | N | N | N | —- |
| Post Disaster Recovery Plan | N | N | N | N | —- |

**TABLE-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | Project Engineer (PE), Director of Public Works (PW), City Hall Administrator (CHA), Building Inspector (BI) |
| Engineers or professionals trained in building or infrastructure construction practices | Y | Project Engineer (PE), Building Inspector (BI), Director of Public Works (PW) |
| Planners or engineers with an understanding of natural hazards | Y | Project Engineer (PE), Building Inspector (BI), Director of Public Works (PW) |
| Staff with training in benefit/cost analysis | Y | City Hall Administrator (CHA)/Finance Director (FD) |
| Floodplain manager | N | Project Engineer (PE)/Director of Public Works (PW) |
| Surveyors | Y | Project Engineer (PE) |
| Personnel skilled or trained in GIS applications | Y | Project Engineer (PE) |
| Scientist familiar with natural hazards in local area | N | Other County and Federal Agencies (OCFA) |
| Emergency manager | Y | Office of Emergency Services Manager (SCOES) |
| Grant writers | Y | Project Grant Consultant (GC) |

**TABLE-5.**
**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Y |
| Capital Improvements Project Funding | Y |
| Authority to Levy Taxes for Specific Purposes | Y, vote required |
| User Fees for Water, Sewer, Gas or Electric Service | Y |
| Incur Debt through General Obligation Bonds | Y |
| Incur Debt through Special Tax Bonds | Y, vote required |
| Incur Debt through Private Activity Bonds | Y, vote required |
| Withhold Public Expenditures in Hazard-Prone Areas | N |
| State Sponsored Grant Programs | Y |
| Development Impact Fees for Homebuyers or Developers | N |
| Other | Y |

**TABLE-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | N | N/A | N/A |
| Building Code Effectiveness Grading Schedule | Y | Unknown | Unknown |
| Public Protection | Y | 3 | Unknown |
| Storm Ready | N | N/A | N/A |
| Firewise | N | N/A | N/A |

**TABLE-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #T-1—**Demolition of Clyde Hotel, a two story structure that is collapsing in on itself. | | | | | | | |
| Existing | Earthquake, Severe Weather, Fire | 1,2,3,6,7,8 | City, BI, PW, TMCFD | $500,000 | HMGP, EPA,USDA & State of CA Grants | Long term | Ongoing |
| **Initiative #T-2—**Renovation of City Hall to become code compliant for community meetings upstairs. | | | | | | | |
| Existing | Earthquake, Severe Weather, Fire | 1,2,3,4,5,6,7,8, 9 | City, BI, PE, PW | $580,000 | HMGP, State of CA & USDA Grants | Long term | Ongoing |
| **Initiative #T-3—**Renovation of Public Works shop to become code compliant for employee safety. | | | | | | | |
| Existing | Earthquake, Severe Weather, Fire | 1,2,3,4,6,7,9 | City, BI, PE, PW | $350,000 | HMGP, EPA, State of CA & USDA Grants | Long term | Ongoing |
| **Initiative #T-4—**Require engineered plan sets for retrofitting unreinforced masonry and soft story buildings. | | | | | | | |
| Existing | Earthquake, Severe Weather, Fire | 1,2,3,4,6,7,8 | City, BI, PE, PW | $55,000 | HMGP, EPA, State of CA, TFFF & USDA Grants | Long term | Ongoing |
| **Initiative #T-5—**Create a city wide Emergency Preparedness Plan for natural and/or manmade disasters. | | | | | | | |
| New | All | 1,2,3,4,5,7,8,9 | City, PD, TMCFD | $2,000 | PDM Grant | Short term | Ongoing |
| **Initiative #T-6-**Create evacuation maps with “routes” and “safe zones” to direct City residents during hazard. | | | | | | | |
| New | All | 1,4,5,7,8 | PD, TMCFD, City | $3,000 | PDM Grant | Short term | Ongoing |

**TABLE-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #T-7—**Create a city wide Post Disaster Mitigation Plan. | | | | | | | |
| New | All | 1,2,3,4,6,7,8, | PD, TMCFD, City | $3,000 | PDM Grant | Short term | Ongoing |
| **Initiative #T-8**—Reinforce and/or replace liners for existing or new sewer ponds to avoid a public health risk. | | | | | | | |
| New & Existing | Earthquake, Severe Weather, Flood, Landslide | 1,2,3,4,6, | City, BI, PW, PE | $3,000,000 | HMGP & EPA Grants | Long term | Ongoing |
| **Initiative #T-9—**Reinforce, repair and/or replace City above ground water storage tower and below ground tanks. | | | | | | | |
| New & Existing | Earthquake, Sever Weather, Fire | 1,2,3,4,6 | City, BI, PW, PE | $3,500,000 | HMGP, CDBG, EPA & USDA Grants | Long term | Ongoing |
| **Initiative #T-10—**Repair or replace Well House #1 and #3 and Booster Station from a natural or manmade disaster. | | | | | | | |
| New & Existing | Earthquake, Severe Weather, Fire | 1,2,3,4,6, | City | $1,500,000 | HMGP, CDBG,EPA & USDA Grants | Long Term | Ongoing |
| **Initiative #T-11—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority. | | | | | | | |
| New and Existing | All | 1,2,3,4,5,6,7, 8,9 | City, BI, PW, PE | $100,000 to $5,000,000 | HMGP, CDBG, EPA & USDA Grants | Long Term | Ongoing |
| **Initiative #T-12—**Prepare and plan for backup water supplies and storage. | | | | | | | |
| New and Existing | All | 1,2,3,4,5,6,7, 8,9 | City, BI, PW, PE, TMCFD | $300,000 to $500,000 | PDM Grant | Short Term | Ongoing |
| **Initiative #T-13-**Repair or replace water and sewer lines, laterals, backflows and meters. | | | | | | | |
| New and Existing | All | 1,2,3,4,6 | City, BI, PW, PE, TMCFD | $2,500,000 to $7,000,000 | HMGP, CDBG, EPA & USDA Grants | Long Term | Ongoing |
| **Initiative #T-14—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1. | | | | | | | |
| New and Existing | All | 1,2,3,4,5,6,7, 8,9 | City, PW, PD | $2,500 | PDM Grant | Short Term | Ongoing |

**TABLE-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| T-1 | 6 | High | High | Yes | Yes | No | High |
| T-2 | 9 | High | High | Yes | Yes | No | High |
| T-3 | 7 | High | Medium | Yes | Yes | No | High |
| T-4 | 7 | High | Medium | Yes | Yes | No | High |
| T-5 | 8 | High | Low | Yes | Yes | No | High |
| T-6 | 5 | High | Low | Yes | Yes | No | High |
| T-7 | 7 | High | Low | Yes | Yes | No | High |
| T-8 | 5 | High | High | Yes | Yes | No | High |
| T-9 | 5 | High | High | Yes | Yes | No | High |
| T-10 | 5 | High | High | Yes | Yes | No | High |
| T-11 | 9 | High | Med-High | Yes | Yes | No | Medium |
| T-12 | 9 | High | Medium | Yes | Yes | No | High |
| T-13 | 5 | High | High | Yes | Yes | No | High |
| T-14 | 9 | Med | Low | Yes | Yes | Yes | Medium |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE -9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| Hazard Type | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | 5, 6, 7, 8, 9, 10, 12, 14 | 8, 11, 13 | 5, 6, 7 | 11 | 5, 6 7 | 1, 2, 3, 4, 8, 9, 10, 11, 12 13 |
| Drought | 5, 6, 7, 9, 10, 12, 14 | 8, 9, 10, 12, 13 | 5, 6, 7 | 11 | 5, 6, 7 | 12 |
| Earthquake | 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 | 1, 2, 3, 4, 8, 9, 10, 11, 12, 13 | 5, 6, 7 | 11 | 5, 6 7 | 1, 2, 3, 4, 8, 9, 10, 11, 12 13 |
| Flood | 5, 6, 7, 8, 9, 10, 12, 13, 14 | 1, 2, 3, 8, 9, 10, 12, 13 | 5, 6, 7 | 11 | 5, 6, 7 | 1, 2, 3, 4, 8, 9, 10, 11, 12 13 |
| Landslide | 5, 6, 7, 8, 14 | 8, 11, 12, 13 | 5, 6, 7 | 11 | 5, 6, 7 | 8, 11, 12, 13 |
| Severe Weather | 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 | 1, 2, 3, 4, 8, 9, 10, 11, 12, 13 | 5, 6, 7 | 11 | 5, 6, 7 | 1, 2, 3, 4, 8, 9, 10, 11, 12 13 |
| Train Derailment | 5, 6, 7, 11, 14 | 9, 10, 11, 12, 13 | 5, 6, 7 | 11 | 5, 6, 7 | 9, 10, 11, 12, 13 |
| Volcano | 1, 2, 3, 4, 8, 9, 10, 11, 12, 13, 14 | 1, 2, 3, 4, 8, 9, 10, 11, 12, 13 | 5, 6, 7 | | 5, 6, 7 | 1, 2, 3, 4, 8, 9, 10, 11, 12, 13 |
| Wildfire | 5, 6, 7, 9, 10, 11, 12, 14 | 12 | 5, 6, 7 | | 5, 6, 7 | 9, 10, 11, 12 |

a. See Section 1.3 for description of mitigation types

**TABLE -10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |

# CHAPTER 8.
# CITY OF WEED ANNEX

## 8.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**

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Weed, CA 96094

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## 8.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

**Date of Incorporation—**January 25, 1961

**Current Population—**2,750 as of 2016 (2016 American Community Survey U.S. Census)

**Population Growth—**The City's population decreased by 9.2 percent between 2010 and 2016, due to the Boles Fire, a wildland fire that destroyed 157 single family residences and 8 nonresidential commercial properties in the City of Weed. The City's population is expected to hold relatively steady or increase slightly for the duration of the current planning period. (ref: City of Weed Housing Element)

**Location and Description—**Weed is a city located at 41°25'27" North, 122°23'4" West (41.424298, -122.384417) in Siskiyou County, just 49 miles south of the California–Oregon border at the junction of Interstate 5 and U.S. Route 97. California State Route 265 also runs through the City, locally known as North Weed Boulevard. Only two blocks long, it is one of the shortest state highways in California. Weed is about 10 miles west-northwest of Mount Shasta, a prominent northern California landmark, and the second tallest volcano in the Cascade Range. The city has a total area of 4.8 square miles.

**Brief History—**The City of Weed gets its name from the founder of the local lumber mill and pioneer Abner Weed, who discovered that the area's strong winds were helpful in drying lumber. In 1897, Abner Weed bought the Siskiyou Lumber and Mercantile Mill and 280 acres of land in what is now the City of Weed, for $400. By the 1940s, Weed boasted the world's largest sawmill. From its founding in 1901, to as late as the 1980s, Weed was home to a thriving lumber industry. The timber industry declined since the 1950s. Increased regulation led to diminished profits and massive layoffs of mill workers, beginning in earnest by the 1970s. Automation of remaining consolidated milling operations and competition from other timber markets outside the nation hastened the decline in the number of jobs available in logging and related industries. The challenges resulting from this economic and resulting social upheaval were significant in the lives of many Siskiyou County residents. The local

timber industry still figures prominently in the local and state economy, though in diminished form from the past.

On September 15th, 2014, a fast-moving wildfire called the "Boles Fire" spread through the City of Weed. The fire, fueled by 40-mph winds, spread within minutes and much of the town suffered major damage. Ultimately the fire tore through three neighborhoods, causing a 16% loss in the city's single-family housing stock. Beyond housing, the fire took its toll om major infrastructure, including the Roseburg Mill, Catholic Church, Presbyterian Church, and parts of the elementary and high schools. The City of Weed's water and sewer systems received major damage from the fire. As CAL FIRE stated, "It took 120 minutes to destroy 150 structures". The result: California's Governor, Edmund G. Brown, declared the Boles fire in the City of Weed a disaster.

The fire started behind the Boles Creek Apartments in the central part of Weed. Final tallies indicated that 157 single family residences and 8 nonresidential commercial properties, 4 single family residences damaged and 3 nonresidential commercial properties damaged along with 516 acres of land. More than 2,000 citizens had to evacuate, many with little or no warning. Pacific Power announced that 7,678 customers in the communities of Weed and Mt. Shasta lost power because of the fire. Fortunately, there were no fatalities, although three individuals were injured.

**Climate—**Weed's climate is mild during summer, when temperatures tend to be in the 60s, and very cold during winter, when temperatures tend to be in the 30s. The warmest month of the year is August, with an average maximum temperature of 85ºF. The coldest month of the year is January, with an average minimum temperature of 24ºF. Temperature variations between night and day tend to be relatively big during summer, with a difference that can reach 37ºF, and moderate during winter, with an average difference of 21ºF. The annual average precipitation is 26 inches of rain; annual average snowfall is 19 inches. The number of days with any measurable precipitation is 78. On average, there are 229 sunny days per year in Weed.

**Governing Body Format—**The City of Weed has a Council-Manager form of government. The City Council is the legislative body of the City government and is composed of five Council Members elected for overlapping four-year terms. The City Council is responsible for formulating policies for the municipal corporation and approving major actions of key administrative officials, by whom the operating activities are carried out. The Council Members choose one of their own to serve as Mayor for a one-year term. The Mayor presides over meetings of the Council and votes as a member of the Council, but has no veto power. The Mayor, as a representative of the citizens, represents the City government in all official and ceremonial matters.

The Council appoints a City Manager to administer City policy, coordinate the departments of the municipal government, and represent the City in its relations with the public and other governmental jurisdictions.

**Development Trends—**The anticipated development level for Weed is low to moderate, consisting primarily of residential and commercial development. The residential will be infill and in the south Weed area, with commercial also in south Weed.

## 8.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 8-1 lists all past occurrences of natural hazards in the county. Repetitive loss records are as follows:

Number of FEMA Identified Repetitive Flood Loss Properties: 5

Number of Repetitive Flood Loss Properties that have been mitigated: 1

## 8.4 HAZARD RISK RANKING

Table 8-2 presents the ranking of the hazards of concern.

## 8.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table 8-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table 8-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table 8-5. Classifications under various community mitigation programs are presented in Table 8-6.

## 8.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 8-7**Error! Reference source not found.** lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 8-8 identifies the priority for each initiative. Table 8-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The City General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

### *National Flood Insurance Program*

The City of Weed does participate in the National Flood Insurance Program (NFIP) that provides federally backed flood insurance in exchange for communities enacting floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act. The County and most of the partner cities for this plan participate in the NFIP and have adopted regulations that meet the NFIP requirements. At the time of the preparation of this plan, all participating jurisdictions in the partnership were in good standing with NFIP requirements.

