Madera County
Local Hazard Mitigation Plan

Public Draft Plan, August 2010

ROA / URS

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Acronyms

CalEMA	California Emergency Management Agency
CAO	County Administrative Officer
CFR	Code of Federal Regulations
DMA 2000	Disaster Mitigation Act of 2000
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMA	Flood Mitigation Assistance Grant Program
F-Scale	Fujita-Pearson Scale
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
LHMP	Local Hazard Mitigation Plan
M	Magnitude
MM	Modified Mercalli
Mph	Miles per hour
NFIP	National Flood Insurance Program
NWS	National Weather Service

PDM	Pre-Disaster Mitigation Program
PGA	Peak Ground Acceleration
RL	Repetitive Loss
SRL	Severe Repetitive Loss
Stafford Act	Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988
USC	United States Code
U.S. Census	U.S. Census Bureau

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As defined in Title 44 of the Code of Federal Regulations (CFR), Subpart M, Section 206.401, hazard mitigation is "any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards." As such, hazard mitigation is any work to minimize the impacts of any type of hazard event before it occurs. Hazard mitigation aims to reduce losses from future disasters. It is a process in which hazards are identified and profiled, the people and facilities at risk are analyzed, and mitigation actions to reduce or eliminate hazard risk are developed. The implementation of the mitigation actions, which include short and long-term strategies that may involve planning, policy changes, programs, projects, and other activities, is the end result of this process.

The following discusses:

- Disaster Mitigation Act of 2000
- Grant programs with hazard mitigation plan (HMP) requirements
- Community profiles
- Outline of this HMP

The participating jurisdictions represented in this multi-jurisdictional plan include:

- Madera County
- City of Madera
- North Fork Rancheria Mono Indians (hereon referred to as the North Fork Rancheria)
- Madera County Office of Education, on behalf of the following school districts: Alview-Dairyland Unified School District; Bass Lake Joint Union School District; Chawanakee Unified School District; Chowchilla Elementary School District; Golden Valley Unified School District; Madera Unified School District; Raymond Knowles School District, and Yosemite Unified School District.

The City of Chowchilla and the Picayune Rancheria of the Chuckchansi Indians are not participating jurisdictions. The City of Chowchilla is nearing completion of its own Local Hazard Mitigation Plan, which was started on December 11, 2008. The Tribal Council of the Picayune Rancheria of the Chuckchansi Indians completed its original LHMP in December 2005. It is now working on the five-year update, which is scheduled for completion in mid-2010.

1.1 DISASTER MITIGATION ACT OF 2000

In recent years, local hazard mitigation planning has been driven by a new federal law, known as the Disaster Mitigation Act of 2000 (DMA 2000). On October 30, 2000, Congress passed the DMA 2000 (Public Law 106-390), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Stafford Act) (Title 42 of the United States Code [USC] Section 5121 et seq.) by repealing the act's previous mitigation planning section (409) and replacing it with a new mitigation planning section (322). This new section emphasized the need for state, tribal, and local entities to closely coordinate mitigation planning and implementation efforts. This new section also provided the legal basis for the Federal Emergency Management Agency's (FEMA's) mitigation plan requirements for mitigation grant assistance.

To implement these planning requirements, FEMA published an Interim Final Rule in the Federal Register on February 26, 2002 (FEMA 2002) (44 CFR Part 201). The tribal planning requirements were updated in 44 CFR Part 201.7 in 2009. The local and tribal mitigation planning requirements are identified in their appropriate sections throughout this multi-jurisdictional local hazard mitigation plan (LHMP) and in Appendix A, FEMA Crosswalks.

1.2 GRANT PROGRAMS WITH MITIGATION PLAN REQUIREMENTS

Currently, five FEMA grant programs are available to participating jurisdictions that have FEMA-approved LHMPs and are members of the National Flood Insurance Program (NFIP). Two of the grant programs are authorized under the Stafford Act and DMA 2000, and the remaining three are authorized under the National Flood Insurance Act and the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act.

1.2.1 Stafford Act Grant Programs

- **Hazard Mitigation Grant Program.** The Hazard Mitigation Grant Program (HMGP) provides grants to state, local, and Tribal entities to implement long-term hazard mitigation measures after declaration of a major disaster. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. Projects must provide a long-term solution to a problem (for example, elevation of a home to reduce the risk of flood damage rather than buying sandbags and pumps to fight the flood). Also, a project's potential savings must be more than the cost of implementing the project. Funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The amount of funding available for the HMGP under a particular disaster declaration is limited. Under the program, the federal government may provide a state or Tribe with up to 20 percent of the total disaster grants awarded by FEMA and may provide up to 75 percent of the cost of projects approved under the program.
- **Pre-Disaster Mitigation Program**. The Pre-Disaster Mitigation (PDM) Program provides funds to state, local, and Tribal entities for hazard mitigation planning and the implementation of mitigation projects before a disaster. PDM grants are awarded on a nationally competitive basis. Like HMGP funding, the potential savings of a PDM project must be more than the cost of implementing the project, and funds may be used to protect either public or private property or to purchase property that has been subjected to, or is in danger of, repetitive damage. The total amount of PDM funding available is appropriated by Congress on an annual basis. The cost-sharing for this grant is 75 percent federal and 25 percent nonfederal, although cost-sharing of 90 percent federal and 10 percent nonfederal is available in certain situations.

1.2.2 National Flood Insurance Act Grant Programs

- **Flood Mitigation Assistance (FMA) Grant Program**: The goal of the FMA Grant Program is to reduce or eliminate flood insurance claims under the NFIP. This program places particular emphasis on mitigating repetitive loss (RL) properties. The primary source of funding for this program is the National Flood Insurance Fund. Grant funding is available for three types of grants: Planning, Project, and Technical Assistance. Project grants, which use the majority of the program's total funding, are awarded to local entities to apply mitigation

measures to reduce flood losses to properties insured under the NFIP. In FY 2008, FMA funding totaled $30 million. The cost-sharing for this grant is 75 percent federal and 25 percent nonfederal, although cost-sharing of 90 percent federal and 10 percent nonfederal is available in certain situations to mitigate severe repetitive loss (SRL) properties. As of January 2010, there are two RL properties located in Madera County. There are no SRL properties located in Madera County.

- **Repetitive Flood Claims Program**: The Repetitive Flood Claims Program provides funding to reduce or eliminate the long-term risk of flood damage to residential and non-residential structures insured under the NFIP. Structures considered for mitigation must have had one or more claim payments for flood damages. In FY 2008, Congress appropriated $10 million for the implementation of this program. All Repetitive Flood Claims grants are eligible for up to100 percent federal assistance.
- **Severe Repetitive Loss Program**: The SRL Program provides funding to reduce or eliminate the long-term risk of flood damage to residential structures insured under the NFIP. Structures considered for mitigation must have had at least four NFIP claim payments over $5,000 each, when at least two such claims have occurred within any 10-year period, and the cumulative amount of such claim payments exceeds $20,000; or for which at least two separate claims payments have been made with the cumulative amount of the building portion of such claims exceeding the value of the property, when two such claims have occurred within any 10-year period. The cost-sharing ratio for this grant is 75 percent federal and 25 percent nonfederal, although a cost-sharing ratio of 90 percent federal and 10 percent nonfederal is available to mitigate SRL properties when a state or Tribal plan addresses ways to mitigate SRL properties. As of January 2010, there are no SRL properties located within Madera County.

1.3 COMMUNITY PROFILES

The following section describes the location, geography, history, and demographics for each local jurisdiction, tribe, and school district, participating in the development and adoption of this LHMP.

1.3.1 Madera County

1.3.1.1 Location, Geography, and History

Madera County is located in central California. The western portion of the County lies in the Central Valley of California, and the eastern portion of the County is located in the Sierra Nevada mountains. Between the mountains and the Central Valley is an area of foothills. Madera County is bordered by Fresno County to the south and west, Merced and Mariposa Counties to the north, and Mono County to the east. The southern portion of Yosemite National Park is located in the northeast of Madera County.

Madera County is approximately 20 miles from the Fresno area, 166 miles from the Bay Area, and 240 miles from Los Angeles. The County occupies approximately 2,153 square miles, of which 2,136 square miles are land and the remaining 17 square miles are occupied by water. Elevations in Madera County range from 180 feet above sea level to 13,157 feet at Mount Ritter, the highest point in the County.

Madera County's climate varies by location within the County. The climate in the Valley is warm and dry, with hot summers (temperatures in July normally reaching 100 degrees Fahrenheit) and fairly mild winters. The average rainfall is 12 inches. In the mountain communities, winters are colder, and summers not quite as hot. Above 7,000 feet, winters can be severe with year-round snow at the highest elevations. Fog is common in Madera County, particularly in the winter months but also can occur in the summer.