## 8.7 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Weed are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 8-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Wildland Fire | 09/15/2014 | 48 Million |
| Severe Winter Storms | 03/08/2010 | Estimates unavailable |
| Fire | 2008 | Estimates unavailable |
| Severe Storms | 02/03/2006 | Estimates unavailable |
| Severe Storm | 02/03/1993 | Estimates unavailable |
| Flooding | 2/ /1978 | Estimates unavailable |
| Severe Storms | 01/25/1974 | Estimates unavailable |

**TABLE 8-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Wildfire | 48 |
| 2 | Severe Weather | 39 |
| 3 | Flood | 36 |
| 4 | Railroad Traffic | 18 |
| 5 | Drought | 16 |
| 6 | Landslide | 6 |
| 7 | Earthquake | 6 |
| 8 | Volcano | 3 |

**TABLE 8-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | Y | N | N | Y | Title 24, UBC, UFC |
| Zonings | Y | N | N | Y | Title 18 WMC, 1963 |
| Subdivisions | Y | N | N | Y | Title 17 WMC, 1963 |
| Stormwater Management | Y | N | N | N | Budget, 2017 |
| Post Disaster Recovery | N | N | N | N | |
| Real Estate Disclosure | Y | N | N | Y | CA. Civil Code 1102 |
| Growth Management | Y | N | N | Y | City of Weed General Plan |
| Site Plan Review | Y | N | N | N | Title 18, WMC, 1963 |
| Special Purpose (flood management, critical areas) | N | N | N | N | |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | General Plan Update 2017 |
| Floodplain or Basin Plan | N | N | N | N | |
| Stormwater Plan | Y | N | N | N | Adopted 2003 |
| Capital Improvement Plan | Y | N | N | N | Budget, 2018 |
| Habitat Conservation Plan | Y | N | N | Y | General Plan 2017 |
| Economic Development Plan | N | N | N | N | |
| Emergency Response Plan | N | N | N | N | |
| Shoreline Management Plan | N | N | N | N | |
| Post Disaster Recovery Plan | Y | Y | Y | Y | City of Weed Resilience Plan 2016 |

**TABLE 8-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | No | On contract |
| Engineers or professionals trained in building or infrastructure construction practices | No | On contract |
| Planners or engineers with an understanding of natural hazards | No | On contract |
| Staff with training in benefit/cost analysis | No | |
| Floodplain manager | Yes | Public Works Director/City of Weed |
| Surveyors | No | |
| Personnel skilled or trained in GIS applications | Yes | City Manager, Fire, Police/City of Weed |
| Scientist familiar with natural hazards in local area | No | |
| Emergency manager | Yes | City Manager, Fire Chief, Police Chief |
| Grant writers | Yes | City Administrator, Finance, Fire, Police |

**TABLE 8-5.**
**FISCAL CAP**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Yes |
| Capital Improvements Project Funding | Yes |
| Authority to Levy Taxes for Specific Purposes | Yes |
| User Fees for Water, Sewer, Gas or Electric Service | Yes |
| Incur Debt through General Obligation Bonds | Yes |
| Incur Debt through Special Tax Bonds | No |
| Incur Debt through Private Activity Bonds | No |
| Withhold Public Expenditures in Hazard-Prone Areas | Yes |
| State Sponsored Grant Programs | Yes |
| Development Impact Fees for Homebuyers or Developers | Yes |

**TABLE 8-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | Yes | 3 | 2014 |
| Building Code Effectiveness Grading Schedule | Yes | Unknown | Unknown |
| Public Protection | Yes | Unknown | Unknown |
| Storm Ready | No | N/A | N/A |
| Firewise | No | N/A | N/A |

**TABLE 8-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline |
|---|---|---|---|---|---|---|
| **Initiative #—W-01** Establish New Fire Station South Weed | | | | | | |
| Existing | All | 1, 4, 8 | City of Weed | 5,000,000 High | City, Grants | Short |
| **Initiative #—W-02** Boles Creek Main Street Mitigation | | | | | | |
| Existing | Flood | 1, 2, 6 | City of Weed | 600,000 High | CDBG, HMPG | Short |
| **Initiative #—W-03** Substitute Spring Water Source with Well | | | | | | |
| Existing | Fire | 1, 2, 4, 7 | City of Weed | 1,000,000 High | Grants – FEMA-Water Fund | Short |
| **Initiative #—W-04** Backup Generators for Utilities | | | | | | |
| Existing | All | 1, 2, 4 | City of Weed | 100,000 High | Grants – FEMA-Water Fund | 50 percent complete |
| **Initiative #—W-05** City Wide Fuel Reduction Projects | | | | | | |
| New | Fire | 1, 2, 4 | City of Weed | 250,000 High | City, Grants | Long |
| **Initiative #—W-06** Retrofit Bel Air Water Tank | | | | | | |
| Existing | Fire | 1, 2, 4 | City of Weed | 450,000 High | Grants - CDBG | Completed 2017 |
| **Initiative #—W-07** Improve Highway 97 culvert | | | | | | |
| New | Flood | 1, 2, 6 | State of California | 800,000 High | State | Long |
| **Initiative #—W-08** School House Hill Water Storage | | | | | | |
| New | Fire | 1, 2, 4 | City of Weed | 1,000,000 High | Grants - FEMA | Completed 2016 |
| **Initiative #W-09—**Consider participation in the Community Rating System (CRS) program | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Initiative #W-10—**Continue to maintain compliance and good standing in the National Flood Insurance Program (NFIP) | | | | | | | |
| New and Existing | | Floods | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term |
| **Initiative #W-11—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority | | | | | | | |
| New and Existing | | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | High | City, FEMA Mitigation Grants | Long Term |
| **Initiative #W-12—**Support County-wide initiatives identified in Volume 1 of this Plan | | | | | | | |
| New and Existing | | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term |
| **Initiative #W-13—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1 | | | | | | | |
| New and Existing | | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City, FEMA Mitigation Grants | Short Term |

**TABLE 8-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| W-01 | 3 | High | High | Yes | Yes | No | High |
| W-02 | 3 | Medium | High | No | Yes | No | Low |
| W-03 | 4 | High | High | Yes | Yes | No | High |
| W-04 | 3 | High | High | Yes | Yes | No | High |
| W-05 | 3 | High | High | Yes | Yes | No | High |
| W-06 | 3 | High | High | Yes | Yes | No | High |
| W-07 | 3 | High | High | Yes | Yes | No | High |
| W-08 | 3 | High | High | Yes | Yes | No | High |
| W-09 | 9 | Med | Low | Yes | No | Yes | Med |
| W-10 | 9 | Low | Low | Yes | No | Yes | High |
| W-11 | 9 | High | High | Yes | Yes | No | High |
| W-12 | 9 | Med | Low | Yes | No | Yes | High |
| W-13 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 8-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | 12, 13 | 11 | 12, 13 | | 4, 5, 7 | |
| Drought | 12, 13 | 11 | 12, 13 | | 4, 5, 7 | |
| Earthquake | 12, 13 | 11 | 12, 13 | | 3, 4, 5, 7 | 3 |
| Flood | 9, 10, 12, 13 | 9, 10, 11 | 9, 10, 12, 13 | 1, 2, 9, 10 | 4, 5, 7, 9, 10 | 1, 2, 9, 10 |
| Landslide | 12, 13 | 11 | 12, 13 | | 4, 5, 7 | |
| Severe Weather | 12, 13 | 11 | 12, 13 | | 4, 5, 7 | |
| Volcano | 12, 13 | 11 | 12, 13 | | 4, 5, 7 | |
| Wildfire | 12, 13 | 6, 8, 11 | 12, 13 | | 4, 5, 6, 7, 8 | 6, 8 |

a. See Section 1.3 for description of mitigation types

**TABLE 8-10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |
| Joint Community Hmong Preparedness Meetings for evacuations |
| |

# CHAPTER 9.
# CITY OF YREKA ANNEX

## 9.1 HAZARD MITIGATION PLAN POINT OF CONTACT


**Primary Point of Contact**

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e-mail Address: casson@ci.yreka.ca.us


## 9.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

**Date of Incorporation—**April 21, 1857

**Current Population—**7777 as of January 1, 2017 (Calif. Dept. of Finance)

**Population Growth—**The City has experienced low to moderate growth, averaging approximately 1 percent.

**Location and Description—**The City of Yreka is the county seat and largest city in Siskiyou County. Yreka is 320 miles north of San Francisco and 22 miles south of the Oregon border. It covers approximately 10 square miles at an elevation of 2,600 feet. Interstate 5, the primary north-south highway through Northern California, bisects the city. Most of the city's residential and general commercial development, including the downtown area, is west of Interstate 5. Most of the land zoned for industrial development is east of Interstate 5.

**Brief History—**Yreka's historical roots reach back to the California gold rush, beginning with a gold discovery in 1851. Thousands of prospectors flocked to the area, and a town of tents and shanties quickly developed near the present downtown area. The first house—a log cabin—was built that year, along with the first business: a saloon. Yreka, pronounced "Wy-re-ka", is a Shasta Indian word meaning "North Mountain," a reference to nearby Mt. Shasta. Yreka became the county seat of Siskiyou County, one of the largest counties in California.

**Climate—**Yreka's climate is Mediterranean: warm during summer with high temperatures in the 90s, and very cold during winter with high temperatures in the 30s. The warmest month of the year is July, with an average maximum temperature of 90ºF. The coldest month of the year is January, with an average minimum temperature of 23ºF. Temperature variations between night and day tend to be big during summer, with a difference that can reach 40ºF, and moderate during winter, with an average difference of 24ºF. The annual average precipitation at Yreka is 19.66 inches. Rainfall is fairly evenly distributed throughout the year. The wettest month of the year is January, with an average rainfall of 3.19 inches.

**Governing Body Format—**The City is governed by a City Council and uses a Council-Manager governing format. The City has one standing committee, the Planning Commission. There

are six departments: Planning, Building, Public Works, Finance, Police and Administration. Legal services are provided by contract. The City is served by a semi-independent volunteer Fire Department with its own governing board.

**Development Trends—**The City has experienced low to moderate growth, averaging approximately 1 percent. The General Plan was initially adopted in 1979 and was updated in 2003. The City is in transition from a raw materials economy to a services and manufacturing economy and has been since the late 1980s. When the General Plan was updated in 2005, of the more than 1,000 acres of land designated for industrial land use in the City, 363 acres were considered "developed" and 674 acres were recognized as "underdeveloped."

**Road Access**—The existing streets are generally in good condition, with adequate width and sufficient structural strength to support occasional large equipment and fire trucks. Some street routes may have limited turn-around capacity and limited width. Areas with these limitations are generally located in the northwest quadrant of the city. Circulation patterns are generally good, with three parallel north-south transportation corridors (Interstate 5, Main St/SR 3, Oregon St). There are numerous east-west connections, with primary routes at Moonlit Oaks (south), Tebbe Street (north), and Miner Street (central). Connections between the east and west sides of the City are limited to four streets: Moonlit Oaks (south), Oberlin Road (central), Foothill Drive/Miner Street (central), and Tebbe Street/SR 3 (north).

**Water—**The City's primary water supply is piped approximately 23 miles from Fall Creek at Iron Gate Reservoir. The City's primary supply line generally follows the Yreka-Ager Road and Foothill Drive alignments into town. The City has one backup well, used for emergency supply, which has recently been upgraded and when used historically has required the issuance of a "boil water" order.

The City maintains numerous water storage tanks with enough capacity to serve residents for 24 hours during summer peak use. Most areas have a looped water line system capable of providing water even in the event of neighborhood disruption or shutoff. Some areas, especially near booster pump stations, experience very high water pressure, over 100 psi. These high pressure zones are generally west of Fairchild Street, near Evergreen school, north Main Street, and near the Fairgrounds.

**Floodplain—**Yreka Creek flows south to north through the center of the city, and flood hazard areas along the Creek have been identified. The 100-year floodplain impacts a significant portion of town. The City is in the process of making improvements to areas along the creek to remove more properties from the floodplain.

## 9.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

**TABLE 1** lists past occurrences of natural hazards in the county. Repetitive loss records are as follows:

Number of FEMA Identified Repetitive Flood Loss Properties: 0 (Several properties appear to be at risk of repetitive flood loss, but to date they have not been designated as such.)

Number of Repetitive Flood Loss Properties that have been mitigated: 0

## 9.4 HAZARD RISK RANKING

**TABLE 2** presents the ranking of the hazards of concern.

## 9.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in **TABLE 3**. The assessment of the jurisdiction's administrative and technical capabilities is presented in **TABLE 4**. The assessment of the jurisdiction's fiscal capabilities is presented in **TABLE 5**. Classifications under various community mitigation programs are presented in **TABLE 6**.

## 9.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

**TABLE 7** lists the initiatives that make up the jurisdiction's hazard mitigation plan. **TABLE 8** identifies the priority for each initiative. **TABLE 9** summarizes the mitigation initiatives by hazard of concern and the six mitigation types. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

Part of the revision process is surveying the public about topics that are important to them and how they see the City changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the City. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the City and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The City General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the City will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

### *National Flood Insurance Program*

The City of Yreka does participate in the National Flood Insurance Program (NFIP) that provides federally backed flood insurance in exchange for communities enacting floodplain regulations. Participation and good standing under NFIP are prerequisites to grant funding eligibility under the Robert T. Stafford Act. The County and most of the partner cities for this plan participate in the NFIP and have adopted regulations that meet the NFIP requirements. At the time of the preparation of this plan, all participating jurisdictions in the partnership were in good standing with NFIP requirements.

## 9.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

The City is situated between mountain passes that are subject to severe winter weather and occasional road closures. Interstate 5, the main transportation arterial, has numerous bridges that are vulnerable to damage from flood, earthquake and similar hazards. The City must maintain its 23 miles of primary water supply pipeline, which also crosses the Klamath River beneath Iron Gate Reservoir. The City would be particularly vulnerable to multiple hazards occurring at the same time, such as an earthquake that damaged access routes and severe weather precluding the ability to access critical supply systems.

## 9.8 ADDITIONAL COMMENTS

The City of Yreka's downtown and commercial core is bisected by Yreka Creek. A recent flood value analysis estimates that $126 million dollars in improvements is at risk from a 100-year flood event.

## 9.9 HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps for the City of Yreka are included at the end of this chapter. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes.

**TABLE 1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Flood DR-1628 | 12/30/06—1/1/2007 | Public ~$ 1 million, Private—unknown |

**TABLE 2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Wildfire | 42 |
| 2 | Severe Weather | 42 |
| 3 | Flood | 27 |
| 4 | Drought | 21 |
| 5 | Earthquake | 16 |
| 6 | Volcanic Disturbance | 14 |
| 7 | Dam Failure | 9 |
| 8 | Landslide | 0 |

**TABLE 3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| Building Code | Y | N | N | Y | CA Building Code, Title 11, YMC, 2015 |
| Zonings | Y | N | N | Y | Title 16, YMC, 2004 |
| Subdivisions | Y | N | N | N | Title 15, YMC 1983 |
| Stormwater Management | Y | N | N | N | Title 11.25 YMC, 2009 |
| Post Disaster Recovery | N | N | N | N | |
| Real Estate Disclosure | Y | N | N | Y | CA Civil Code 1102 |
| Growth Management | Y | N | N | Y | City of Yreka General Plan (2003) |
| Site Plan Review | Y | | | | |
| Special Purpose (flood management, critical areas) | Y | N | N | N | Title 11.34, YMC 1999 |
| **Planning Documents** | | | | | |
| General or Comprehensive Plan | Y | N | N | Y | 12/18/2003, Resolution 2457 |
| Floodplain or Basin Plan | N | Y | N | Y | NCRWQCB Basin Plan |
| | Y | N | Y | Y | Yreka Creek Master Plan |
| Stormwater Plan | Y | Y | N | Y | Proposed NPDES Phase II Small MS4 |
| Capital Improvement Plan | Y | N | N | N | 5/10-year CIP for water, wastewater, drainage and roads. Updated annually |
| Habitat Conservation Plan | N | N | N | N | |
| Economic Development Plan | Y | N | N | N | |
| Emergency Response Plan | Y | N | N | N | Greenhorn Reservoir Dam Response Plan |
| Shoreline Management Plan | N | N | N | N | n/a |
| Post Disaster Recovery Plan | N | N | N | N | |

**TABLE 4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | Director of Public Works, Project Engineer, Planning Director, Management Analyst |
| Engineers or professionals trained in building or infrastructure construction practices | Y | Building Official, Director of Public Works, Project Engineer |
| Planners or engineers with an understanding of natural hazards | Y | Building Official, Director of Public Works, Project Engineer, Management Analyst |
| Staff with training in benefit/cost analysis | Y | Finance Director, Director of Public Works, Project Engineer, Management Analyst |
| Floodplain manager | Y | Building Official, Management Analyst |
| Surveyors | N | |
| Personnel skilled or trained in GIS applications | N | Public Works Director, GIS coordinator, Maintenance Manager, Water Manager |
| Scientist familiar with natural hazards in local area | N | Contract only |
| Emergency manager | Y | Police Chief, City Manager |
| Grant writers | Y | Finance Director, Management Analyst, Grants and Project Analyst |

**TABLE 5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | Y |
| Capital Improvements Project Funding | Y |
| Authority to Levy Taxes for Specific Purposes | Y, vote required |
| User Fees for Water, Sewer, Gas or Electric Service | Y |
| Incur Debt through General Obligation Bonds | Y, vote required |
| Incur Debt through Special Tax Bonds | Y, vote required |
| Incur Debt through Private Activity Bonds | Y, vote required |
| Withhold Public Expenditures in Hazard-Prone Areas | Unknown |
| State Sponsored Grant Programs | Y |
| Development Impact Fees for Homebuyers or Developers | Y |

**TABLE 6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | N | N/A | N/A |
| Building Code Effectiveness Grading Schedule | Y | Unknown | Unknown |
| Public Protection | Y | 3 | ISO 5/24/2016 |
| Storm Ready | N | N/A | N/A |
| Firewise | N | N/A | N/A |

**TABLE 7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost[a] | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #Y 1—**Identify primary evacuation routes and "safe zone" collection points where people can gather. | | | | | | | |
| Existing | All | 1,2,4,5,8,9 | Fire Safe Councils, Fire & Police Dept. | $10,000 estimate (for map preparation, printing, distribution) | FSC grants | | 1-2 years |
| **Initiative #Y 2—**Communicate the Emergency Preparedness Manual to staff, the public and key partners. | | | | | | | |
| Existing | All | 1,4,5,8,9 | City Police | $1000, estimate (copying) | General Fund | | 1 year |
| **Initiative #Y 3—**Encourage Community Emergency Response Teams (CERTs) to provide neighborhood coordination and points of contact in an emergency. | | | | | | | |
| Existing | All | 1,4,5,8,9 | FSCs, Individuals | Unknown | Grants | | 1-2 years |
| **Initiative #Y 4—**Purchase additional generators both in the community, for critical operations, and to provide backups for the City's water and wastewater operations. | | | | | | | |
| Existing | All, with potential to disrupt power | 1,4,9 | City, individuals | $250,000 | Grants | | 1-5 years |
| **Initiative #Y 5—**Assess unreinforced masonry buildings. Develop plan to address/mitigate. | | | | | | | |
| Existing | Earthquake | 1,2,3,6,7 | Individuals | $10,000+/each (estimate) | FEMA Mitigation Grants | | 5-10 years |
| **Initiative #Y 6—**Encourage individual homeowners to stock fire gel kits. | | | | | | | |
| Existing | Fire | 5 | FSC, Fire Dept. | $2500-$5000/per property | Individual | | 1-5 years |

**TABLE 7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost[a] | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| | **Initiative #Y 7—**Assess critical public buildings and mitigate damage potential. | | | | | | |
| existing | Earthquake, fire, flood | 1,2,3,6,7 | City Building, County | $10,000 estimated for assessment, mitigation costs depends on what is found | FEMA Mitigation Grant | 2-5 years | Ongoing |
| | **Initiative #Y 8—**Stockpile emergency replacement parts and supplies that may be difficult to obtain, such as face masks, fuel filters, air filters, snowmelt chemicals, sand, sandbags, etc. | | | | | | |
| Existing | Fire, volcano, flood | 1,4,5 | City Public Works | $5000 | Budget | 1-5 years | Ongoing |
| | **Initiative #Y 9—**Identify any repetitive flood loss properties. Relocate or reconfigure property to minimize flood exposure. | | | | | | |
| Both | Flood, severe weather, dam failure | 6 | City | $ 5 million + | FEMA HMP, DWR, other | 10+ years | Ongoing |
| | **Initiative #Y 10—**Acquire and preserve floodplain as open space/greenbelt. | | | | | | |
| Both | Flood, severe weather, dam failure | 3,6 | City | $38 million | FEMA HMP, DWR, parks, other | 20+ years | Ongoing |
| | **Initiative #Y 11—**Reduce fuel loads in highest fire severity zones. Encourage individuals to establish defensible space. Require annual fuel and weed reduction to minimize fire spread. | | | | | | |
| Both | Fire | 1, 8 | Individuals, Fire Safe Council | $1,000-10,000 per property | Ins. Co., Fire Safe Council, USFS | | Current Project working on |
| | **Initiative #Y 11—**Fully implement improvements and upgrades recommended in Master Plan of Drainage. | | | | | | |
| Both | Flood, severe weather | 1,3 | City | $20 million | FEMA, DWR, CDBG | 10-15 years | Ongoing |
| | **Initiative #Y 12—**Develop self-contained communication (i.e. radio backups that are not dependent on power, outside lines, towers, etc.). Develop community emergency notification system (i.e. reverse 911). | | | | | | |
| Both | Fire, earthquake, flood | 1,4,8,9 | City Police and Public Works, Co. EOC. | $250,000 | Grants | 5 years | Partially completed |
| | **Initiative #Y 13—**Develop additional backup water supplies and storage. | | | | | | |
| New | Earthquake, drought, fire, flood | 1,4 | City | $25 million + | USDA, FEMA, CDBG | 10-15 years | Ongoing |
| | **Initiative #Y 14—**Develop/modernize the Emergency Operations Center at Police Department. | | | | | | |
| New | All | 1,2,4,9 | City | $ 2-5 million, estimate | USDA, CDBG, FEMA, | 5-10 years | Completed |

**TABLE 7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost[a] | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative #Y 15—**Develop/increase awareness of Evacuation Centers. Develop a plan to obtain from the private sector several weeks' worth of emergency food and water supplies for people and pets. | | | | | | | |
| n/a | Fire, flood, severe weather, earthquake | 1,5,8 | Red Cross | $25,000 | FEMA, private | 1-2 years | Ongoing |
| **Initiative #Y 16—**Develop alternate transport mechanism to enable remote access (e.g. to Fall Creek water source) when roads and bridges are impassable (e.g. a shared use or chartered helicopter) | | | | | | | |
| New | Fire, flood, severe weather, earthquake | 1,4,9 | City, stakeholders | High | Unknown | Long term | Ongoing |
| **Initiative #Y 17—**Develop access to additional emergency heavy equipment resources: backhoes, dump truck, loaders, water truck, fire truck, snow blowers, plows. | | | | | | | |
| New | Fire, flood, earthquake, severe weather | 1,4,9 | City | High | FEMA reimbursement if declared emergency | 1-2 years | Ongoing |
| **Initiative #Y 18—**Consider participation in the Community Rating System (CRS) program. | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6, 7,8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #Y 19—**Continue to maintain compliance and good standing in the National Flood Insurance Program (NFIP). | | | | | | | |
| New and Existing | Floods | 1,2,3,4,5,6, 7,8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #Y 20—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6, 7,8,9 | City | High | City, FEMA Mitigation Grants | Long Term | Ongoing |
| **Initiative #Y 21—**Support County-wide initiatives identified in Volume 1 of this Plan. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6, 7,8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative #Y 22—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1. | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6, 7,8,9 | City | Low | City, FEMA Mitigation Grants | Short Term | Ongoing |

a. Cost estimates are preliminary and need to be refined at the time of project development.

**TABLE 8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| Y 1 | 8 | Med | Low | Yes | Yes | No | Med |
| Y 2 | 8 | Med | Low | Yes | Yes | No | Med |
| Y 3 | 8 | Med | Low | Yes | Yes | No | Low |
| Y 4 | 8 | High | Med | Yes | Yes | No | High |
| Y 5 | 1 | Med | Low | Yes | Yes | No | Med |
| Y 6 | 1 | High | Low | Yes | No | No | Med |
| Y 7 | 3 | High | Med | Yes | Yes | No | Med |
| Y 8 | 3 | High | Low | Yes | No | Yes | High |
| Y 9 | 2 | High | Med | Yes | Yes | No | Med |
| Y 10 | 3 | High | High | Yes | Yes | No | Med |
| Y 11 | 1 | High | Med | Yes | Yes | No | Med |
| Y 12 | 4 | High | Med | Yes | Yes | No | Med |
| Y 13 | 5 | High | High | No | Yes | No | Med |
| Y 14 | 8 | High | High | Yes | Yes | No | High |
| Y 15 | 5 | Med | Low | Yes | No | No | Low |
| Y 16 | 3 | Med | High | No | No | No | Low |
| Y 17 | 4 | High | Low | Yes | No | No | High |
| Y 18 | 9 | Med | Low | Yes | No | Yes | Med |
| Y 19 | 9 | Low | Low | Yes | No | Yes | High |
| Y 20 | 9 | High | High | Yes | Yes | No | High |
| Y 21 | 9 | Med | Low | Yes | No | Yes | High |
| Y 22 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section for definitions of high, medium and low priorities.

**TABLE 9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Avalanche | n/a | n/a | n/a | n/a | n/a | n/a |
| Dam Failure | 1, 2, 21, 22 | 20 | 1, 2, 3, 15, 21, 22 | — | 2, 12 | — |
| Drought | 21, 22 | 13, 20 | 21, 22 | — | 12, 13 | 13 |
| Earthquake | 5 | 5, 7, 20 | 1, 2, 3, 7, 15, 21, 22 | 10 | 7, 12, 13, 14, 16, 17 | 14 |
| Flood | 10, 18, 19, 21, 22 | 4, 9, 10, 18, 19, 20 | 1, 2, 9, 18, 19, 21, 22 | 9, 10, 18, 19 | 4, 8, 16, 17, 18, 19 | 9, 10, 11, 14, 18, 19 |
| Landslide | n/a | n/a | n/a | n/a | n/a | n/a |
| Severe Weather | 21, 22 | 5, 7, 9, 20 | 2, 3, 5, 15, 21, 22 | 10 | 8, 12, 13, 14, 15, 17 | 10, 14 |
| Volcano | 21, 22 | 20 | 8, 12, 15, 21, 22 | — | 4, 8, 12, 13, 16 | 11 |
| Wildfire | 11, 21, 22 | 6, 20 | 6, 12, 15, 21, 22 | — | 4, 6, 12, 13, 14, 16, 17 | 12, 13, 14 |

a. See Section 1.3 for description of mitigation types

**TABLE 10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |
| Joint Community Hmong Preparedness Meetings for evacuations |
| |

# PART 3—
# SPECIAL PURPOSE DISTRICT ANNEXES

# CHAPTER 10.
# LAKE SHASTINA COMMUNITY SERVICES DISTRICT ANNEX

## 10.1 HAZARD MITIGATION PLAN POINT OF CONTACT


**Primary Point of Contact**

Michael Wilson, General Manager
16320 Everhart Dr.
Weed, CA. 96094
Telephone: 530 938-3281
E-mail Address: generalmanager@lakeshastina.com

**Alternate Point of Contact**

Robert Moser, PW Supervisor
16320 Everhart Dr.
Weed, CA. 96094
Telephone: 530 938-3281
E-mail Address: robert@lakeshastina.com


## 10.2 JURISDICTION PROFILE

Lake Shastina Community Services District is a special purpose district created to provide sewer, water, police and fire services to the area around Lake Shastina in Siskiyou County. A five-member elected board of directors governs the District. The Board assumes responsibility for the adoption of this plan; the general manager will oversee its implementation. As of June 2017, the District serves 1,276 water connections and 1,085 sewer connections, with a staff of 10. The Fire Department is a volunteer department of 19 members and a full-time paid chief. The Police Department has 4 sworn officers and a full-time chief. The jurisdiction's boundary is shown on Figure 10-1. The following is a summary of key information about the jurisdiction:

**Population Served—**2,852 as of 12/31/2016

**Land Area Served—**2,200 acres

**Value of Area Served—**The estimated value of the area served by the jurisdiction is $337,000,000

**Land Area Owned—**10.5 acres

**List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**

- 58 miles of water pipeline, 3 water wells, and 4 water storage tanks, 2 booster pump stations.
- 1 Public works yard, equipment, and 10 vehicles
- 79 miles of sewer pipeline, 20 sewer pump stations, 1 wastewater treatment plant
- Building contents and equipment
- 4 fire trucks and contents, 1 rescue rig and contents, 1 fire chief vehicle, 1 pick-up, 24 bunker sets
- 4 Police Vehicles and contents, 1 portable radar trailer, 1 animal control shelter

**Total Value of Critical Infrastructure/Equipment—**The total value of critical infrastructure and equipment owned by the jurisdiction is $5,429,345

**List of Critical Facilities Owned by the Jurisdiction:**

- Administration Building $570,000
- Police and Fire Facility $495,000
- Medical Clinic $500,000
- Public Works Shop Building $100,000

**Total Value of Critical Facilities—**The total value of critical facilities owned by the jurisdiction is $1,665,000

**Current and Anticipated Service Trends—**Current trends of the District show an aging population with static growth of new homes. The Lake Shastina Area is currently 1/3 built out, meaning that 2/3 of the lots are vacant. Should current economic trends change, then so should the anticipated service area.