Madera County was first inhabited by indigenous peoples between 10,000 and 20,000 years ago. The Valley region was occupied by several tribal entities including the Northern Valley Yokuts, the Foothill area was occupied by the Foothill Yokuts, and the mountainous areas were occupied by the Sierra Miwok and Monache Tribes.

"Madera" is the Spanish word for "lumber" or "wood," the first major industry in the County. European settlers arrived in the early 1800s, but Madera County did not have a substantial population until the California Gold Rush. Evidence of the Gold Rush remains today in the names of some of Madera County's towns, such as Coarsegold, Finegold, and Grub Gulch. The County was formed from a portion of Fresno County in a special election of the residents of the area, and was incorporated in 1893.

Madera County includes two incorporated cities (Chowchilla and Madera) and an identified 55 relatively small older and newer unincorporated communities (see below).

1.3.1.2 Government

The Madera County government consists of five county supervisors and one County Administrator. The Board of Supervisors is the legislative and executive governing body of Madera County government. The County Administrative Officer (CAO) is appointed by and serves at the pleasure of the Board of Supervisors. The CAO serves the legislative function of the Board by providing research, information, and recommendations, and serves all of the executive functions of the Board by administering and supervising all County departments in matters that are the responsibility of the Board.

1.3.1.3 Economy

Madera County's largest industry is the service sector, accounting for 67% of all employment, followed by government, at 24%, according to 2009 data from the State of California Employment Development Department. Agriculture makes up about 22% of all jobs. Because of the large amount of agriculture in the County, the unemployment rate can vary seasonally (State of California, Employment Development Department, Labor Market Information, 2009).

Compared with earlier (1999) data, it is clear that sector shifts have occurred in several categories. Government employment increased from 19.5%, agriculture declined from nearly 30.0%, and services employment increased greatly from about 17%. Government employment now includes about 1,200 employees at the Chukchansi Gold Resort and Casino because of its sovereign status.

1.3.1.4 Demographics

According to the U.S. Census Bureau (U.S. Census), Madera County's population, including incorporated cities, was 123,109 in 2000. Also in 2000, approximately 8 percent of the county's population was under the age of 5, 70 percent was between 18 and 64 years old, and 11 percent was over the age of 65. The U.S. Census estimates the 2008 population of the county is 148,333.

In 2000, the entire county's labor force (defined as members of the population over 16 years) was recorded by the U.S. Census as 48,667 (approximately 54 percent). The median household income in 1999 was recorded as $36,286 (for the U.S. as a whole that figure is $41,994), while the median family income for the same year was recorded as $39,226 ($50,046 nationwide). In 2000, 24,514 individuals, or 21.4 percent of the county residents were living below the poverty level, compared with 12 percent nationwide. The county's per capita income in 1999 was $14,682, while that for the U.S. was $21,587.

In 2008, the median household income was estimated to be $45,646 and the median family income was estimated to be $50,201. Madera County's per capita income was estimated to be $19,479 that same year. 13.9 percent of families and 17.8 percent of all people were estimated by the U.S. Census to be living below the poverty level in the county in 2008, a decrease of 3.6 percent since 2000.

According to the 2000 U.S. Census, the number of people employed was 42,233 and the unemployment rate was 7.1 percent. In 2000, the leading industries in the county were educational, health, and social services (approximately 19 percent of the labor force); agriculture, forestry, fishing and hunting, and mining (approximately 14 percent of the labor force); retail trade (approximately 11 percent of the labor force); and manufacturing (approximately 10 percent of the labor force).

1.3.1.5 Unincorporated Communities

Madera County contains 55 identified unincorporated communities, as follows. Some are little more than place names from past history (often when they had their own Post Offices), and others are active communities at the present time.

- Eastern Madera County – Mountain Communities: Ahwahnee; Ahwahnee Estates; Bass Lake; Bass Lake Annex; Cascadel Woods; Central Camp; Coarsegold; Daulton; Fine Gold, Hildreth; Indian Lakes Estates; Indian Springs; Knowles; Knowles Junction; Nipinnawasee; North Fork; Old Corral; O'Neals; Raymond; South Fork; Sugar Pine; Sumner Hill; The Pines; Whisky Falls; Yosemite Forks; and Yosemite Lakes Park.
- Western Madera County - Valley Communities: Berenda; Bonadelle Ranchos; Bonadelle Ranchos Five; Bonadelle Ranchos Nine; Bonita; Borden; Dairyland; Fairmead; Fresno Crossing; Gregg; Irrigosa; Italian Swiss Colony; Kismet; La Vina; Lake Madera Country Estates; Madera Country Club Estates; Madera Highlands; Madera Ranchos; Minturn; Notarb; Ripperdan; River Road Estates; Rolling Hills; San Joaquin River Estates; Sharon; Sierra Vista; Storey; Trigo; and Valley Lake Ranchos.

1.3.2 City of Madera

The City of Madera (Madera) is the County seat of Madera County, and is located approximately 10 miles north of the county's southern border (shared with Fresno County). Madera's total population in 2000 was 43,207. According to the 2000 U.S. Census, 10.7 percent of Madera's population is under 5 years of age, 64.6 percent are between the ages of 18 and 65 years old, and 8.8 percent of the population is 65 years or older. Of the 17,454 (59 percent) residents of Madera eligible for the labor force, 14,187 are employed. Madera's unemployment rate is 11.0 percent. In 1999, the median household income in Madera was $31,033 and the median family income was $31,927. Madera's per capita income in 1999 was $11,674, and 25.6 percent of Madera's

families were living below the poverty level in 2000. In that same year, 32.5 percent of individuals were also living below the poverty level.

1.3.3 City of Chowchilla

Although the City of Chowchilla is not a participating jurisdiction in this plan, it is located about 20 miles north of the City of Madera near the northern border of Madera County and in the western portion of the County, was incorporated in 1923, and covers about seven square miles at an elevation of 237 feet. The City of Chowchilla, according to the 2000 U.S. Census, had a population of 11,127 in 2000, and based on 2009 figures, the population is 19,051 people (including 8,046 prison inmates). School enrollment is about 2,800 students, and there are 3,935 occupied dwellings. The City updated its General Plan in 2009 for a 31 year planning period to 2040.

Six percent of Chowchilla's population was under 5 years of age in 2000, with 78 percent between the ages of 18 and 65, and 9 percent over 65. Of Chowchilla's 3,072 residents eligible for the labor force in 2000, 2,614 residents were employed. Chowchilla's unemployment rate in 2000 was 5.1 percent. The median household income in Chowchilla in 1999 was $30,729. The median family income for the same year was $35,741. Chowchilla's per capita income in 1999 was $11,927, and 16.5 percent of families and 19.2 percent of individuals in Chowchilla were living below the poverty level in 2000.

The city's draft *Local Hazard Mitigation Plan* (12/31/08) notes that the city "is susceptible to a number of natural hazardous events and has several unique characteristics that make this area more susceptible to certain types of hazards, such as dam failure and flooding."

1.3.4 Madera County Office of Education

The Madera County Office of Education (MCOE) provides a variety of services for the ten school districts, including facility planning, construction, and maintenance. MCOE also operates specialized schools with a total enrollment of 666. For this HMP, the MCOE will represent the ten independently governed public school districts within Madera County, including Alview-Dairyland Union Elementary, Bass Lake Joint Union Elementary, Chawanakee Unified, Chowchilla Union, Chowchilla Elementary, Golden Valley Unified, Madera Unified, Raymond Knowles, and Yosemite Unified.

1.3.5 North Fork Rancheria of the Mono Indians

The North Fork Rancheria of California is a federally recognized tribe as determined under 25 CFR Part 83 and listed in 63 FR 71941. The Tribal Government, created by the "Constitution of the North Fork Rancheria" and adopted May 18, 1996, authorizes the Tribal Council to conduct executive, legislative, and business functions. The five-member Tribal Council is elected by eligible voters of enrolled Tribal Citizens who comprise the General Council. Tribal enrollment presently exceeds 1,700 citizens. Rancheria lands are used for commercial, tribal government, and residential purposes. There are no significant tribal lands being used for agriculture or recreation.

1.3.6 Land Use and Development Trends

The population of Madera County was 88,090 in 1990 and 123,109 in 2000, which was an increase of 35,019 persons, or 39.8 percent from 1990 to 2000. The State of California's total population growth for the same period was 13.6%. According to the State of California, Employment Development Department, Labor Market Information Division, a projected population of 224,600 persons by the year 2020 will amount to an impressive increase of 154% over the 1990 population. Some of the population growth between 1990 and 2000 occurred in the western portion of the County; the City of Chowchilla experienced a 6.5 percent annual growth rate and the City of Madera experienced a 4 percent annual growth rate during this time period. The eastern portion of the County has also experienced growth; for example, between 1990 and 1997, the population of eastern Madera County increased by 23 percent, according to the Oakhurst Area Chamber of Commerce website.