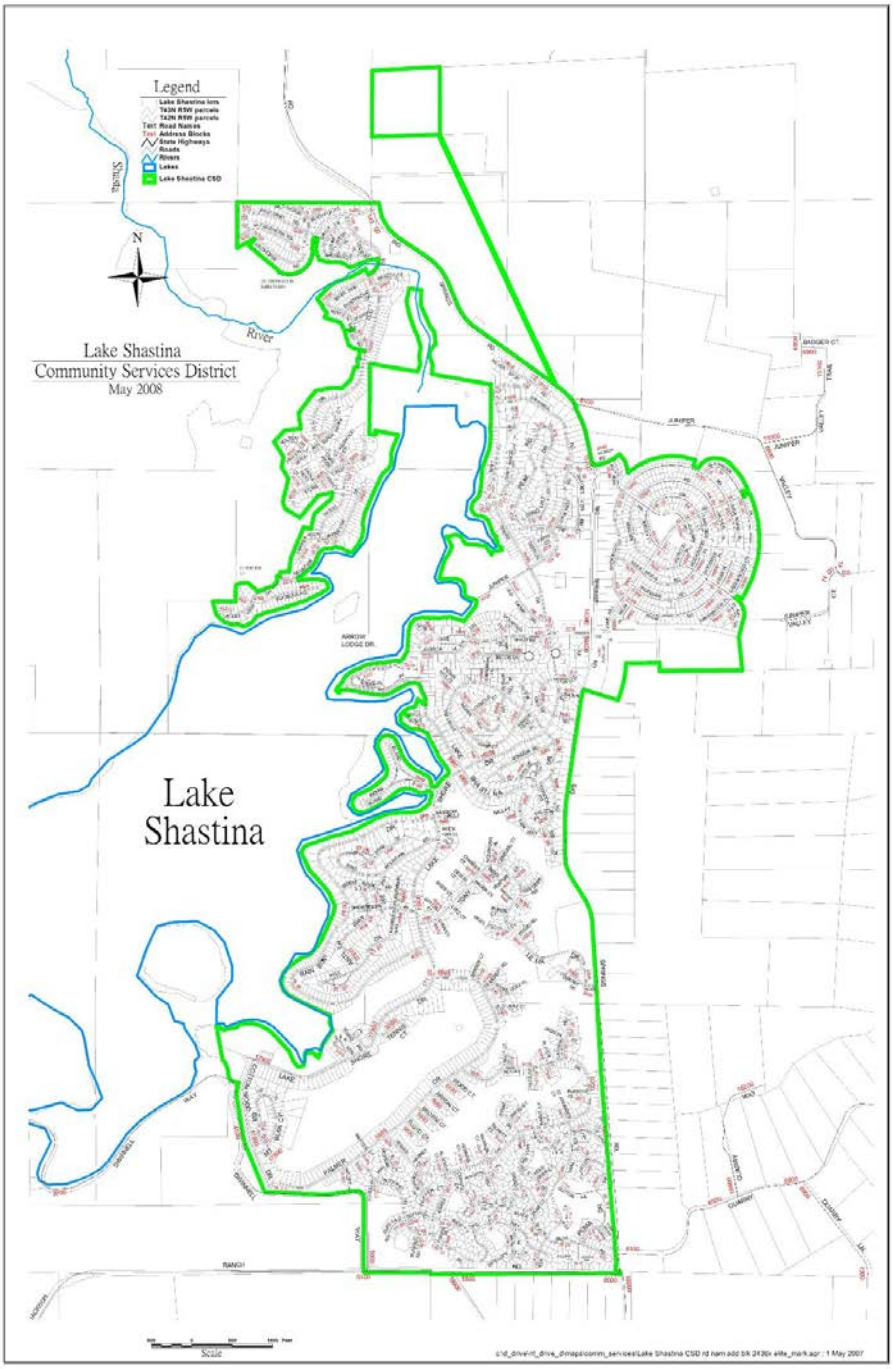


*Figure 10-1. Lake Shastina Community Services District Boundary*

## 10.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

**TABLE 10-1** lists all past occurrences of natural hazards within the jurisdiction.

## 10.4 HAZARD RISK RANKING

**TABLE 10-2** presents the ranking of the hazards of concern.

## 10.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

Greater Lake Shastina Emergency Preparedness Handbook

Greater Lake Shastina Fire Safe Council Community Wildfire Protection Plan

County Land Use Ordinance

Lake Shastina Wildland Fire Evacuation Plan 2003

Lake Shastina CSD Water Ordinance

Lake Shastina CSD Sewer Ordinance

County Building Code, Seismic and Related Codes

National Environmental Protection Act

Federal Endangered Species Act.

## 10.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in **TABLE 10-**. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

## 10.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

**TABLE 10-** lists the initiatives that make up the jurisdiction's hazard mitigation plan. **TABLE 10-** identifies the priority for each initiative. **TABLE 10-** summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

Part of the revision process is surveying the public about topics that are important to them and how they see the CSD will be changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the CSD. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the CSD and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The CSD General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the CSD will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

**TABLE 10-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Severe winter storms, flooding, and mudslides DR-4301 | 2/14/2017 | Estimates unavailable |
| California Boles Fire (FM-5079) | 9/15/2014 | 516 acres, 157 residences and 8 nonresidential buildings |
| Severe winter Storm DR-1884 | 3/8/2010 | Estimates unavailable |
| Fire - Hotlum | 2006 | 3,017 acres burned, damage estimates unavailable |
| Severe winter Storm DR-1628 | 2/3/2006 | Estimates unavailable |
| Fire - Hoy | 2006 | 1283 acres burned ,damage estimates unavailable |
| Fire - Shastina | 1998 | Estimates unavailable |

**TABLE 10-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Wildfire | 51 |
| 2 | Severe Weather | 42 |
| 3 | Earthquake | 26 |
| 4 | Drought | 20 |
| 5 | Flood | 18 |
| 6 | Volcano | 16 |
| 7 | Landslide | 12 |
| 8 | Dam Failure | 10 |

**TABLE 10-3.**
**LEGAL AND REGULATORY CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Zonings | Y | N | N | Y | NA |
| Subdivisions | Y | N | N | N | NA |
| Stormwater Management | N | N | N | ? | NA |
| Growth Management | N | N | N | N | NA |
| **Planning Documents** | | | | | |
| Floodplain or Basin Plan | N | N | N | N | NA |
| Stormwater Plan | N | N | N | ? | Presently being addressed |
| Capital Improvement Plan | N | N | N | N | NA |
| Emergency Response Plan | Y | N | N | Y | Fire and Police updates |

**Table 10-4.**
**Administrative and Technical Capability**
**All of these capabilities may be used for mitigation activities in the future**

| Staff/Personnel Resources | Available for mitigation activities | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | Y | Contract service with engineer and PMC (private planning company) |
| Staff with training in benefit/cost analysis | Y | General Manager |
| Emergency manager | Y | Police Chief |

**TABLE 10-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVITES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? To use for mitigation actions. |
|---|---|
| Capital Improvements Project Funding | Y |
| Authority to Levy Taxes for Specific Purposes | Y |
| User Fees for Water Service | Y |
| State Sponsored Grant Programs | Y |

**TABLE 10-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Public Protection | No | — | — |
| Storm Ready | No | — | — |
| Firewise | No | — | — |

**TABLE 10-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative LS1—**District Police and Fire Seismic Improvements | | | | | | | |
| Existing | All Hazards | 1,2,4,6,8,9 | CSD | $300,000 High | District Funds, FEMA Hazard Mitigation Grants | Short-term | Ongoing |
| **Initiative LS2—**District Water Well Electrical Generator Additions | | | | | | | |
| Existing | All Hazards | 1,2,4 | CSD | $350,000 High | District fund, FEMA Hazard Mitigation Grants | Short-term | Ongoing |
| **Initiative LS3—**District Construction of Emergency Operations Center in conjunction with Police and Fire | | | | | | | |
| New | All Hazards | 1,2,4,5,6,8,9 | CSD | $650,000 High | District fund, FEMA Hazard Mitigation Grants | Long Term | Ongoing |
| **Initiative LS4—**District Fire Engine Upgrade | | | | | | | |
| New | All Hazards | 1,4,8.9 | CSD | $550,000 High | District Funds, FEMA Hazard Mitigation Grants | Short-Term | Ongoing |
| **Initiative LS5—**District Fire Fuels abatement program | | | | | | | |
| Existing | Wildfire | 1,2,3,4,5,7,8 | CSD | $20,000/year High | Homeowners funds, FEMA Hazard Mitigation Grants | Short Term | Some areas completed Ongoing |
| **Initiative LS6—**Protect Lake Shastina as a fire suppression resource | | | | | | | |
| New | Wildfire, Volcano, Dam Failure | 2,5,7,8 | CSD | $5,000/year Medium | District Funds, Homeowner funds | Short Term | Ongoing |

**TABLE 10-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative LS7—**Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | High | City, FEMA Mitigation Grants | Long Term | Ongoing |
| **Initiative LS8—**Support County-wide initiatives identified in Volume 1 of this Plan | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City | Short Term | Ongoing |
| **Initiative LS9—**Continue to support the implementation, monitoring, maintenance and updating of this Plan as identified in Volume 1 | | | | | | | |
| New and Existing | All Hazards | 1,2,3,4,5,6,7, 8,9 | City | Low | City, FEMA Mitigation Grants | Short Term | Ongoing |

**TABLE 10-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative # | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| LS1 | 6 | High | High | Yes | Yes | No | High |
| LS2 | 3 | High | High | Yes | Yes | No | High |
| LS3 | 7 | High | High | Yes | Yes | No | High |
| LS4 | 4 | High | High | Yes | Yes | No | High |
| LS5 | 7 | High | High | Yes | Yes | Yes | Med |
| LS6 | 4 | High | Med | Yes | No | Yes | Med |
| LS7 | 9 | High | High | Yes | Yes | No | High |
| LS8 | 9 | Med | Low | Yes | No | Yes | High |
| LS9 | 9 | Med | Low | Yes | Yes | Yes | High |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 10-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | 3, 8, 9 | 3, 7 | 3, 6, 8, 9 | 6 | 14, 2 | 1, 3 |
| Drought | 8, 9 | 3, 7 | 3, 8, 9 | 6 | 3, 2 | 3 |

**TABLE 10-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Earthquake | 3, 8, 9 | 1, 3, 7 | 3, 8, 9 | 2 | 1, 4, 2 | 1, 3 |
| Flood | 8, 9 | 7 | 3, 8, 9 | | 1, 4 | 1, 3 |
| Landslide | 8, 9 | 1, 3, 7 | 3, 8, 9 | | 1, 4, 2 | 1, 3 |
| Severe Weather | 3, 8, 9 | 1, 3, 7 | 3, 8, 9 | 2 | 1, 4, 2 | 1, 3 |
| Volcano | 3, 8, 9 | 1, 3, 7 | 3, 8, 9 | 6 | 1, 4, 2 | 1 |
| Wildfire | 3, 8, 9 | 3, 7 | 6, 5, 8, 9 | 5, 6 | 14, 2 | 1 |

a. See Section 1.3 for description of mitigation types

**TABLE 10-10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |
| Joint Community Hmong Preparedness Meetings for evacuations |
| |

# CHAPTER 11.
# MCCLOUD COMMUNITY SERVICES DISTRICT ANNEX

## 11.1 HAZARD MITIGATION PLAN POINT OF CONTACT


**Primary Point of Contact**

Kevin Dalton
220 W. Minnesota Ave
McCloud, California 96057
Telephone: 530-964-2017
e-mail Address: Kimberly@ci.mccloudcsd.ca.us

**Alternate Point of Contact**

Amos McAbier
220 W. Minnesota Ave
McCloud, California 96057
Telephone: 530-964-2017
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## 11.2 JURISDICTION PROFILE

The McCloud Community Services District was formed on August 24, 1965 to provide water, sewer, waste, fire, parks and lighting to the unincorporated area in Siskiyou County. A five-member elected Board of Directors governs the District's operations and appoints a General Manager to manage the administrative functions of the District. The Board assumes the responsibility of this plan and the General Manager will oversee its implementation. As of October 1, 2011 the District serves 741 service connections and 633 sewer connections, with a current staff of 7. Funding comes primarily from rates and revenue bonds. The following is a summary of key information about the jurisdiction:

- **Population Served—**The District provides services to 1,101 persons as of March 2010.
- **Land Area Served—** The District service area consists of 1,700 acres or 2.58 square miles.
- **Value of Area Served—**The estimated value of the area served by the jurisdiction is $87,876,118
- **Land Area Owned—**The District has ownership of approximately 80 acres.
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
    - Fire Department—Apparatus and equipment housed in a facility located in a natural hazard risk zone. This is the equipment that is essential for delivery of services to the area should a natural hazard occur. 2-engines, 1- squad vehicle, 1-pumper, 1 ambulance and their contents. Estimated replacement cost $1.5 million
    - Water System—25 miles of transmission and distribution pipeline in various diameters, including appurtenances, chlorination station, welded steel water storage tanks, pressure reducing stations and major maintenance equipment (938 Cat Loader, 6 yd. Dump Truck, John Deere Backhoe, Welder truck, flatbed truck and pickup trucks). Estimated cost $30 million.
    - Sewer System—20 miles of sewer collection system with appurtenances and sewer collection ponds and major equipment (sewer vacuum truck) estimated cost $15 million
- **Total Value of Critical Infrastructure/Equipment—**The total value of critical infrastructure and equipment owned by the jurisdiction is $46.5 million

- **List of Critical Facilities Owned by the Jurisdiction:**
  - Intake Springs Structure—Primary source of water to the community, the structure is a reinforced concrete vault. Estimated Cost of Replacement $250,000.
  - Upper Elk Springs—Primary Source of water supply to the community—the structure is a reinforced concrete vault. Estimated Replacement Cost $200,000.
  - Lower Elk Springs—Secondary Source of water supply for the community—the structure is a wood frame structure with a concrete perimeter base. The spring is a gallery and barrier wall with an outlet structure. Estimated replacement Cost $225,000.
  - Transmission Mains from water sources, diameters of 12-inch, 14-inch and 16-inch Steel and ductile iron pipe. Estimated replacement cost $4.5 million
  - Distribution Mains for the town of McCloud. Estimated Cost of Replacement $18.5 million
  - Fire Hall Structure—Houses Fire fighters and equipment for emergency response Estimated Replacement Cost. $400,000.
  - 1.2 Million gallon welded steel water storage tank. Estimated Replacement Cost $1.5 million.
- **Total Value of Critical Facilities—**The total value of critical facilities owned by the jurisdiction is $25.575 million
- **Current and Anticipated Service Trends—**MCSD has seen a decline in permanent residency. This decline may be the age of the community and the poor economy. Should the economic condition change the possibility of development for commercial and light industry would increase along with new residential development.

## 11.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

**TABLE 11-1** lists all past occurrences of natural hazards within the jurisdiction.

## 11.4 HAZARD RISK RANKING

**TABLE 11-2** presents the ranking of the hazards of concern.

## 11.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Emergency Response, Policy No. 3300

## 11.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in **TABLE 11-6**. Due to the insufficient staff and funding we were not able to integrate information from the 2012 plan in the new plan.

## 11.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

**TABLE 11-** lists the initiatives that make up the jurisdiction's hazard mitigation plan. **TABLE 11-** identifies the priority for each initiative. **TABLE 11-** summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

Part of the revision process is surveying the public about topics that are important to them and how they see the CSD changing in the next 25 years. Similar to the mapping exercise at a workshop, some of the questions are open ended asking about areas and features of concern. Over half of the participants indicated that safety was in the top 3 topic areas of interest. Even more of the participants mentioned flooding, wildfires, or natural disasters as high concerns for the CSD. Other major themes that came out of the survey is the need to preserve the pristine environment surrounding the CSD and the sense of community that is felt in the area.

The information gathered from the survey is integrated into the mitigation strategy of the 2018 update of the LHMP

The CSD General Plan which includes a Safety Element that will continue to collect input from the public. This information will be integrated into the Safety Element which is connected to the LHMP by state statute.

In addition to the General Plan process, the CSD will continually educate and engage the public in natural and man-made disaster planning with annual review of safety by the Planning Commission in a public meeting, publishing disaster related materials for the public, and engaging the public through public forums to address concerns.

## 11.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

A detailed flood plan for Panther, Mud and Squaw Creeks should be re-investigated and a mitigation plan initiated with the necessary funding. This will ease the burden of high premiums for flood insurance, which does nothing for mitigating the situation. A straightforward plan should be realized with the necessary funding to begin flood mitigation to ensure safety for residents of the community of McCloud.

**TABLE 11-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | Date | Preliminary Damage Assessment |
|---|---|---|
| Severe Flood | 7/1/2011 | $3,500 |
| Severe Weather | 3/8/2010 | Estimate Unavailable |
| Severe Flood | 1/4/1997 | Estimate Unavailable |

**TABLE 11-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | Severe winter Weather | 54 |
| 2 | Flood | 54 |
| 3 | Wild Fire | 54 |
| 4 | Earthquake | 36 |
| 5 | Drought | 7 |
| 6 | Land Slide | 30 |
| 7 | Volcano | 18 |

**TABLE 11-3.**
**LEGAL AND REGULATORY CAPABILITY**
**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Stormwater Management | N | N | N | ? | NA |
| Growth Management | N | N | N | N | NA |
| **Planning Documents** | | | | | |
| Floodplain or Basin Plan | N | N | N | N | NA |
| Stormwater Plan | N | N | N | ? | Presently being addressed |
| Capital Improvement Plan | N | N | N | N | NA |
| Emergency Response Plan | Y | N | N | Y | NA |

**TABLE 11-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Staff/Personnel Resources | Available for mitigation activities | Department/Agency/Position |
|---|---|---|
| Staff with training in benefit/cost analysis | Y | General Manager |
| Emergency manager | Y | General Manager |

**TABLE 11-5.**
**FISCAL CAPABILITY**

**ALL OF THESE CAPABILITIES MAY BE USED FOR MITIGATION ACTIVIES IN THE FUTURE**

| Financial Resources | Accessible or Eligible to Use? To use for mitigation actions. |
|---|---|
| Authority to Levy Taxes for Specific Purposes | Y |
| User Fees for Water Service | Y |
| State Sponsored Grant Programs | Y |

**TABLE 11-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Public Protection | No | -- | -- |
| Storm Ready | No | -- | -- |
| Firewise | No | -- | -- |

**TABLE 11-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **MCSD-1 -** Inform and educate the public on hazard mitigation and preparedness via a District operated website. | | | | | | | |
| Existing | All Hazards | 1, 2, 5, 8 | MCSD | $7000<br>Low | General Fund | Short-term | Ongoing |

**TABLE 11-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **MCSD-2—**Relocate District owned critical facilities out of identified high hazard risk zones. | | | | | | | |
| Existing | All Hazards | 1, 2, 4, 6 | MCSD | High | FEMA Hazard Mitigation Grants | Long-term | Ongoing |
| **MCSD-3—**Collect improved data (hydrologic, topographic, geologic, volcanic, historic, etc.) to assess risks and vulnerabilities. | | | | | | | |
| New and Existing | All Hazards | 1, 2, 3, 4, 5, 7 | MCSD | $50,000 High | Grants, General Fund | Short-term | Ongoing |
| **MCSD-4—**Retrofit, rehabilitate, or replace vulnerable water system, storm water, and sewer facilities and infrastructure throughout the District. | | | | | | | |
| Existing | All Hazards | 1, 2, 4, 6 | MCSD | High | FEMA Hazard Mitigation Grants, other grants | Long-term | Ongoing |
| **MCSD-5—**Develop District continuity of operations plan and continuity of government plan. | | | | | | | |
| New | All Hazards | 1, 3, 4, 7 | MCSD | $50,000 Medium | Grants, General Fund | Short-term | Ongoing |
| **MCSD-6—**Design and construct drainage improvements along Panther Creek through the District to address repetitive damage from flooding on the adjacent roads and property. | | | | | | | |
| Existing | Flood | 1, 2, 4 | County, MCSD | $25,000 High | FEMA Hazard Mitigation Grants, other grants | Short-term | Ongoing |
| **MCSD-7—**Continue to maintain compliance with the National Flood Insurance Program. | | | | | | | |
| New and existing | Flood | 1, 2, 3, 7 | MCSD | Low | General Fund | Short-term | Ongoing |
| **MCSD-8**—Integrate goals, objectives, and initiatives of the Siskiyou County Hazard Mitigation Plan into existing district regulations and programs where appropriate. | | | | | | | |
| Existing | All Hazards | 1, 2, 3, 5, 7 | MCSD | Low | General Fund | Short-term | Ongoing |
| **MCSD-9**—Continue to support the implementation, monitoring, maintenance, and updating of this plan. | | | | | | | |
| New and Existing | All Hazards | All | MCSD | Low | General Fund, FEMA Hazard Mitigation Grant for 5-year update | Short-term | Ongoing |
| **MCSD-10**—Support County-wide initiatives identified in Volume 1 of this Plan | | | | | | | |
| New and Existing | All Hazards | 1, 2, 3, 4, 5, 6, 7, 8, 9 | City | Low | District | Short Term | Ongoing |

**TABLE 11-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **MCSD-11**—Where appropriate, support retrofitting, purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe loss properties as priority | | | | | | | |
| New and Existing | All Hazards | 1, 2, 3, 4, 5, 6, 7, 8, 9 | City | High | District, FEMA Mitigation Grants | Long Term | Ongoing |

**TABLE 11-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative | # of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
| MCSD-1 | 4 | Medium | Low | Yes | No | Yes | High |
| MCSD-2 | 4 | High | High | Yes | Yes | No | Low |
| MCSD-3 | 6 | High | High | Yes | No | No | High |
| MCSD-4 | 4 | High | High | Yes | Yes | No | High |
| MCSD-5 | 4 | Medium | Medium | Yes | Yes | Yes | High |
| MCSD-6 | 3 | High | High | Yes | Yes | No | High |
| MCSD-7 | 4 | High | Low | Yes | No | Yes | High |
| MCSD-8 | 4 | High | Low | Yes | Yes | Yes | High |
| MCSD-9 | 9 | High | Low | Yes | Yes | Yes | High |
| MCSD-10 | 9 | High | Low | Yes | No | Yes | High |
| MCSD-11 | 9 | High | High | Yes | Yes | No | Medium |

a. See Section 1.3 for definitions of high, medium and low priorities.

**TABLE 11-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| Hazard Type | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
| Dam Failure | N/A | N/A | N/A | N/A | N/A | N/A |
| Drought | MCSD-1 | MCSD-2, MCSD-7 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-8 | MCSD-4 |
| Earthquake | MCSD-8 | MCSD-7, MCSD-8, MCSD-11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-8 | MCSD-4 |
| Flood | MCSD-5, MCSD-6 | MCSD-2, MCSD-7, MCSD-9, MCSD-11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-2, MCSD-3, MCSD-8 | MCSD-6, MCSD-7 |
| Landslide | MCSD-6, MCSD-8 | MCSD-2, MCSD-7, MCSD-9, MCSD,11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-2, MCSD-3, MCSD-8 | MCSD-6, MCSD-7 |
| Severe Weather | MCSD-8 | MCSD-3, MCSD-9, MCSD-11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1 MCSD-8, MCSD-9 | MCSD-4 |
| Volcano | MCSD-8 | MCSD-3, MCSD-9, MCSD-11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-8, MCSD-9 | MCSD-4 |
| Wildfire | MCSD-8 | MCSD-3, MCSD-9, MCSD-11 | MCSD-1, MCSD-8, MCSD-10 | MCSD-3 | MCSD-1, MCSD-8, MCSD-9 | MCSD-4 |

a. See Section 1.3 for description of mitigation types

**TABLE 11-10.**
**COMMUNITY OUTREACH**

**WILL BE PERROMING THESE OUTREACH EVENTS AND WILL INCLUDE MITIGATION EDJUCATION TO THE PUBLIC.**

| Outreach |
|---|
| Community Meetings Go Bag planning Schools |
| Fire Safe Council Meetings |
| PSA about Emergency Notification System and Testing |
| Use of Facebook and Twitter |
| Joint Community Hmong Preparedness Meetings for evacuations |
| |

Siskiyou County
**Hazard Mitigation Plan**
**Volume 2: Planning Partner Annexes**

# APPENDIX A.
# PLANNING PARTNER EXPECTATIONS

**August 2018**

# APPENDIX A.
# PLANNING PARTNER EXPECTATIONS

Siskiyou County
**Hazard Mitigation Plan**
**Volume 2: Planning Partner Annexes**

# APPENDIX B.
# PROCEDURES FOR LINKING TO THE HAZARD MITIGATION PLAN

**August 2018**

# APPENDIX B.
# PROCEDURES FOR LINKING TO THE HAZARD MITIGATION PLAN

Not all eligible local governments within Siskiyou County are included in the Siskiyou County Hazard Mitigation Plan. It is assumed that some or all of these non-participating local governments may choose to "link" to the Plan at some point to gain eligibility for programs under the federal Disaster Mitigation Act. In addition, some of the current partnership may not continue to meet eligibility requirements due to a lack of participation as prescribed by the plan. The following "linkage" procedures define the requirements established by the Plan's Steering Committee and all planning partners for dealing with an increase or decrease in the number of planning partners linked to this plan. It should be noted that a currently non-participating jurisdiction within the defined planning area is not obligated to link to this plan. These jurisdictions can chose to do their own "complete" plan that addresses all required elements of section 201.6 of 44CFR.

## INCREASING THE PARTNERSHIP THROUGH LINKAGE

The annual time period for the linkage process will be from January to April during any year. Eligible linking jurisdictions are instructed to complete ***all*** of the following procedures during this time frame:

- The eligible jurisdiction requests a "Linkage Package" by contacting the Point of Contact (POC) for the plan:

  Name:
  Title:
  Address:
  City, State ZIP:
  Phone:
  e-mail :

  The POC will provide a linkage packages that includes:

  - Copy of Volume 1 and 2 of the plan
  - Planning partner's expectations package.
  - A sample "letter of intent" to link to the Hazard Mitigation Plan.
  - A Special Purpose District or City template and instructions.
  - Catalog of Hazard Mitigation Alternatives
  - A "request for technical assistance" form.
  - A copy of Section 201.6 of Chapter 44, the Code of Federal Regulations (44CFR), which defines the federal requirements for a local hazard mitigation plan.
- The new jurisdiction will be required to review both volumes of the Hazard Mitigation Plan, which includes the following key components for the planning area:
  - The planning area risk assessment
  - Goals and objectives
  - Plan implementation and maintenance procedures

- Comprehensive review of alternatives
- County-wide initiatives.

Once this review is complete, the jurisdiction will complete its specific annex using the template and instructions provided by the POC. Technical assistance can be provided upon request by completing the request for technical assistance (TA) form provided in the linkage package. This TA may be provided by the POC or any other resource within the planning partnership such as a member of the Steering Committee or a currently participating City or Special Purposes District partner. The POC will determine who will provide the TA and the possible level of TA based on resources available at the time of the request.

- The new jurisdiction will be required to develop a public involvement strategy that ensures the public's ability to participate in the plan development process. At a minimum, the new jurisdiction must make an attempt to solicit public opinion on hazard mitigation at the onset of this linkage process and a minimum of one public meeting to present their draft jurisdiction specific annex for comment, prior to adoption by the governing body. The planning partnership will have resources available to aid in the public involvement strategy such as the Plan website. However, it will be the new jurisdiction's responsibility to implement and document this strategy for incorporation into its annex. It should be noted that the Jurisdictional Annex templates ***do not*** include a section for the description of the public process. This is because the original partnership was covered under a uniform public involvement strategy that covered the planning area described in Volume 1 of the plan. Since new partners were not addressed by that strategy, they will have to initiate a new strategy, and add a description of that strategy to their annex. For consistency, new partners are encouraged to follow the public involvement format utilized by the initial planning effort as described in Volume 1 of the plan.
- Once their public involvement strategy is completed and they have completed their template, the new jurisdiction will submit the completed package to the POC for a pre-adoption review to ensure conformance with the Regional plan format.
- The POC will review for the following:
  - Documentation of Public Involvement strategy
  - Conformance of template entries with guidelines outlined in instructions
  - Chosen initiatives are consistent with goals, objectives and mitigation catalog of the Planning Area Hazard Mitigation Plan
  - A Designated point of contact
  - A ranking of risk specific to the jurisdiction.

  The POC may utilize members of the Steering Committee or other resources to complete this review. All proposed linked annexes will be submitted to the Steering Committee for review and comment prior to submittal to CalEMA.
- Plans approved and accepted by the Steering Committee will be forwarded to CalEMA for review with a cover letter stating the forwarded plan meets local approved plan standards and whether the plan is submitted with local adoption or for criteria met/plan not adopted review.
- CalEMA will review plans for federal compliance. Non-Compliant plans are returned to the Lead agency for correction. Compliant plans are forwarded to FEMA for review with annotation as to the adoption status.