The Madera County General Plan was adopted in 1995. The Housing Element was updated in 2004, and various specific area plans (e.g., Coarsegold, North Fork, and Oakhurst) have been adopted since the last update of the County's General Plan. The County Planning Department will soon seek direction from the Board of Supervisors to begin a multi-year comprehensive plan update process.

The County General Plan includes principles that new development should be centered in existing communities, and should be designed to preserve and maintain the rural character and quality of the county. The Land Use portion of the plan also states that residential development and commercial centers should be located near transportation corridors and multifamily housing should be located in and near community and village cores.

Within the two incorporated cities as well as unincorporated communities, much of the recent growth has led to the expansion of the city or community boundaries. Thus far, the limiting factor to this expansion has been the lack of infrastructure and services. In some cases, the lack of services has not limited the growth.

On October 7, 2009 the City of Madera adopted its updated General Plan, including all of supporting Elements, such as Land Use, Safety, Public Facilities, Conservation, Open-Space, Circulation, Noise, and Housing. The required and accompanying environmental impact report (EIR) also was accepted.

According to the Oakhurst Area General Plan, 2,418 new lots have been added to the area since 1971, reflecting new rural residential development for retirement homes and families wanting to live in the foothills. The principal economic activity in this portion of the County is tourism and recreational resort development, having replaced logging and lumber. Many tourists travel through Madera County to visit Yosemite National Park; other destinations are Bass Lake and the Sierra National Forest. The growth in new lots has been accompanied by growth in retail commercial and highway service growth and development.

1.4 DESCRIPTION OF THE HAZARD MITIGATION PLAN

The remainder of this multi-jurisdictional LHMP consists of the sections and appendices described below.

1.4.1 Section 2: Record of Adoption

Section 2 addresses the adoption of this multi-jurisdictional LHMP by the participating jurisdictions. The adoption resolutions are provided in Appendix B, Adoption Resolutions.

1.4.2 Section 3: Planning Process

Section 3 describes the planning process. Specifically, this section describes the plan development process and identifies members of the Mitigation Planning Committee (Planning Committee); including a description of the meetings held as part of the planning process (relevant documents are attached as Appendix D, Planning Team Meetings). This section also documents public outreach activities (attached as Appendix E, Public Outreach) and discusses the review and incorporation of relevant plans, reports, and other appropriate information.

1.4.3 Section 4: Hazard Analysis

Section 4 describes the process through which the Planning Committee identified, screened, and selected the hazards to be profiled in the multi-jurisdictional LHMP. The hazard analysis includes the nature, history, location, extent, and probability of future events for each hazard. Location and historical hazard figures are provided in Appendix C, Figures.

1.4.4 Section 5: Vulnerability Analysis

Section 5 identifies the methodology for analyzing potentially vulnerable assets—population, residential building stock, and critical facilities such as community services facilities, government buildings, public safety facilities, and public works facilities. This information was compiled by assessing the potential impacts from each hazard using Geographic Information System (GIS) data. The resulting information identifies the full range of hazards that each participating jurisdiction could face and the potential social impacts, damages, and economic losses. The results of the analysis are provided in each jurisdiction-specific appendix, Appendices G – I.

1.4.5 Section 6: Capability Assessment

Section 6 identifies the recommendations for the capability assessment from the California Emergency Management Agency (CalEMA) and the results of the capability assessment for the participating tribal jurisdiction. The assessment for each participating jurisdiction is provided in the jurisdiction-specific appendix, Appendices G – I.

In each appendix, the capability assessment evaluates the human and technical, financial, and legal and regulatory resources available for hazard mitigation for each participating jurisdiction. The results of the capability assessment in each appendix also list current, ongoing, and completed mitigation projects and programs for each participating jurisdiction.

1.4.6 Section 7: Mitigation Strategy

Section 7 provides a blueprint for reducing the potential losses identified in the vulnerability analysis. The Planning Committee created a list of over two dozen mitigation projects. Through an evaluation and prioritization process described in this section, each participating jurisdiction selected high-priority projects to include in the mitigation action plan.

1.4.7 Section 8: Plan Maintenance

Section 8 describes the formal plan maintenance process to ensure that the multi-jurisdictional LHMP remains an active and applicable document. The process includes monitoring, evaluating, and updating the plan (Appendix F, Plan Maintenance); monitoring mitigation projects and closeout procedures (Appendix F, Plan Maintenance); implementing the plan through existing planning mechanisms; and achieving continued public involvement.

1.4.8 Section 9: References

Section 9 includes references used to develop this document.

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2.1 ADOPTION DOCUMENTATION

The requirements for the adoption of this multi-jurisdictional LHMP by the participating local governing body, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PREREQUISITES

Adoption by the Local Governing Body

Requirement §201.6(c)(5): [The local hazard mitigation plan **shall** include] documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has formally adopted the plan.

Element

- Does the new or updated plan indicate the specific jurisdictions represented in the plan?
- For each jurisdiction, has the local governing body adopted the new or updated plan?
- Is supporting documentation, such as a resolution, included for each participating jurisdiction?

Source: FEMA 2008.

Madera County, the City of Madera, the North Fork Rancheria of the Mono Indians, and Madera County Office of Education are the local and tribal jurisdictions represented in this multi-jurisdictional LHMP and meet the requirements of Section 409 of the Stafford Act and Section 322 of the DMA 2000.

The local governing body of Madera County, City of Madera, North Fork Rancheria of the Mono Indians, and the Madera County Office of Education have adopted this multi-jurisdictional LHMP by resolution. A scanned copy of each resolution is included in Appendix B.

Additional Tribal requirements in DMA 2000 and its implementing regulations for the North Fork Rancheria are described below.

DMA 2000 REQUIREMENTS: PREREQUISITES

Adoption by the Tribal Governing Body

Requirement §201.7(c)(5): The plan must be formally adopted by the governing body of the Indian Tribal government prior to submittal to FEMA for final review and approval.

Element

Has the governing body of the Indian Tribal government adopted the new or updated plan?

Is supporting documentation, such as a resolution, included?

Does the plan provide assurances that the Tribe will continue to comply with all applicable Federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c), and will amend its plan whenever necessary to reflect changes in Tribal or Federal laws and statutes as required in 44 CFR 13.11(d).

Source: FEMA 2009.

The North Fork Rancheria will continue to comply with all applicable federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c), and will amend its plan whenever necessary to reflect changes in Tribal or federal laws and statutes as required in 44 CFR 13.11(d).

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This section describes the planning efforts involved in the preparation of the plan including:

- Narrative and schedule of the planning process
- Planning Committee members
- Steering Committee members
- Public outreach
- Review and incorporation of existing plans, studies, reports, and technical information

The requirements for the planning process, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PLANNING PROCESS

Documentation of the Planning Process
Requirement §201.6(b): In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): [The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

Element

- Does the new or updated plan provide a narrative description of the process followed to prepare the plan?
- Does the new or updated plan indicate who was involved in the current planning process? (For example, who led the development at the staff level and were there any external contributors such as contractors? Who participated on the plan committee, provided information, reviewed drafts, etc.?)
- Does the new or updated plan indicate how the public was involved? (Was the public provided an opportunity to comment on the plan during the drafting stage and prior to the plan approval?)
- Does the new or updated plan indicate that an opportunity was given for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process?
- Does the planning process describe the review and incorporation, if appropriate, of existing plans, studies, reports, and technical information?

Source: FEMA 2008.

3.1 SUMMARY OF PLANNING PROCESS

This planning process was organized and completed to meet all requirements. The relevant activities included formation of a broadly based stakeholders group (Steering Committee) from throughout the planning area and representatives of various state and federal governmental agencies and non-governmental groups who provide services in, have facilities in, or have jurisdictional responsibilities for activities or programs in Madera County. The process also included forming a smaller Planning Committee, primarily representative of the participating jurisdictions, which met several times; announcing and conducting two public meetings; drawing on the most current and best available studies, plans, and other relevant documents; and

conducting individual and small group interviews for data collection and document review purposes. These items are discussed in more detail below.

3.2 SCHEDULE

Table 3-1 (LHMP Schedule) below shows the key activities organized into four phases and the project's schedule.

Table 3-1. LHMP Schedule

Phase	Task	Aug 2009	Sept 2009	Oct 2009	Nov 2009	Dec 2009	Jan 2010	Feb 2010	Mar 2010	April 2010	May 2010	June 2010	July 2010	Aug 2010	Sept 2010
Phase 1	Project Initiation	✓													
	Plan Update Preparation	✓	✓												
	Meeting		✓												
	Existing Studies/Data Collection		✓												
Phase 2	Hazard Profiles		✓	✓											
	Meeting				✓										
	Inventory Assets					✓	✓	✓							
	Estimate Losses							✓							
	Meeting								✓						
	Public Workshops								✓						
	Capability Assessment							✓	✓						
	Mitigation Goals and Actions									✓					
	Jurisdiction-Specific Appendices							✓	✓	✓	✓				
	Plan Update Documentation									✓					
Phase 3	Preliminary Draft Plan										✓				
	Meeting											✓			
	Public Draft Plan												✓		
Phase 4	Final Draft Plan													✓	
	Adoption Support														✓
	Final Plan & Project Closeout														✓

3.3 PLANNING COMMITTEE

The Planning Committee, which was formed following the first Steering Committee Meeting, met four times during the planning process. Table 3-2 below lists the members. Further information is presented in Appendix D, which contains meeting agendas and notes. The Planning Committee's roles were essential to the completion of this LHMP.

Table 3-2. Planning Committee

Name	Department or Agency	Key Input
Allinder, Norman	Madera County RMA Planning.	Plans, technical data, document review
Anderson, John	Madera County Sheriff	Leadership
Anderson, Lisa	Madera County Fire	Program data, document review
Arteaga, Susan	Madera County Dept. Social Svc.	Program data, document review
Barney, Carol	Madera County Public Health	Plans, technical data, document review
Beach, Ray	Madera County RMA	Plans, technical data, document review
Benard, Frank	Madera County Sheriff	Liaison
Clancy, Dwight	Madera Irrigation Dist.	Liaison, technical data, document review
Cox, Geri	Madera County Dept. Education	Liaison, technical data, document review
Cummins, Steve	Madera County Assessor's Office	Technical data, and document review
Cummins, Terri	Madera County Social Services	Liaison, document review
Duncan, Jyl	Madera County Sheriff	Meeting support, reporting
Farley, Greg	Madera County RMA Engineers	Plans, technical data, document review
Frazier, Steve	City of Madera Police Dept.	Liaison, document review
Gardner, Lori	Madera County RMA Planning	Plans, technical data, document review
Gray, Brett	Madera Irrigation Dist.	Liaison, technical data, document review
Hendrickson, Bonnie	Madera County Assessor	Technical data, document review
Hill, Regie	Lower San Joaquin Levee Dist.	Liaison, technical data, document review
Hansard, Christi	North Fork Rancheria	Liaison, technical data, document review
Helmuth, Keith	City of Madera Engineering	Plans, technical data, document review
Herman, David	Madera County Counsel	Contract management
Hoevertsz, Johannes	Madera County Roads Dept.	Plans, technical data, and document review
Holtz, John	City of Madera	Plans, technical data, document review
Hudecek, Phil	Madera County Environ. Health	Plans, technical data, document review
Irion, David	Madera County Fire	Technical data, document review
Janes, Jeff	Madera County RMA Planning	Plans, technical data, and document review
Keenan, Deborah	Madera County Fire	Plans, technical data, document review
Kidwell, Toms	Madera County Assessor's Office	Technical data, document review

Table 3-2. Planning Committee

Name	Department or Agency	Key Input
Kime, Michael	City of Madera Police Dept.	Liaison, document review
Kwok, Annette	City of Madera Public Works	Plans, technical data, and document review
Linderholm, Kimberly	Madera County Office Education	Liaison to each school district, technical data, document review
Marr, Dexter	Madera County Environ. Health	Plans, technical data, and document review
McCandless, Darin	Madera County Administration	Insured values, document review
Noblett, David	Chowchilla Police Department	Liaison (its plan is in process)
Norman, Steven	Madera County RMA Special Dist.	Plans, technical data, document review
Padilla, Michael	Madera County Info. Technology	Technical assistance
Phillips, Bradley	Madera County RMA Roads	Plans, technical data, document review
Riar, Opie	Madera County Office Education*	Plans, technical data, document review
Rolan, Robert	Madera County Ag/Com Weight & Measures	Technical data, document review
Seslowe, Jay	Madera County Ag/Com Weight & Measures	Technical data, document review
Silva, Wendy	City Madera Human Resources	Plans, technical data, document review
Stanovich, Janet	Madera County OES	Project coordination
Upton, Joanne	City of Chowchilla	Liaison (its plan is in process)

3.3.1 Planning Committee Meeting Summaries

August 27, 2009

At this inaugural meeting, the Robert Olson Associates (ROA)/URS team explained the objectives of the multi-jurisdictional LHMP planning process and the DMA 2000 requirements; why national emphasis was being placed on reducing potential future disaster losses; and types of mitigation funding available and example projects. The team also reviewed the plan development process and schedule. Public outreach mechanisms were discussed, and other materials about identifying and selecting hazards were distributed and discussed. It was decided at this initial meeting that a broadly based Steering Committee and a subgroup, the Hazard Mitigation Planning Committee, would be created. The latter would be composed principally of members from the participating organizations.

November 19, 2009

The Planning Committee met, and several items from the August 27, 2009 meeting were reviewed. Emphasis was placed, however, on identifying the hazards to be analyzed for the County's LHMP, how the analyses would be done, and information that would be needed; the purpose of the capability assessments and the data needed to support their preparation; framing some possible mitigation goals and the need to identify specific mitigation projects as the process evolves.

The participation of two tribes, the City of Chowchilla, and special districts was reviewed. The North Fork of the Mono Indians will participate; the Chuckchansi Tribe and the City of Chowchilla may provide liaison as each is updating or preparing its own LHMP; and special districts are included within the County's portion of the LHMP or in a neighboring county's (e.g., Fresno County) LHMP.

February 10, 2010

This Planning Committee meeting focused on reviewing the preliminary hazards data and maps and explaining how those with potential local impacts (e.g., floods) could be addressed from a mitigation project viewpoint while others (e.g., drought) could be recognized but little could be done to mitigate such hazards. Extensive time was devoted to the subject of capability assessments and all of the information that would be needed to support their completion. Preliminary discussions were held about public meetings and the development of the mitigation strategy.

March 31, 2010

The Planning Committee was briefed on the final hazard maps and the draft asset data; the updated vulnerability analyses, where the members were advised to concentrate on those assets exposed to the highest risks; and the need to complete the capability assessments, where some data was still needed. Most of the time was spent on the scope of the mitigation strategy development and how projects could be identified, described, and then included in the draft LHMP.

April 9, 2010 (Project Development Subcommittee meeting)

As a follow-up to the March 31 meeting, a subcommittee was formed to identify specific mitigation projects for inclusion in the LHMP. It was composed of county agency representatives. The ROA/URS team reviewed the Mitigation Action Plan format and requirements, with the county staff preparing subsequent project descriptions. ROA/URS followed this up with similar meetings with the City of Madera, Madera County Office of Education, and the North Fork Rancheria.

3.4 STEERING COMMITTEE

The project's Steering Committee consisted of a wide spectrum of stakeholders with responsibilities for providing services, having facilities in, or exercising jurisdiction in Madera County. Some examples include the California Department of Corrections and Rehabilitation, National Weather Service, American Red Cross, some special districts, CalFIRE, and the California Department of Transportation. Table 3-3 below lists the members.

The Steering Committee met first on August 27, 2009 to help launch the planning process and again on September 2, 2010 for purposes of reviewing the draft LHMP before completion and formal adoption.