- FEMA reviews the new jurisdiction's plan in association with the approved plan to ensure DMA compliance. FEMA notifies new jurisdiction of results of review with copies to CalEMA and approved planning authority.
- New jurisdiction corrects plan shortfalls (if necessary) and resubmits CalEMA through the approved plan lead agency.
- For plans with no shortfalls from the FEMA review that have not been adopted, the new jurisdiction governing authority adopts the plan (if not already accomplished) and forwards adoption resolution to FEMA with copies to lead agency and CalEMA
- FEMA regional director notifies new jurisdiction governing authority of plan approval.

The new jurisdiction plan is then included with the regional plan with the commitment from the new jurisdiction to participate in the ongoing plan implementation and maintenance.

## DECREASING THE PARTNERSHIP

The eligibility afforded under this process to the planning partnership can be rescinded in two ways. First, a participating planning partner can ask to be removed from the partnership. This may be done because the partner has decided to develop its own plan or has identified a different planning process for which it can gain eligibility. A partner that wishes to voluntarily leave the partnership shall inform the POC of this desire in writing. This notification can occur any time during the calendar year. A jurisdiction wishing to pursue this avenue is advised to make sure that it is eligible under the new planning effort, to avoid any period of being out of compliance with the Disaster Mitigation Act.

After receiving this notification, the POC shall immediately notify both CalEMA and FEMA in writing that the partner in question is no longer covered by the Hazard Mitigation Plan, and that the eligibility afforded that partner under this plan should be rescinded based on this notification.

The second way a partner can be removed from the partnership is by failure to meet the participation requirements specified in the "Planning Partner Expectations" package provided to each partner at the beginning of the process, or the plan maintenance and implementation procedures specified under chapter 7 in Volume 1 of the plan. Each partner agreed to these terms by adopting the plan.

Eligibility status of the planning partnership will be monitored by the POC. The determination of whether a partner is meeting its participation requirements will be based on the following parameters:

- Are progress reports being submitted annually by the specified time frames?
- Are partners notifying the POC of changes in designated points of contact?
- Are the partners supporting the Steering Committee by attending designated meetings or responding to needs identified by the body?
- Are the partners continuing to be supportive as specified in the planning partners expectations package provided to them at the beginning of the process?

Participation in the plan does not end with plan approval. This partnership was formed on the premise that a group of planning partners would pool resources and work together to strive to reduce risk within the planning area. Failure to support this premise lessens the effectiveness of this effort. The following procedures will be followed to remove a partner due to the lack of participation:

- The POC will advise the Steering Committee of this pending action and provide evidence or justification for the action. Justification may include: multiple failures to submit annual

progress reports, failure to attend meetings determined to be mandatory by the Steering Committee, failure to act on the partner's action plan, or inability to reach designated point of contact after a minimum of five attempts.

- The Steering Committee will review information provided by POC, and determine action by a vote. The Steering Committee will invoke the voting process established in the ground rules established during the formation of this body.
- Once the Steering Committee has approved an action, the POC will notify the planning partner of the pending action in writing via certified mail. This notification will outline the grounds for the action, and ask the partner if it is their desire to remain as a partner. This notification shall also clearly identify the ramifications of removal from the partnership. The partner will be given 30 days to respond to the notification.
- Confirmation by the partner that they no longer wish to participate or failure to respond to the notification shall trigger the procedures for voluntary removal discussed above.
- Should the partner respond that they would like to continue participation in the partnership, they must clearly articulate an action plan to address the deficiencies identified by the POC. This action plan shall be reviewed by the Steering Committee to determine whether the actions are appropriate to rescind the action. Those partners that satisfy the Steering Committee's review will remain in the partnership, and no further action is required.
- Automatic removal from the partnership will be implemented for partners where these actions have to be initiated more than once in a 5 year planning cycle.

Siskiyou County
**Hazard Mitigation Plan**
**Volume 2: Planning Partner Annexes**

# APPENDIX C. JURISDICTIONAL ANNEX INSTRUCTIONS AND TEMPLATE FOR MUNICIPALITIES

**August 2018**

# INSTRUCTIONS FOR COMPLETING MUNICIPALITY ANNEX TEMPLATE

This document provides instructions for completing the annex template for city and county governments participating in multi-partner hazard mitigation planning. Assistance in completing the template will be available in the form of a workshop for all planning partners or one-on-one visits with each partner, depending on funding availability. Any questions on completing the template should be directed to:


Jasen Vela
Siskiyou County OES.
806 S. Main St
Yreka Ca. 96097
530-841-2155
e-mail: jvela@co.siskiyou.ca.us


Please provide both a hard copy and digital copy of the completed template to Tetra Tech upon completion.

***Associated Materials:***

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials ***before*** you begin the process of filling in the template:

- Summary-of-loss matrix for the hazard mitigation plan
- Results from the hazard mitigation plan questionnaire
- Catalog of mitigation alternatives
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM)

***A Note About Software:***

The template for the municipal jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

## CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction (The City of Metropolis, Jefferson County, etc.). At this time, also change the name in the "header" box on Page 3, using the same wording.

Note that the template is set up as Chapter "X." Please leave all references to "X" in the template as they are. Once all templates are received, chapter numbering will be assigned for incorporation into the final plan.

## HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

## JURISDICTION PROFILE

Provide information specific to your jurisdiction as indicated, in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document. For population data, use the most current population figure for your jurisdiction based on an official means of tracking (e.g., the U.S. Census or state office of financial management).

## JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

### Chronological List of Hazard Events

In Table X-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the summary of natural hazard events within risk assessment of the overall hazard mitigation plan. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data
- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

### Repetitive Loss Properties

A repetitive loss property is any property for which FEMA has paid two or more flood insurance claims in excess of $1,000 in any rolling 10-year period since 1978. In the space provided in the text for Section X.3, indicate the number of any FEMA-identified Repetitive Flood Loss properties in your

***Example Jurisdiction Profile:***

- **Date of Incorporation**—1858
- **Current Population**—17,289 as of July 2006
- **Population Growth—**Based on the data tracked by the California Department of Finance, Arcata has experienced a relatively flat rate of growth. The overall population has increased only 3.4% since 2000 and has averaged 0.74% per year from 1990 to 2007
- **Location and Description**—The City of Arcata is located on California's redwood coast, approximately 760 miles north of Los Angeles and 275 miles north of San Francisco. The nearest seaport is Eureka, five miles south on Humboldt Bay. Arcata is the home of Humboldt State University and is situated between the communities of McKinleyville to the north and Blue Lake to the east. It sits at the intersection of US Highway 101 and State Route 299.
- **Brief History**—The Arcata area was settled during the California gold rush in the 1850s as a supply center for miners. As the gold rush died down, timber and fishing became the area's major economic resource. Arcata was incorporated in 1858 and by 1913 the Humboldt Teachers College, a predecessor to today's Humboldt State University was founded in Arcata. Recently, the presence of the college has come to shape Arcata's population into a young, liberal, and educated crowd. In 1981 Arcata developed the Arcata Marsh and Wildlife sanctuary, an innovative environmentally friendly, sewage treatment enhancement system.
- **Climate**—Arcata's weather is typical of the Northern California coast, with mild summers and cool, wet winters. It rarely freezes in the winter and it is rarely hot in the summer. Annual average rainfall is over 40 inches, with 80% of that falling in the six-month period of November through April. The average year-round temperature is 59ºF. Humidity averages between 72 and 87 percent. Prevailing winds are from the north, and average 5 mph.
- **Governing Body Format**—The City of Arcata is governed by a five-member City Council. The City consists of six departments: Finance, Environmental Services, Community Development, Public Works, Police and the City Manager's Office. The City has 13 Committees, Commissions and Task Forces, which report to the City Council.
- **Development Trends**—Anticipated development levels for Arcata are low to moderate, consisting primarily of residential development. The majority of recent development has been infill. Residentially, there has been a focus on affordable housing and a push for more secondary mother-in-law units on properties.

  The City of Arcata adopted its general plan in July 2000. The plan focuses on issues of the greatest concern to the community. City actions, such as those relating to land use allocations, annexations, zoning, subdivision and design review, redevelopment, and capital improvements, must be consistent with such a plan. Future growth and development in the City will be managed as identified in the general plan.

jurisdiction (your technical assistance provider will be able to help you confirm this information). If you have none, indicate "none" in the space provided.

Next, indicate the number (if any) of repetitive loss structures in your jurisdiction that have been mitigated. Mitigated for this exercise means that flood protection has been provided to the structure. If you do not know the answer to this question, the planning team will provide it for you.

## HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and the economy. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction to develop results that are to be included in the template.

### Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

**TABLE 1.**
**HAZARD PROBABILITY OF OCCURRENCE**

| Hazard Type | Probability | Probability Factor |
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The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

## Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on the economy. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on the economy was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

### *Impacts on People*

To assess impacts on people, values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- High Impact—50% or more of the population is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the population is exposed to a hazard (Impact Factor = 2)
- Low Impact—25% or less of the population is exposed to the hazard (Impact Factor = 1)
- No impact—None of the population is exposed to a hazard (Impact Factor = 0)

**TABLE 2.**
**HAZARD IMPACT ON PEOPLE**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 3) |
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### *Impacts on Property*

To assess impacts on property, values are assigned based on the percentage of the total ***property value exposed*** to the hazard event. In Table 3, enter the cost estimates for potential damage to exposed structures, taken from the "Summary of Loss" matrix provided with these instructions.

**TABLE 3.**
**COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES**

| Hazard type | Estimate of Potential Dollar Losses to Exposed Structures |
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In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- High Impact—30% or more of the total assessed property value is exposed to a hazard (Impact Factor = 3)
- Medium Impact—15% to 29% of the total assessed property value is exposed to a hazard (Impact Factor = 2)
- Low Impact—14% or less of the total assessed property value is exposed to the hazard (Impact Factor = 1)
- No impact—None of the total assessed property value is exposed to a hazard (Impact Factor = 0)

**TABLE 4.**
**HAZARD IMPACT ON PROPERTY**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 2) |
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### *Impacts on the Economy*

To assess impacts on the economy, values are assigned based on the percentage of the total ***property value vulnerable*** to the hazard event. Values represent estimates of the loss from a major event of each hazard in comparison to the total assessed value of property in the county. For some hazards, such as wildfire, landslide and severe weather, vulnerability is the same as exposure due to the lack of loss estimation tools specific to those hazards. In Table 5, list the potential impact of each hazard on the economy in your jurisdiction, along with its impact factor, as follows:

- High Impact—Estimated loss from the hazard is 20% or more of the total assessed property value (Impact Factor = 3)
- Medium Impact—Estimated loss from the hazard is 10% to 19% of the total assessed property value (Impact Factor = 2)
- Low Impact—Estimated loss from the hazard is 8% or less of the total assessed property value (Impact Factor = 1)
- No impact—No loss is estimated from the hazard (Impact Factor = 0)

**TABLE 5.**
**HAZARD IMPACT ON THE ECONOMY**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 1) |
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## Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and the economy:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + economy}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

**TABLE 6.**
**HAZARD RISK RATING**

| Hazard Type | Probability Factor (P) | Sum of Weighted Impact Factors on People, Property & Economy (I) | Risk Rating (P x I) |
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## Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table X-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table X-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

# CAPABILITY ASSESSMENT

## Legal and Regulatory Capability

Describe the legal authorities available to your jurisdiction and/or enabling legislation at the state level affecting planning and land management tools that can support hazard mitigation initiatives. In Table X-3, indicate "Yes" or "No" for each listed code, ordinance, requirement or planning document in each of the following columns:

- Local Authority—Enter "Yes" if your jurisdiction has prepared or adopted the identified item; otherwise, enter "No." If yes, then enter the code or ordinance number and its date of adoption in the comments column.
- State or Federal Prohibitions—Enter "Yes" if there are any state or federal regulations or laws that would prohibit local implementation of the identified item; otherwise, enter "No."
- Other Regulatory Authority—Enter "Yes" if there are any regulations that may impact your initiative that are enforced or administered by another agency (e.g., a state agency or special purpose district); otherwise, enter "No."

- State Mandated—Enter "Yes" if state laws or other requirements enable or require the listed item to be implemented at the local level; otherwise, enter "No."

## Administrative and Technical Capability

This section requires you to take inventory of the staff/personnel resources available to your jurisdiction to help with hazard mitigation planning and implementation of specific mitigation actions.

Complete Table X-4 by indicating whether your jurisdiction has access to each of the listed personnel resources. Enter "Yes" or "No" in the column labeled "Available?". If yes, then enter the department and position title in the right-hand column.

## Financial Resources

Identify what financial resources (other than the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Grant Program) are available to your jurisdiction for implementing mitigation initiatives.

Complete Table X-5 by indicating whether each of the listed financial resources is accessible to your jurisdiction. Enter "Yes" if the resource is fully accessible to your jurisdiction. Enter "No" if there are limitations or prerequisites that may hinder your eligibility for this resource.

## Community Mitigation Related Classifications

Complete Table X-6 to indicate your jurisdiction's participation in various national programs related to natural hazard mitigation. For each program enter "Yes" or "No" in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter "N/A" in these columns if your jurisdiction is not participating.

# HAZARD MITIGATION ACTION PLAN

## Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table X-7 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. These have been provided in the Steering Committee meeting minutes that were forwarded to you in the past.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share. Refer to your fiscal capability assessment (Table X-5) to identify possible sources of funding.
- Indicate the time line as "short term" (1 to 5 years) or "long term" (5 years or greater).

***Wording Your Initiative Descriptions:***

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project's scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1—**Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2—**Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3—**Acquire floodplain property in the Smith subdivision.
- **Initiative 4—**Enhance the County flood warning capability by joining the NOAA "Storm Ready" program.

Technical assistance will be available to your jurisdiction in completing this section during the technical assistance visit.

## Prioritization of Mitigation Initiatives

Complete the information in Table X-8 as follows:

- Initiative—Indicate the initiative number from Table X-7.
- of Objectives Met—Enter the number of objectives the initiative will meet.
- Benefits—Enter "High," "Medium" or "Low" as follows:
  - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the project are difficult to quantify in the short term.
- Costs—Enter "High," "Medium" or "Low" as follows:
  - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
  - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
  - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.

- Do Benefits Exceed the Cost?—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- Is the Project Grant-Eligible?—Enter "Yes" or "No." Refer to the fact sheet on HMGP and PDM.
- Can Project Be Funded Under Existing Program Budgets?—Enter "Yes" or "No." In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- Priority—Enter "High," "Medium" or "Low" as follows:
  - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
  - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
  - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

## Analysis of Mitigation Actions

Complete Table X-9 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- Prevention—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- Property Protection—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- Public Education and Awareness—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- Natural Resource Protection—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.