Table 3-3. Steering Committee

Name	Department or Agency	Key Input
Adams, Sandra	CHP-Eastern Madera County	Oversight, document review
Alberta, Joe	Chukchansi Tribal Government	Liaison
Banks, Chuck	Madera County RACES	Oversight, document review
Bigelow, Frank	Madera County Supervisor Dist. 1	Leadership
Blankenship, Robert	Valley State Prison for Women	Oversight, document review
Blessing, Dennis	Madera County Veterans Svc.	Oversight, document review
Boyer, Lonn	Madera County Human Resources	Oversight, document review
Brotherton, James	National Weather Service	Technical data, document review
Brown, Jim	Cal EMA Sacramento	Oversight, document review
Buckles, Bob	Madera County Fire Safe Council	Oversight, document review
Burdette, Tom	SPCA	Liaison, document review
Burns, Michael	Valley State Prison for Women	Oversight, document review
Calkins, Paul	Cal EMA Inland Region 5	Oversight, document review
Cargill, Rhonda	Madera County BOS	Leadership
Connal, Robert	Madera County Information Tech.	Oversight, technical services
Cotterell, G.	CA Dept. Corrections & Rehab.	Oversight, document review
Craig, Elaine	Madera County Workforce Assistance Ctr.	Oversight, document review
DeVoe, Jon	Dept. Transportation, Cal/Trans	Technical data, document review
Dominici, Ronn	Madera County Supervisor District 3	Leadership
Dupree, Rich	Madera County Probation	Oversight, document review
Evans, Roy	Madera County Fire	Oversight, document review
Field, Tamala	Center for Independent Living	Oversight, document review
Fortner, Bart	Central CA Women's Facility	Liaison, document review
Gonzales, Leticia	Madera County BOS	Leadership
Gross, Kirsten	Madera County Animal Control	Oversight, document review
Habben, Jeannie	Coarsegold/Fresno Watershed	Oversight, document review
Hernandez, Joe	Madera County Grounds Maint.	Oversight, document review
Hutchinson, Dale	Madera County Fire	Oversight, document review
Jarvis, Glenna	Madera County BOS	Leadership
Koehler, Stan	Madera County Administration	Oversight, document review
Konno, David	AmeriCorps	Liaison
Lynch, Dan	Central CA EMS Agency	Liaison
Macedo, Tulio	Agronomic Crops/Weed Control Advisor	Oversight, document review

Table 3-3. Steering Committee

Name	Department or Agency	Key Input
Macias, David	Dept. Transportation, Cal/Trans	Oversight, document review
Magos, Ignacio	Madera County Grounds Maint.	Oversight, document review
Martinez, Sharon	American Red Cross	Oversight, document review
McClurg, Tim	Dept. Transportation, Cal/Trans	Technical data, document review
McDougald, Neil	UC Davis Extension	Oversight, document review
McMeehan, Darin	Madera County Sheriff	Oversight, document review
Melton, Janice	Madera County Behavioral Health	Liaison, document review
Mendanhall, Steve	National Weather Service	Technical data, document review
Miller, Walter	Valley State Prison for Women	Oversight, document review
Miranda, Maria	Madera County BOS	Leadership
Moss, Vern	Madera County Supervisor District 2	Leadership
Nabors, M.J.	Community Action Partnership	Oversight, document review
Papagni, Douglas	Madera County Dept. Corrections	Oversight, document review
Paris, David	CHP-Madera	Oversight, document review
Prentice, David	Madera County-County Counsel	Legal considerations
Rivera, Jose	Valley State Prison for Women	Oversight, document review
Rodriguez, Max	Madera County Supervisor District 4	Leadership
Salvador, Michael	Madera County Sheriff	Oversight, document review
Sample, Scott	Madera Fairgrounds	Oversight, document review
Schoonard, Greg	CA Dept. Corrections & Rehab.	Oversight, document review
Sears, John	Madera County Administration	Oversight, document review
Shepard, Tom	CA Highway Patrol	Oversight, document review
Vaughn, Mike	Triple E Large Animal Rescue	Oversight, document review
Vigil, Felix	Madera Rescue Mission	Liaison
VonFlue, Steve	Madera County Central Garage	Liaison
Wheeler, Tom	Madera County Supervisor Dist. 5	Leadership
White, Doug	Madera County Boot Camp	Liaison
White, Justin	Madera County BOS	Leadership
Williams, Tim	Central California EMS	Liaison

3.5 PUBLIC OUTREACH

The plan development process included several opportunities for public information and participation. Initial information was distributed by the Sheriff's Department via a media release to all local electronic and press contacts (including weekly newspapers in the smaller

communities), and two evening public meetings were held (Madera, March 31, 2009 and Oakhurst, March 30, 2009). Nine people attended the Oakhurst meeting, and since no one attended the meeting in Madera, the Sheriff terminated the meeting after waiting 30 minutes.

In addition, a public comment period of two weeks was available online the last two weeks of August during the Final Draft review process. Appendix E contains additional information about the plan kick-off and public meetings.

Information was available at each public meeting about the governing law and regulations, the concept and examples of mitigation, the range of hazards relevant to the Madera County LHMP, the scope of the mitigation plan, and the work processes and schedules being followed. Useful discussions occurred with Madera County Office of Emergency Services (OES) noting some issues related primarily to emergency preparedness and the recognized difficulties associated with mitigating some hazards, such as severe valley fogs.

3.6 INCORPORATION OF EXISTING PLANS AND OTHER RELEVANT INFORMATION

During the planning process, the consultants reviewed and incorporated from existing plans, studies, and reports. Key local, state, and federal information sources integrated into this document are listed below, and additional references are provided in Section Nine.

- County of Madera, Sheriff's Department, 2010, *Operational Area Emergency Operations Plan.* This newly updated and approved plan provided basic background information on recognized local hazards, the County's emergency services program and organization, and other information, some of which was directly applicable to the LHMP, such as evacuation routes for floods and wildfires.
- County of Madera, Planning Department, October 24, 1995, *General Plan Background Report*. This detailed eight chapter report required by California's general planning law provided valuable data to support the LHMP. Of special importance were the chapters on Public Facilities and Services (including Fire Protection, Drainage and Flood Control, and General Government) and Safety (including Seismic and Geologic Hazards, Flood Hazards, Fire Hazards, and Hazardous Waste). It is being used to support the County's updating of its *General Plan*.
- City of Madera, October 7, 2009, *General Plan, Chapter 6: Health and Safety Element*. This portion of the recently adopted *General Plan*, addresses key public safety subjects relevant to the City of Madera. Of particular importance were the sections on Geologic Hazards, Hazardous Materials, Flooding and Dam Inundation, Fire Protection, and Code Enforcement. Many of the identified actions are reflected in this LHMP.
- City of Madera, 2010 (pending), *Emergency Response Plan*. This pending revision to the City's Emergency Operations Plan will fulfill one of the actions listed in the above General Plan chapter. The plan will update the City's authorities, Emergency Management Organization (EMO), response and support functions and assignments, intergovernmental operational relationships and mutual aid, and similar items. Detailed emergency action checklists and resources information will be included.

- State of California, California Emergency Management Agency, 2007, *Multi-Hazard Mitigation Plan*. This updated version of the original 2004 plan provides the basis for hazard mitigation planning in California, provides an overview of hazards and risks, and a variety of directly related subjects. Of particular importance to this LHMP were the hazards, risks, and vulnerabilities information which, when coupled with local information, provided the best available information for use in Madera County. In addition, the state plan described state-local relationships, which are reflected where needed in this plan. For example, Cal FIRE provides services from its own facilities and via services contracts from locally owned facilities.

A hazard analysis includes the identification and screening of each hazard and then the profiling of each hazard. The hazard analysis includes natural, human-caused, and technological hazards. Natural hazards result from unexpected or uncontrollable natural events of significant size and destructive power. Human-caused hazards result from human activity and include technological hazards. Technological hazards are generally accidental or result from events with unintended consequences (for example, an accidental hazardous materials release).

- Per the local mitigation planning requirements, this hazard analysis consists of the following two steps:
- Hazard identification and screening
- Hazard profiles

4.1 HAZARD IDENTIFICATION AND SCREENING

The requirements for hazard identification, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: RISK ASSESSMENT

Identifying Hazards

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the type of all natural hazards that can affect the jurisdiction.

Element

- Does the new or updated plan include a description of all of the types of all natural hazards that affect the jurisdiction?

Source: FEMA 2008.

For the first step of the hazard analysis, the Planning Committee developed a list of all types of natural and human-caused hazards, including the hazards identified in the Statewide HMP, as a point of reference. Next, as shown in Table 4-1, the Planning Committee evaluated and screened this comprehensive list of potential hazards based on a range of factors, including prior occurrence (Presidentially declared and state-declared emergencies and disasters that have occurred in Madera County over the past 40 years), perception of the relative risk presented by each hazard, and the ability to mitigate each hazard.

Table 4-1. Identification and Screening of Hazards

Hazard Type	Subhazard	State Proclamation	Presidential Declaration	Identified in the 1995 General Plan Background Report	Identified in 2007 State HMP	Hazard to be Profiled in the 2010 LHMP
Avalanche				No	Yes: Additional Hazard	No
Civil Unrest				No	Yes: in Appendix	No
Dam Failure				Yes	Yes: Additional Hazard	Yes
Drought		GAAS:033:07 (2007) N/A (1976)		No	Yes: Additional Hazard	Yes
Energy Emergency/Power Disruption				No	Yes: Energy Shortage	No
Flood		N/A (1997) OEP 253-DR-CA (1969)	1646-DR (April 2006)	Yes	Yes: Primary Hazard	Yes
Fog				No	Yes: Severe Weather and Storms	Yes
Hailstorm				No	Yes: Severe Weather and Storms	Yes, included in the Winter Storm category
Hazardous Material Event				No	Yes: Additional Hazard	Yes
Heat				No	Yes: Additional Hazard	Yes
Hurricane				No	Yes, in Appendix	No
Infectious Disease				No	Yes: Epidemic/Pandemic	No
Landslide				Yes	Yes: Secondary Hazard	No
Levee Failure				No	Yes: Secondary Hazard	No
Seismic	Ground Shaking			Yes	Yes: Primary Hazard	Yes
	Liquefaction			Yes	Yes: Primary Hazard	No
	Expansive Soil/Subsidence			Yes	No	No
	Earthquake-Induced Landslide			Yes	Yes: Primary Hazard	Yes
	Tsunami/Seiche			Yes	Yes: Secondary Hazard	No

Table 4-1. Identification and Screening of Hazards

Hazard Type	Subhazard	State Proclamation	Presidential Declaration	Identified in the 1995 General Plan Background Report	Identified in 2007 State HMP	Hazard to be Profiled in the 2010 LHMP
Severe Wind				No	Yes: Severe Weather and Storms	Yes
Tornado				No	Yes: Severe Weather and Storms	No
Volcano				Yes	Yes: Additional Hazard	No
Wildfire		N/A (2003)		Yes	Yes: Primary Hazard	Yes
Winter Storm	Flood, Ice, Wind	N/A (1998) (freeze) DR-1044 (1995) DR-979 (1992) DR-894 (1990) (freeze) DR-758 (1986) DR-677 (1982-1983) (winter storm) N/A (1982) (rains causing agricultural losses) N/A (1972)	682-DR (1982) 1646-DR (2006) (storms, landslides, and mudslides)	No	Yes: Severe Weather and Storms	Yes

HMP = Hazard Mitigation Plan
LHMP = Local Hazard Mitigation Plan
Presidential declared disasters since 1988 are indicated by disaster number.
* Hazards are classified in the State Hazard Mitigation Plan as Primary Hazards, Secondary Hazards, and Additional Hazards. Some hazards are also discussed in an Appendix. State of California Office of Emergency Services, 2007.
** A description, including nature, history, location, extent, and probability, of each hazard selected to be profiled in the 2010 LHMP, is provided in Section 1.2.

The Planning Committee determined that the following hazard groups pose the greatest threat to Madera County:

- Seismic hazards
  - Ground shaking
  - Earthquake-induced landslide
- Weather-related hazards
  - Drought
  - Flood
  - Fog
  - Heat
  - Severe wind and tornado
  - Winter Storm
- Other Hazards
  - Wildfire
  - Dam failure
  - Levee break
  - Hazardous material event

The remaining hazards excluded through the screening process were considered to pose a lower threat to life and property in Madera County due to the low likelihood of occurrence or the low probability that life and property would be significantly affected. Should the risk from these hazards increase in the future, the 2015 LHMP can be updated to incorporate vulnerability analyses for these hazards.

4.2 HAZARD PROFILE

The requirements for hazard profiles, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: RISK ASSESSMENT

Profiling Hazards

Requirement §201.6(c)(2)(i): [The risk assessment shall include a] description of the location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

Element

- Does the risk assessment identify the location (i.e., geographic area affected) of each natural hazard addressed in the new or updated plan?
- Does the risk assessment identify the extent (i.e., magnitude or severity) of each hazard addressed in the new or updated plan?
- Does the plan provide information on previous occurrences of each hazard addressed in the new or updated plan?
- Does the plan include the probability of future events (i.e., chance of occurrence) for each hazard addressed in the new or updated plan?

Source: FEMA 2008.

The specific hazards selected by the Planning Committee for profiling have been examined in a methodical manner based on available information about the following factors:

- Nature
- History
- Location
- Extent and probability of future events

This LHMP is drawn from several sources to provide data on the nature, history, and extent of each identified hazard. These sources are listed in Section 9. To determine the location of the hazards in relation to the County, the URS GIS team created maps for each hazard, drawing from publicly available data as well as data provided by the County. These maps are included in Appendix C, Figures.

The hazards profiled for Madera County are presented in the rest of Section 5.2 in the following order: seismic hazards, weather-related hazards, and other hazards, which include wildfire, dam failure, levee failure, and hazardous material event. The order of presentation does not signify the level of importance or risk.

4.2.1 Seismic Hazards

For this 2010 LHMP, seismic hazard profiles are provided for ground shaking and earthquake-induced landslide.

4.2.1.1 Ground Shaking

Nature

An earthquake is generally a result of displacement along a geologic fault resulting in the release of accumulated strain. The effects of a large earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and, after just a few seconds, can cause significant damage and extensive casualties. The most common effect of earthquakes is ground

motion, or the shaking of the ground during an earthquake. Ground shaking is caused by seismic waves traveling in the earth's interior or along the earth's surface.

The severity of an earthquake can be expressed in terms of intensity. Intensity measurements are based on the effects and damage and observed effects on people to the natural and built environment. It varies from place to place, depending on the location with respect to the earthquake fault rupture. The intensity generally increases with the amount of energy released, which is proportional to the size of the earthquake, and decreases with distance from the causative fault.

The scale most often used to measure intensity is the Modified Mercalli (MM) intensity scale. As shown in Table 4-2, the MM intensity scale consists of 12 increasing levels that range from imperceptible to catastrophic destruction. With the advent of modern instrumentation, ground-shaking intensity can be quantitatively measured. It is measured in terms of acceleration, velocity, or displacement.

Peak ground acceleration (PGA) is a common ground motion parameter used by engineers. It measures the earthquake's intensity by quantifying how hard the earth shakes in a given location. PGA is measured in units of the gravitational rate of acceleration (1 *g* = 980 centimeters/second²). Magnitude (M) is the measure of the earthquake's size and is often based on the amplitude of the earthquake waves recorded on instruments. The first magnitude scale was the Richter local magnitude scale. The magnitude scale used by seismologists is the moment magnitude (M) scale. Table 4-2 shows an approximate correlation between M, MM intensity, PGA in *g*s, and the perceived shaking.

Table 4-2. Magnitude/Intensity/Ground-Shaking Comparisons

Magnitude (M)	MM Intensity	Perceived Shaking
0–4.3	I	Not Felt
	II-III	Weak
4.3–4.8	IV	Light
	V	Moderate
4.8–6.2	VI	Strong
	VII	Very Strong
6.2–7.3	VIII	Severe
	IX	Violent
	X	Very Violent
7.3–8.9	XI	
	XII	

Source: USGS 2004.

History

Figure C-1 shows the earthquakes of magnitude 4.5 or higher that have occurred in and near Madera County from 1872 to the present (no earthquakes occurred in this time frame with a magnitude between 4.5 and 6.0). These earthquakes are also listed in Table 4-3 below.

Table 4-3. Historical Earthquakes Greater than or Equal to Magnitude 6.0 in and near Madera County, 1950-2009

Year	Magnitude	Depth from Surface (kilometers)	County
1872	6.6	0	Mono
1885	6.2	0	San Benito
1927	6	0	Mono
1941	6	0	Mono
1980	6.1	5	Mono
1980	6	13	Fresno
1983	6.5	10	Fresno
1986	6.2	9	Mono

Source: USGS, 2009 and California Geological Survey, 2009.

During this time, only one earthquake has occurred in Madera County; that earthquake had a magnitude of 4.6. However, numerous earthquakes have occurred on the faults to the east of Madera County, including three earthquakes with a magnitude greater than 6.0. Two earthquakes with a magnitude greater than 6.0 also occurred to the southwest of the County, one of which occurred along the San Andreas Fault.

Location

Madera County is in the Central Valley, Foothill, and Sierra Nevada regions of California, and in an area crossed by very few faults. One fault does cross through the southeastern portion of Madera County; this is an unnamed fault that is part of the Hartley Springs Fault Zone. Other major fault and fault zones nearby are described in Table 4-4 below. Also, please see Figure C-2 for a map of the faults located near the County.

Table 4-4. Faults in and near Madera County

Location to Madera County	Fault Name
Near eastern border	Hartley Springs Fault Zone
	Hilton Creek Fault
	Silver Lake Fault
Approximately 35 miles west	Ortigalita Fault Zone
Approximately 40 miles west	San Andreas Fault Zone
Approximately 50 miles west	Rinconada Fault Zone

Source: California Geological Survey, 2007.