- Emergency Services—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- Structural Projects—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

## FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

## ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

# CHAPTER X.
# [INSERT JURISDICTION NAME] ANNEX

## X.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone ]
e-mail Address: [email address]

**Alternate Point of Contact**

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone ]
e-mail Address: [email address]

## X.2 JURISDICTION PROFILE

The following is a summary of key information about the jurisdiction and its history:

- **Date of Incorporation—**[Insert Date of Incorporation]
- **Current Population—**[Insert Population] as of [Insert Date of Population Count]
- **Population Growth—**[Insert Discussion of Population Growth]
- **Location and Description—**[Insert Description of Location, Surroundings, Key Geographic Features]
- **Brief History—**[Insert Summary Discussion of Jurisdiction's History]
- **Climate—**[Insert Summary Discussion of Climate]
- **Governing Body Format—**[Insert Summary Description of Governing Body]
- **Development Trends—**[Insert Summary Description of Development]

## X.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table X-1 lists all past occurrences of natural hazards within the jurisdiction. Repetitive loss records are as follows:

- Number of FEMA Identified Repetitive Flood Loss Properties: [Insert ]
- Number of Repetitive Flood Loss Properties that have been mitigated: [Insert ]

## X.4 HAZARD RISK RANKING

Table X-2 presents the ranking of the hazards of concern.

## X.5 CAPABILITY ASSESSMENT

The assessment of the jurisdiction's legal and regulatory capabilities is presented in Table X-3. The assessment of the jurisdiction's administrative and technical capabilities is presented in Table X-4. The assessment of the jurisdiction's fiscal capabilities is presented in Table X-5. Classifications under various community mitigation programs are presented in Table X-6.

## X.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table X-7 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table X-8 identifies the priority for each initiative. Table X-9 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

## X.7 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

[Insert text, if any]

## X.8 ADDITIONAL COMMENTS

[Insert text, if any]

**TABLE X-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | FEMA Disaster (if applicable) | Date | Preliminary Damage Assessment |
|---|---|---|---|
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**TABLE X-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |

**TABLE X-3.**
**LEGAL AND REGULATORY CAPABILITY**

| | Local Authority | State or Federal Prohibitions | Other Jurisdictional Authority | State Mandated | Comments |
|---|---|---|---|---|---|
| **Codes, Ordinances & Requirements** | | | | | |
| Building Code | | | | | |
| Zonings | | | | | |
| Subdivisions | | | | | |
| Stormwater Management | | | | | |
| Post Disaster Recovery | | | | | |
| Real Estate Disclosure | | | | | |
| Growth Management | | | | | |
| Site Plan Review | | | | | |
| Special Purpose (flood management, critical areas) | | | | | |
| **Planning Documents** | | | | | |
| General Plan | | | | | |
| Capital Improvement Plan | | | | | |
| Economic Development Plan | | | | | |
| Floodplain or Basin Plan | | | | | |
| Stormwater Plan | | | | | |
| Habitat Conservation Plan | | | | | |
| Shoreline Management Plan | | | | | |
| Emergency Response Plan | | | | | |
| Continuity of Operations Plan | | | | | |
| Post Disaster Recovery Plan | | | | | |
| Terrorism Plan | | | | | |
| **Other** | | | | | |
| Other | | | | | |

**TABLE X-4.**
**ADMINISTRATIVE AND TECHNICAL CAPABILITY**

| Staff/Personnel Resources | Available? | Department/Agency/Position |
|---|---|---|
| Planners or engineers with knowledge of land development and land management practices | | |
| Engineers or professionals trained in building or infrastructure construction practices | | |
| Planners or engineers with an understanding of natural hazards | | |
| Staff with training in benefit/cost analysis | | |
| Floodplain manager | | |
| Surveyors | | |
| Personnel skilled or trained in GIS applications | | |
| Scientist familiar with natural hazards in local area | | |
| Emergency manager | | |
| Grant writers | | |

**TABLE X-5.**
**FISCAL CAPABILITY**

| Financial Resources | Accessible or Eligible to Use? |
|---|---|
| Community Development Block Grants | |
| Capital Improvements Project Funding | |
| Authority to Levy Taxes for Specific Purposes | |
| User Fees for Water, Sewer, Gas or Electric Service | |
| Incur Debt through General Obligation Bonds | |
| Incur Debt through Special Tax Bonds | |
| Incur Debt through Private Activity Bonds | |
| Withhold Public Expenditures in Hazard-Prone Areas | |
| State Sponsored Grant Programs | |
| Development Impact Fees for Homebuyers or Developers | |
| Other | |

**TABLE X-6.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Community Rating System | | | |
| Building Code Effectiveness Grading Schedule | | | |
| Public Protection | | | |
| Storm Ready | | | |
| Firewise | | | |

**TABLE X-7.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative—Description** | | | | | | | |
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| **Initiative—Description** | | | | | | | |
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| **Initiative—Description** | | | | | | | |
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**TABLE X-8.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative | of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
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a. See Section ___ for definitions of high, medium and low priorities.

**TABLE X-9.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
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a. See Section ___ for description of mitigation types

Siskiyou County
**Hazard Mitigation Plan**
**Volume 2: Planning Partner Annexes**

# APPENDIX D.
# JURISDICTIONAL ANNEX INSTRUCTIONS AND TEMPLATE FOR SPECIAL-PURPOSE DISTRICTS

**August 2018**

# INSTRUCTIONS FOR COMPLETING SPECIAL-PURPOSE DISTRICT ANNEX TEMPLATE

This document provides instructions for completing the annex template for special-purpose districts participating in multi-partner hazard mitigation planning. Assistance in completing the template will be available in the form of a workshop for all planning partners or one-on-one visits with each partner, depending on funding availability. Any questions on completing the template should be directed to:


Jasen Vela
Siskiyou County OES.
806 S. Main St
Yreka Ca. 96097
530-841-2155
e-mail: jvela@co.siskiyou.ca.us


Please provide both a hard copy and digital copy of the completed template to Tetra Tech upon completion.

***Associated Materials:***

Along with the annex template and these instructions, you have been provided with other materials with information that is needed for completing the template. Be sure to review these materials ***before*** you begin the process of filling in the template:

- Summary-of-loss matrix for the hazard mitigation plan
- Results from the hazard mitigation plan questionnaire
- Catalog of mitigation alternatives
- Fact sheet on Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Grant Program (PDM)

***A Note About Software:***

The template for the municipal jurisdiction annex is a Microsoft Word document in a format that will be used in the final plan. Partners are asked to use this template so that a uniform product will be completed for each partner. Partners who do not have Microsoft Word capability may prepare the document in other formats, and the planning team will convert it to the Word format.

## CHAPTER NUMBER AND TITLE

In the chapter title at the top of Page 1, type in the complete official name of your jurisdiction (West County Fire Protection District 1, Burgville Flood Protection District, etc.). At this time, also change the name in the "header" box on Page 3, using the same wording.

Note that the template is set up as Chapter "X." Please leave all references to "X" in the template as they are. Once all templates are received, chapter numbering will be assigned for incorporation into the final plan.

## HAZARD MITIGATION PLAN POINT OF CONTACT

Please provide the name, title, mailing address, telephone number, and e-mail address for the primary point of contact for your jurisdiction. This should be the person responsible for monitoring, evaluating and updating the annex for your jurisdiction. This person should also be the principle liaison between your jurisdiction and the Steering Committee overseeing development of this plan.

In addition, designate an alternate point of contact. This would be a person to contact should the primary point of contact be unavailable or no longer employed by the jurisdiction.

# JURISDICTION PROFILE

## Narrative Profile

Please provide a brief summary to profile your jurisdiction. Include the purpose of the jurisdiction, the date of inception, the type of organization, the number of employees, the mode of operation (i.e., how operations are funded), the type of governing body, and who has adoptive authority. Describe who the jurisdiction's customers are (if applicable, include number of users or subscribers). Include a geographical description of the service area.

Provide information in a style similar to the example provided in the box at right. This should be information that was not provided in the overall mitigation plan document.

***Example Jurisdiction Narrative Profile:***

Humboldt Community Services District is a special-purpose district created in 1952 to provide water, sewer, and street lighting to the unincorporated area surrounding the City of Eureka known as Pine Hill & Cutten. The District's designated service areas expanded throughout the years to include other unincorporated areas of Humboldt County known as Myrtletown, Humboldt Hill, Fields Landing, King Salmon, and Freshwater. A five-member elected Board of Directors governs the District. The Board assumes responsibility for the adoption of this plan; the General Manager will oversee its implementation. As of April 30, 2007, the District serves 7,305 water connections and 6,108 sewer connections, with a current staff of 21. Funding comes primarily through rates and revenue bonds..

## Summary Information

Complete the bulleted list of summary information as follows:

- **Population Served—**List the estimated population that your jurisdiction provides services to. If you do not know this number directly, create an estimate (e.g., the number of service connections times the average household size for the service area based on Census data).
- **Land Area Served—**Enter the service area of your jurisdiction in acres or square miles.
- **Value of Area Served—**Enter the approximate assessed value of your service area. If you do not have this information, the County should be able to provide a number using the County Assessor's database.
- **Land Area Owned—**Enter the area of property owned by the jurisdiction in acres or square miles.
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction—**List all infrastructure and equipment that is critical to your jurisdiction's operations and is located in a natural hazard risk zone. Briefly describe the item and give its estimated replacement-cost value. Examples are as follows:
    - Fire Districts—Apparatus and equipment housed in a facility that is located in a natural hazard risk zone. This is the equipment that is essential for you to deliver services to this area should a natural hazard occur. It is not necessary to provide a detailed inventory of each engine and truck and its contents. A summary will suffice, such as "5 Engines, 2 ladders, and their contents". Do not list reserve equipment.
    - Dike/Flood Control Districts—Miles of levees, pump stations, retention/detention ponds, tide gates, miles of ditches, etc., within natural hazard risk zones.
    - Water Districts—Total length of pipe (it is not necessary to specify size and type), pump stations, treatment facilities, dams and reservoirs, within natural hazard risk zones.

  - Public Utility Districts—Miles of power line (above ground and underground), generators, power generating sub-stations, miles of pipeline, etc., within natural hazard risk zones.
  - School Districts—Anything within natural hazard risk zones, besides school buildings, that is critical for you to operate (e.g., school buses if you own a fleet of school buses).
- **Total Value of Critical Infrastructure/Equipment—**Enter total replacement-cost value of the critical infrastructure and equipment listed above.
- **List of Critical Facilities Owned by the Jurisdiction—**List all buildings and other facilities that are critical to your jurisdiction's operations and are located in a natural hazard risk zone. Briefly describe the facility and give its estimated replacement-cost value.
- **Total Value of Critical Facilities—**Enter total replacement-cost value of the critical facilities listed above.
- **Current and Anticipated Service Trends—**Enter a brief description on how your jurisdiction's services are projected to expand in the foreseeable future and why. Note any identified capital improvements needed to meet the projected expansion. Examples are as follows:
  - For a Fire District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land uses will represent an increase in population and thus a projected increase in call volume. Our District is experiencing an average annual increase in call volume of 13 percent.
  - For Dike/Drainage/Flood Control District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will result in an increase in impermeable surface within our service area and thus increase the demand on control facilities.
  - For a Water District: Portions of the jurisdiction have experienced a 13 percent growth over the last five years. Land use designations allow for an increase in light commercial and residential land uses within the service area. This increase in density of land use will represent an increase in the number of housing units within the service area and thus represent an expansion of the district's delivery network.

## Boundary Map

Maps that illustrate the service area boundary for all special-purpose district partners will be provided at the workshop. Please confirm that the boundaries reflected on the maps are current and accurate for your jurisdiction. In the box for this section, include a reference to the map that includes your jurisdiction's boundaries.

# JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

In Table X-1, list in chronological order (most recent first) any natural hazard event that has caused damage to your jurisdiction since 1975. Include the date of the event and the estimated dollar amount of damage it caused. Please refer to the summary of natural hazard events within risk assessment of the overall hazard mitigation plan. Potential sources of damage information include:

- Preliminary damage estimates your jurisdiction filed with the county or state
- Insurance claims data

- Newspaper archives
- Other plans/documents that deal with emergency management (safety element of a comprehensive plan, emergency response plan, etc.)
- Citizen input.

## HAZARD RISK RANKING

The risk ranking performed for the overall planning area is presented in the risk assessment section of the overall hazard mitigation plan. However, each jurisdiction has differing degrees of risk exposure and vulnerability and therefore needs to rank risk for its own area, using the same methodology as used for the overall planning area. The risk-ranking exercise assesses two variables for each hazard: its probability of occurrence; and its potential impact on people, property and operations. A detailed discussion of the concepts associated with risk ranking is provided in the overall hazard mitigation plan. The instructions below outline steps for assessing risk in your jurisdiction to develop results that are to be included in the template.

## Determine Probability of Occurrence for Each Hazard

A probability factor is assigned based on how often a hazard is likely to occur. In Table 1, list the probability of occurrence for each hazard as it pertains to your jurisdiction, along with its probability factor, as follows:

- High—Hazard event is likely to occur within 25 years (Probability Factor = 3)
- Medium—Hazard event is likely to occur within 100 years (Probability Factor = 2)
- Low—Hazard event is not likely to occur within 100 years (Probability Factor = 1)
- None—If there is no exposure to a hazard, there is no probability of occurrence (Probability Factor = 0)

**TABLE 1.**
**HAZARD PROBABILITY OF OCCURRENCE**

| Hazard Type | Probability | Probability Factor |
|---|---|---|
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The probability of occurrence of a hazard event is generally based on past hazard events in an area. For example, if your jurisdiction has experienced two damaging floods in the last 25 years, the probability of occurrence is high for flooding and scores a 3 under this category. If your jurisdiction has experienced no damage from landslides in the last 100 years, your probability of occurrence for landslide is low, and scores a 1 under this category.

## Determine Potential Impacts of Each Hazard

The impact of each hazard was divided into three categories: impacts on people, impacts on property, and impacts on your jurisdiction's operations. These categories were also assigned weighted values. Impact on people was assigned a weighting factor of 3, impact on property was assigned a weighting factor of 2 and impact on operations was assigned a weighting factor of 1. Steps to assess each type of impact are described below.