Extent and Probability of Future Events

As noted earlier, the intensity of an earthquake can be expressed in terms of PGA, which is a measure of how hard the ground will shake in a given geographic area. PGA is measured in *g*, which is the unit of the gravitational rate of acceleration (1 g = 980 centimeters/second). Figure C-3 shows the level of ground motion that has an annual probability of 1 in 2475 of being exceeded each year, which is equal to a 2 percent probability of being exceeded in 50 years. As such, this map shows that there are no areas in the County susceptible to severe to violent shaking (MMI VIII-X). This map was developed by the USGS using various earthquake fault models, as well as data from historic earthquakes.

The eastern portion of the County, which is closest to several faults and fault zones, has a high probability of experiencing strong shaking. The remainder of the County is likely to experience light to moderate shaking. Based on these data, Madera County will likely experience an earthquake from one of the known major faults in the eastern or western portion of the state in the next 50 years. The probability of an earthquake that might produce large ground motions is restricted to occurring on the extreme eastern portion of the County.

4.2.1.2 Earthquake-Induced Landslide

Nature

Landslide is a general term for the dislodgment and fall of a mass of soil or rocks along a sloped surface, or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rock falls, rockslides, debris avalanches, debris slides, lateral spreads, and slump-earth flows. Landslides can be initiated by rainfall, earthquakes, volcanic activity, changes in groundwater, disturbance and change of a slope by man-made construction activities, or any combination of these factors. Earthquake-induced landslides occur as a result of ground shaking. The most common earthquake-induced landslides include shallow rock falls, disrupted rock slides, and disrupted slides of earth and debris.

History

No major earthquake-induced landslides or other major landslides have been detected in Madera County. However, due to the possibility of earthquakes in the region, and the location of some

areas in the county containing steep slopes, an earthquake-induced landslide is a possibility in Madera County.

Location

The National Landslide Hazards Map from the USGS classifies areas for their incidence and susceptibility to landslides. According to this map, the entirety of Madera County is classified as having low incidence of and susceptibility to landslides. However, the data used to create this map are not suitable for local planning because the data are highly generalized, owing to the small scale and the scarcity of precise landslide information for much of the country. Instead, these data are intended for geographic display and analysis at the national level, and for large regional areas. No other data related to landslide incidence or susceptibility were found.

Extent and Probability of Future Events

The extent of an earthquake-induced landslide is unknown, as it depends on the landslide characteristics and materials and on the settings in which the landslide occurs. As noted above, shallow rock falls, disrupted rock slides, and disrupted slides of earth and debris are the most abundant types of earthquake-induced landslides; earth flows, debris flows, and avalanches of rock, earth, or debris typically transport material the farthest.

USGS studies show that earthquakes as small as M 4.0 may dislodge landslides from susceptible slopes, and larger earthquakes can generate tens of thousands of landslides within the near epicentral zone. While Madera County has a low incidence and susceptibility to landslides according to the USGS, the data are not highly localized. Based on past history and a lack of detected landslides in Madera County in the past, it is assumed that the probability of future landslides is low.

4.2.2 Weather-Related Hazards

Weather-related hazard profiles have been developed for drought, flood, fog, heat, severe wind and tornadoes, and winter storms in the County and surrounding region. This section describes those profiles.

4.2.2.1 Drought

Nature

Drought is a prolonged period of dryness in which precipitation is less than expected or needed in a given geographic location or climate over an extended period of time. For much of human history, drought and its devastations have been seen as an unpredictable, unavoidable calamity. However, that viewpoint is giving way to the recognition that climatic fluctuations occur everywhere, and that periods of low precipitation are a normal, recurrent feature of climate.

Drought is commonly referenced in terms of its effects on crops, and the direct environmental effects (such as crop loss or failure, livestock death or decreased production, wildfire, impaired productivity of forest land, damage to fish habitat, loss of wetlands, and air quality effects) to social effects (from economic and physical hardship and increased stress on residents of a drought-stricken area). In Madera County, the primary impact of drought would be crop loss or failure and livestock death or decreased production, but all the effects listed above could be relevant.

Drought can be a meteorological phenomenon, resulting from abnormally low precipitation or an institutional phenomenon, resulting from poor management of water supply and reserves, and is often due to a combination of these factors. Understanding drought as a recurring feature of climate is a first step toward creating management practices that effectively mitigate its effects.

History

Drought is a cyclic part of the climate of California, occurring in both summer and winter, with an average recurrence interval between 4 and 10 years. Recent droughts in California history are listed in Table 4-5 below.

Table 4-5. Recent Droughts in California

Year(s)	Areas Affected	Disaster Proclamation
1917-1921	Statewide except central Sierra Nevada and north coast	No
1922-1926	Statewide except central Sierra Nevada	No
1928-1937	Statewide	No
1943-1951	Statewide	No
1959-1962	Statewide	No
1976-1977	Statewide, except for southwestern deserts	Statewide disaster proclamation
1987-1992	Statewide	Local drought emergency declaration in Madera County in 1991
2007-2009	Statewide	Statewide disaster proclamation

Source: Paulson, R.W., Chase, E.B., Roberts, R.S., and Moody, D.W., Compilers, National Water Summary 1988-89 Hydrologic Events and Floods and Droughts: U.S. Geological Survey Water-Supply Paper 2375; Cal OES, 2007.

The State of California is in the midst of a drought that is ongoing at the time of the writing of this LHMP, from 2007-2010. Water Year 2007-08 resulted in 72 percent of average annual precipitation across the state, and Water Year 2008-09 resulted in 76 percent of average annual precipitation (each water year is between October 1 and September 30). As of March 2010, statewide precipitation stood at 63 percent of average for this water year. Also, as of April 22, 2010, statewide reservoir storage was 94 percent of average for the date, and 71 percent of capacity, with some individual key reservoirs much lower. In contrast, at the end of 1991, near the end of the last major statewide drought, storage in reservoirs was at 54 percent of average (State of California, Department of Water Resources, Drought Operations Center 2009).

According to a team of UC Davis researchers, 2009'swater shortages have led to 21,000 jobs lost in the San Joaquin Valley, of which 16,000 are due to the drought alone, and 5,000 are due to environmental pumping restrictions. Because a portion of Madera County is located in the San Joaquin Valley, these losses are assumed to have affected Madera County. Also, the 2009 water shortages in the Valley are projected to result in $703 million in lost agricultural gross revenue (expressed in 2008 dollars) (State of California, Department of Water Resources, Drought Operations Center 2009).

Location

All of Madera County and the participating jurisdictions are equally vulnerable to drought.

Extent and Probability of Future Events

Drought is difficult to measure, due to its diverse geographical and temporal nature and its operation on many scales. Despite that difficulty, various indices for measuring and characterizing drought can be useful. The Palmer Drought Indices (Palmer Z Index, Palmer Drought Index, and Palmer Hydrological Drought Index) and the Standardized Precipitation Index are most commonly used. Palmer's indices are water balance indices that consider water supply (precipitation), demand (evapotranspiration), and loss (runoff) to determine drought. The advantage of the Palmer Index is that it is standardized to local climate, so it can be applied to any part of the country to demonstrate relative drought or rainfall conditions. The Standardized Precipitation Index considers precipitation alone, comparing the probability of a region receiving a given amount of precipitation (based on historical levels) in a given time period to precipitation actually recorded.

As of September 2009, Madera County has mid-range (-1.99 to +1.99) conditions for all three of the Palmer Indices, and the Standardized Precipitation Index shows very moist (+1.30 to +1.59) conditions for the 2 months of July-August 2009. (NCDC, Current Standardized Precipitation Index, 2009b). Thus, the drought may not be extremely severe in Madera County. However, the effects of the current drought may be severe because Madera County receives water supplies from other parts of the state that are experiencing drier conditions. Based on previous events, Madera County can expect to experience a drought every 4 –10 years. Droughts in California tend to last for 2-5 years.

4.2.2.2 Flood

Nature

Flooding is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties from overflow of inland or tidal waters, from unusual and rapid accumulation or runoff of surface waters from any source, or from mudflow. Simply put, a flood is an excess of water on land that is normally dry. Floods can be caused by the overflow of excess water from a stream, river, lake, reservoir, or coastal body of water onto adjacent floodplains. Floodplains are lowlands adjacent to water bodies that are subject to recurring floods. Floods are natural events that are considered hazards only when people and property are affected. Other possible causes of floods are as follows:

- Unusual and rapid accumulation or runoff of surface waters from any source
- Mudflow, which is defined as "a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water"
- Collapse or subsidence of land along the shore of a lake or similar body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels that result in a flood as defined above

In Madera County two types of flooding occur: riverine flooding, also known as overbank flooding, due to excessive rainfall, and localized flooding.