### *Impacts on People*

To assess impacts on people, values are assigned based on the percentage of the total ***population exposed*** to the hazard event. The degree of impact on individuals will vary and is not measurable, so the calculation assumes for simplicity and consistency that all people exposed to a hazard because they live in a hazard zone will be equally impacted when a hazard event occurs. In Table 2, list the potential impact of each hazard on people in your jurisdiction, along with its impact factor, as follows:

- High Impact—50% or more of the population is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the population is exposed to a hazard (Impact Factor = 2)
- Low Impact—25% or less of the population is exposed to the hazard (Impact Factor = 1)
- No impact—None of the population is exposed to a hazard (Impact Factor = 0)

**TABLE 2.**
**HAZARD IMPACT ON PEOPLE**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 3) |
|---|---|---|---|
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### *Impacts on Property*

To assess impacts on property, values are assigned based on the percentage of the total ***value of buildings, equipment and infrastructure that is exposed*** to the hazard event. In Table 3, enter the cost estimates for potential damage to the jurisdiction's exposed buildings, equipment and infrastructure , taken from the "Summary of Loss" matrix provided with these instructions.

**TABLE 3.**
**COST ESTIMATES FOR POTENTIAL DAMAGE TO STRUCTURES**

| Hazard type | Estimate of Potential Dollar Losses to Jurisdiction-Owned Facilities Exposed to the Hazard |
|---|---|
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In Table 4, list the potential impact of each hazard on property in your jurisdiction, along with its impact factor. Determine impact based on damage estimates from Table 3, as follows:

- High Impact—50% or more of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 3)
- Medium Impact—25% to 49% of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 2)
- Low Impact—24% or less of the total assessed property value of facilities, equipment and infrastructure is exposed to the hazard (Impact Factor = 1)
- No impact—None of the total assessed property value of facilities, equipment and infrastructure is exposed to a hazard (Impact Factor = 0)

**TABLE 4.**
**HAZARD IMPACT ON PROPERTY**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 2) |
|---|---|---|---|
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### *Impacts on the Jurisdiction's Operations*

Impact on operations is assessed based on estimates of ***how long it will take your jurisdiction to become 100-percent operable*** after a hazard event. The estimated functional downtime for critical facilities has been estimated for most hazards within the planning area. In Table 5, list the potential impact of each hazard on the operations of your jurisdiction, along with its impact factor, as follows:

- High = functional downtime of 365 days or more (Impact Factor = 3)
- Medium = Functional downtime of 180 to 364 days (Impact Factor = 2)
- Low = Functional downtime of 180 days or less (Impact Factor = 1)
- No Impact = No functional downtime is estimated from the hazard (Impact Factor = 0)

**TABLE 5.**
**HAZARD IMPACT ON OPERATIONS**

| Hazard Type | Impact | Impact Factor | Weighted Impact Factor (Unweighted Factor x 1) |
|---|---|---|---|
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You will need to consult the risk assessment for this task. The critical facilities exposed to each hazard have been identified, and the impacts on operability have been estimated for most of the hazards within the planning area. If the functional downtime component has not been provided for a hazard in the risk assessment, consider the impact on operability of that hazard to be low.

## Determine Risk Rating for Each Hazard

A risk rating for each hazard is determined by multiplying the assigned probability factor by the sum of the weighted impact factors for people, property and operations:

- Risk Rating = Probability Factor x Weighted Impact Factor {people + property + operations}

Using the results developed in Tables 1, 2, 4 and 5, complete Table 6 to calculate a risk rating for each hazard of concern.

**TABLE 6.**
**HAZARD RISK RATING**

| Hazard Type | Probability Factor (P) | Sum of Weighted Impact Factors on People, Property & Operations (I) | Risk Rating (P x I) |
|---|---|---|---|
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## Complete Risk Ranking in Template

Once Table 6 has been completed above, complete Table X-2 in your template. The hazard with the highest risk rating in Table 6 should be listed at the top of Table X-2 and given a rank of 1; the hazard with the second highest rating should be listed second with a rank of 2; and so on. Two hazards with equal risk ratings should be given the same rank.

It is important to note that this exercise should not override your subjective assessment of relative risk based on your knowledge of the history of natural hazard events in your jurisdiction. If this risk ranking exercise generates results other that what you know based on substantiated data and documentation, you may alter the ranking based on this knowledge. If this is the case, please note this fact in the comments at the end of the template. Remember, one of the purposes of this exercise is to support the selection and prioritization of initiatives in your plan. If you identify an initiative with a high priority that mitigates the risk of a hazard you have ranked low, that project will not be competitive in the grant arena.

## APPLICABLE REGULATIONS AND PLAN

List any federal, state, local or district laws, ordinances, codes and policies that govern your jurisdiction that include elements addressing hazard mitigation. Describe how these laws may support or conflict with the mitigation strategies of this plan. List any other plans, studies or other documents that address hazard mitigation issues for your jurisdiction. Note whether the documents could have a positive or a negative impact on the mitigation strategies of this plan. “None applicable” is a possible answer for this section.

## CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

Complete Table X-3 to indicate your jurisdiction’s participation in various national programs related to natural hazard mitigation. For each program enter “Yes” or “No” in the second column to indicate whether your jurisdiction participates. If yes, then enter the classification that your jurisdiction has earned under the program in the third column and the date on which that classification was issued in the fourth column; enter “N/A” in these columns if your jurisdiction is not participating.

# HAZARD MITIGATION ACTION PLAN

## Action Plan Matrix

Identify the initiatives your jurisdiction would like to pursue with this plan. Refer to the mitigation catalog for mitigation options you might want to consider. Be sure to consider the following factors in your selection of initiatives:

- Select initiatives that are consistent with the overall goals, objectives and guiding principles of the hazard mitigation plan.
- Identify projects where benefits exceed costs.
- Include any project that your jurisdiction has committed to pursuing regardless of grant eligibility.
- Know what is and is not grant-eligible under the HMGP and PDM (see fact sheet provided). Listing HMGP or PDM as a potential funding source for an ineligible project will be a red flag when this plan goes through review. If you have projects that are not HMGP or PDM grant eligible, but do mitigate part or all of the hazard and may be eligible for other grant programs sponsored by other agencies, include them in this section.
- Although you should identify at least one initiative for your highest ranked risk, a hazard-specific project is not required for every hazard. If you have not identified an earthquake related project, and an earthquake occurs that causes damage in your jurisdiction, you are not discounted from HMGP project grant eligibility.

Complete Table X-4 for all the initiatives you have identified:

- Enter the initiative number and description.
- Indicate whether the initiative mitigates hazards for new or existing assets.
- Identify the specific hazards the initiative will mitigate.
- Identify by number the mitigation plan objectives that the initiative addresses. These have been provided in the Steering Committee meeting minutes that were forwarded to you in the past.
- Indicate who will be the lead in administering the project. This will most likely be your governing body.
- Identify funding sources for the project. If it is a grant, include the funding sources for the cost share.
- Indicate the time line as “short term” (1 to 5 years) or “long term” (5 years or greater).

Technical assistance will be available to your jurisdiction in completing this section during the technical assistance visit.

***Wording Your Initiative Descriptions:***

Descriptions of your initiatives need not provide great detail. That will come when you apply for a project grant. Provide enough information to identify the project’s scope and impact. The following are typical descriptions for an action plan initiative:

- **Initiative 1—**Address Repetitive Loss properties. Through targeted mitigation, acquire, relocate or retrofit the five repetitive loss structures in the County as funding opportunities become available.
- **Initiative 2—**Perform a non-structural, seismic retrofit of City Hall.
- **Initiative 3—**Acquire floodplain property in the Smith subdivision.
- **Initiative 4—**Enhance the County flood warning capability by joining the NOAA “Storm Ready” program.

## Prioritization of Mitigation Initiatives

Complete the information in Table X-5 as follows:

- Initiative—Indicate the initiative number from Table X-4.
- of Objectives Met—Enter the number of objectives the initiative will meet.
- Benefits—Enter "High," "Medium" or "Low" as follows:
  - High: Project will have an immediate impact on the reduction of risk exposure to life and property.
  - Medium: Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
  - Low: Long-term benefits of the project are difficult to quantify in the short term.
- Costs—Enter "High," "Medium" or "Low" as follows:
  - High: Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.
  - Medium: Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
  - Low: Possible to fund under existing budget. Project is part of, or can be part of an existing ongoing program.

  If you know the estimated cost of a project because it is part of an existing, ongoing program, indicate the amount.
- Do Benefits Exceed the Cost?—Enter "Yes" or "No." This is a qualitative assessment. Enter "Yes" if the benefit rating (high, medium or low) is the same as or higher than the cost rating (high benefit/high cost; high benefit/medium cost; medium benefit/low cost; etc.). Enter "No" if the benefit rating is lower than the cost rating (medium benefit/high cost, low benefit/medium cost; etc.)
- Is the Project Grant-Eligible?—Enter "Yes" or "No." Refer to the fact sheet on HMGP and PDM.
- Can Project Be Funded Under Existing Program Budgets?—Enter "Yes" or "No." In other words, is this initiative currently budgeted for, or would it require a new budget authorization or funding from another source such as grants?
- Priority—Enter "High," "Medium" or "Low" as follows:
  - High: Project meets multiple plan objectives, benefits exceed cost, funding is secured under existing programs, or is grant eligible, and project can be completed in 1 to 5 years (i.e., short term project) once funded.
  - Medium: Project meets at least 1 plan objective, benefits exceed costs, requires special funding authorization under existing programs, grant eligibility is questionable, and project can be completed in 1 to 5 years once funded.
  - Low: Project will mitigate the risk of a hazard, benefits exceed costs, funding has not been secured, project is not grant eligible, and time line for completion is long term (5 to 10 years).

This prioritization is a simple review to determine that the initiatives you have identified meet one of the primary objectives of the Disaster Mitigation Act. It is not the detailed benefit/cost analysis required for

HMGP/PDM project grants. The prioritization will identify any projects whose probable benefits will not exceed the probable costs.

## Analysis of Mitigation Actions

Complete Table X-6 summarizing the mitigation actions by hazard of concern and the following six mitigation types:

- Prevention—Government, administrative or regulatory actions that influence the way land and buildings are developed to reduce hazard losses. Includes planning and zoning, floodplain laws, capital improvement programs, open space preservation, and stormwater management regulations.
- Property Protection—Modification of buildings or structures to protect them from a hazard or removal of structures from a hazard area. Includes acquisition, elevation, relocation, structural retrofit, storm shutters, and shatter-resistant glass.
- Public Education and Awareness—Actions to inform citizens and elected officials about hazards and ways to mitigate them. Includes outreach projects, real estate disclosure, hazard information centers, and school-age and adult education.
- Natural Resource Protection—Actions that minimize hazard loss and preserve or restore the functions of natural systems. Includes sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- Emergency Services—Actions that protect people and property during and immediately after a hazard event. Includes warning systems, emergency response services, and the protection of essential facilities.
- Structural Projects—Actions that involve the construction of structures to reduce the impact of a hazard. Includes dams, setback levees, floodwalls, retaining walls, and safe rooms.

This exercise demonstrates that the jurisdiction has selected a comprehensive range of actions.

# FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

In this section, identify any future studies, analyses, reports, or surveys your jurisdiction needs to better understand its vulnerability to identified or currently unidentified risks. These could be needs based on federal or state agency mandates such as EPA's Bio-terrorism assessment requirement for water districts.

# ADDITIONAL COMMENTS

Use this section to add any additional information pertinent to hazard mitigation and your jurisdiction not covered in this template.

# CHAPTER X.
# [INSERT JURISDICTION NAME] ANNEX

## X.1 HAZARD MITIGATION PLAN POINT OF CONTACT

**Primary Point of Contact**

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone ]
e-mail Address: [email address]

**Alternate Point of Contact**

[Name, Title]
[Street Address]
[City, State ZIP]
Telephone: [Phone ]
e-mail Address: [email address]

## X.2 JURISDICTION PROFILE

[Insert Narrative Profile Information, per Instructions]

The following is a summary of key information about the jurisdiction:

- **Population Served—**[Insert Population] as of [Insert Date of Population Count]
- **Land Area Served—**[Insert Area]
- **Value of Area Served—**The estimated value of the area served by the jurisdiction is [Insert Total Value]
- **Land Area Owned—**[Insert Area]
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
- **Total Value of Critical Infrastructure/Equipment—**The total value of critical infrastructure and equipment owned by the jurisdiction is [Insert Total Value]
- **List of Critical Facilities Owned by the Jurisdiction:**
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
  - [Insert Description of Item] [Insert Value of Item]
- **Total Value of Critical Facilities—**The total value of critical facilities owned by the jurisdiction is [Insert Total Value]
- **Current and Anticipated Service Trends—**[Insert Summary Description of Service Trends]

The jurisdiction's boundaries are shown on Figure [Insert of Figure Showing Jurisdiction Boundaries]

## X.3 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table X-1 lists all past occurrences of natural hazards within the jurisdiction.

## X.4 HAZARD RISK RANKING

Table X-2 presents the ranking of the hazards of concern.

## X.5 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]
- [Insert Name of Code, Ordinance, Policy or Plan]

## X.6 CLASSIFICATION IN HAZARD MITIGATION PROGRAMS

The jurisdiction's classifications under various hazard mitigation programs are presented in Table X-3.

## X.7 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table X-4 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table X-5 identifies the priority for each initiative. Table X-6 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

## X.8 FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

[Insert text, if any]

## X.9 ADDITIONAL COMMENTS

[Insert text, if any]

**TABLE X-1.**
**NATURAL HAZARD EVENTS**

| Type of Event | FEMA Disaster (if applicable) | Date | Preliminary Damage Assessment |
|---|---|---|---|
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**TABLE X-2.**
**HAZARD RISK RANKING**

| Rank | Hazard Type | Risk Rating Score (Probability x Impact) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |

**TABLE X-3.**
**COMMUNITY CLASSIFICATIONS**

| | Participating? | Classification | Date Classified |
|---|---|---|---|
| Public Protection | | | |
| Storm Ready | | | |
| Firewise | | | |

**TABLE X-4.**
**HAZARD MITIGATION ACTION PLAN MATRIX**

| Applies to new or existing assets | Hazards Mitigated | Objectives Met | Lead Agency | Estimated Cost | Sources of Funding | Timeline | Status Update |
|---|---|---|---|---|---|---|---|
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |
| **Initiative—Description** | | | | | | | |

**TABLE X-5.**
**MITIGATION STRATEGY PRIORITY SCHEDULE**

| Initiative | of Objectives Met | Benefits | Costs | Do Benefits Equal or Exceed Costs? | Is Project Grant-Eligible? | Can Project Be Funded Under Existing Programs/Budgets? | Priority[a] |
|---|---|---|---|---|---|---|---|
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a. See Section ___ for definitions of high, medium and low priorities.

**TABLE X-6.**
**ANALYSIS OF MITIGATION INITIATIVES**

| | Initiative Addressing Hazard, by Mitigation Type[a] | | | | | |
|---|---|---|---|---|---|---|
| Hazard Type | 1. Prevention | 2. Property Protection | 3. Public Education and Awareness | 4. Natural Resource Protection | 5. Emergency Services | 6. Structural Projects |
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a. See Section ___ for description of mitigation types