Riverine floodplains range from narrow, confined channels in the steep valleys of mountainous and hilly regions to wide, flat areas in plains and coastal regions. The amount of water in the floodplain is a function of the size and topography of the contributing watershed, the regional and local climate, and land use characteristics. Flooding in steep, mountainous areas is usually confined, strikes with less warning time, and has a short duration. Larger rivers typically have longer, more predictable flooding sequences and broad floodplains.

Localized flooding may occur outside of recognized drainage channels or delineated floodplains due to a combination of locally heavy precipitation, increased surface runoff, and inadequate facilities for drainage and stormwater conveyance. Such events frequently occur in flat areas and in urbanized areas with large impermeable surfaces. Local drainage may result in "nuisance flooding," in which streets or parking lots are temporarily closed and minor property damage occurs.

For purposes of this plan, stormwater refers to water that collects on the ground surface or is carried in the stormwater system when it rains. In events where the amount of runoff is too great for the system, or if the stormwater system is disrupted by vegetation or other debris that blocks inlets or pipes, excess water remains on the surface. This water may "pond" in low-lying areas, often in street intersections; or enter nearby structures. Stormwater ponding, a form of localized flooding, not only creates flood problems, but also creates a pollution problem, as stormwater can pick up debris, chemicals, dirt, and other pollutants from the impervious surfaces.

History

Flood history, summarized from the *Madera County Flood Insurance Study* (FEMA, 2008), is highlighted below.

City of Madera

The Madera area is known to have experienced many floods in the past. Records show that floods occurred in 11 of the past 38 years prior to the construction of Hidden Dam in September of 1976. Flooding occurred in 1938, 1943, 1945, 1950, 1952, 1955, 1956, 1958, 1962, 1963, and 1969. Since the operation of Hidden Dam in September of 1976, no floods have occurred in the study area.

Oakhurst Community

There are no known documented significant flood problems in the community of Oakhurst. Anecdotal information from local residents indicated that there has been localized flooding, including an area along the north side of China Creek approximately 3,000 feet upstream of the Fresno River.

Madera County (unincorporated area)

Cottonwood, Root, Dry, and Schmidt Creeks, Schmidt Creek Tributary, and Madera Ranchos North and South do not have perennial flow. They are all dry from May through October. All of the channels of these streams are poorly defined. Floods produce high flows and large volumes of water that exceed channel capacities and spread overland.

In the developed area in the upper reaches of Madera Ranchos North and South, significant flooding occurred in the winter storm of 1983. There was no record made of flow amounts during that storm.

Significant flooding in 1997 on the San Joaquin River revealed new flood plains. A restudy of the San Joaquin River from SH-99 to SH-145 was conducted after floods along the river indicated a significant increase in the river's hydrology.

Table 4-6 below lists the historical floods that have occurred in the County and indicates which floods have led to presidential or state disaster declarations.

Table 4-6. Recent Floods in Madera County

Time Period	Disaster Proclamation
Winter 1969	Yes – State
Winter 1982	Yes - Federal
February 1986	Yes - Federal
January – February 1992	Yes – Federal
January – March 1995	No
January 1997	Yes - State
Winter 1998	No
April 2006	Yes – Federal
October 2007	No

Sources: FEMA, 2009; Cal EMA, 2009; Cal OES, 1999.

Location

The magnitude of flood used as the standard for floodplain management in the U.S. is a flood having a probability of occurrence of 1 percent in any given year, also known as the 100-year flood or base flood. The most readily available source of information regarding the 100-year flood is the system of Flood Insurance Rate Maps (FIRMs) prepared by FEMA. These maps are used to support the National Flood Insurance Program. The FIRMs show 100-year floodplain boundaries for identified flood hazards. These areas are also referred to as Special Flood Hazard Areas and are the basis for flood insurance and floodplain management requirements. The FIRMs also show floodplain boundaries for the 500-year flood, which is the flood level given a 0.2 percent chance of occurrence in any given year. FEMA prepared Digital FIRMs, known as a DFIRM, for Madera County in September 2008.

Figure C-4 shows the above-mentioned high risk flood hazard areas for Madera County. The areas are summarized below:

- Zone B, which is the 0.2 percent annual chance of flood hazard area. These are floodplain boundaries for the 500-year flood, as noted above. A very small portion of Madera County is placed into the Zone B hazard area.

- Zone A, AE, Zone AH, and AO, which is the 1 percent annual chance of flood hazard area. These zones are located in the western portions of the county, on land surrounding the Fresno River and to the east of the San Joaquin River. Other small areas in the southern half of the County are also classified into one of these hazard zones.
- In addition, large portions of Madera County are classified as minimal risk areas, or as areas with possible but undetermined flood hazards.

Extent and Probability of Future Events

Floods are described in terms of their extent (including the horizontal area affected and the vertical depth of floodwaters) and the related probability of occurrence. Flood studies often use historical records, such as stream-flow gages, to determine the probability of occurrence for floods of different magnitudes. The probability of occurrence is expressed in percentages as the chance of a flood of a specific extent occurring in a given year.

The following factors contribute to the frequency and severity of riverine flooding:

- Rainfall intensity and duration
- Antecedent moisture conditions
- Watershed conditions, including steepness of terrain, soil types, amount and type of vegetation, and density of development
- The existence of attenuating features in the watershed, including natural features such as swamps and lakes and human-built features such as dams
- The existence of flood control features, such as levees and flood control channels
- Velocity of flow
- Availability of sediment for transport, and the erodibility of the bed and banks of the watercourse

The following factors contribute to the frequency and severity of localized flooding:

- Inadequate carrying or holding capacity of a system (storm sewer inlets, curb and gutter streets, storm sewers, roadside ditches, culverts, creeks, rivers, lakes, etc.)

In Madera County, both riverine and stormwater flooding up to 3 feet can occur. High risk areas are all located in the western portion of the County. Although well over the majority of the county is classified as being at a minimal or undetermined risk level, some areas of risk could experience a flood in the next 100 years.

Historical occurrences indicate that Madera County can expect to experience a heavy precipitation event almost every winter; therefore, occurrences of both riverine and localized flooding are likely to occur annually. Heavy floods leading to state or presidential disaster declarations have historically occurred every 1-8 years since 1982.

4.2.2.3 Fog

Nature

Fog is defined by the National Weather Service (NWS) as "water droplets suspended in the air at the Earth's surface" (NWS, 2009a). Fog is often hazardous when visibility is reduced to ¼ mile or less.

In California's Central Valley, a type of fog known as tule fog is common. Tule fog is defined by the NWS as "Radiation fog in the Central Valley of California. It forms during night and morning hours in late fall and early winter months following the first significant rainfall." Thus, tule fog tends to form at night during California's rainy season, roughly between November 1 and March 31. The fog is formed when cold air from the Sierra Nevada mountains flows into the Central Valley at night and is unable to escape the valley due to the Coast Ranges to the west. Higher pressure air from above the mountaintops presses down on the colder, denser air, resulting in the fog.

The NWS also notes that tule fog is a leading cause of weather related-casualties in California. The fog can last for days or weeks, and is dispersed by turbulent air. Visibility under tule fog can be reduced to zero. Tule fog may also cause a light drizzle; in cold months this drizzle might freeze, causing conditions to become even more dangerous on roadways.

4.2.2.4 History

Tule fog is known to occur throughout California's Central Valley, and regularly occurs in the western portion of Madera County during the winter months.

According to data from the California Highway Patrol, 68 fog-related collisions occurred on Highway 99 in Madera County between 1997 – 2008, resulting in three casualties and three persons injured (California Highway Patrol, 2008).

Additionally, one news report from November 2006 blamed fog for an accident on Highway 145 in Madera County that killed three persons. Regionally, fog has been blamed for some large vehicle accidents. For example, on November 3, 2007, dense fog was blamed for a 100-car pileup in Fresno County on Highway 99 that resulted in two casualties.

4.2.2.5 Location

The areas most susceptible to tule fog in Madera County are the low elevation areas in the western portion of the state, specifically areas that are at 200 meters (656 feet) of elevation or lower, since tule fog only occurs in the Central Valley. Please see Figure C-5 for a map of these portions of Madera County and the surrounding region.

4.2.2.6 Extent and Probability of Future Events

Madera County is highly likely to experience tule fog, which can reduce visibility up to ¼-mile. Tule fog is likely to occur annually during the winter months in low-lying regions of the County.

4.2.2.7 Heat

Nature

According to the NWS, extreme heat occurs when the temperature reaches high levels or when the combination of heat and humidity causes the air to become oppressive and stifling.

Generally, extreme heat is considered to be 10 degrees Fahrenheit (F) above the normal temperature over an extended period of time. However, extreme heat can manifest itself in several ways:

- A period of time of sweltering humidity, which reaches levels commonly associated with moist tropical regions. Stress on the body can be exacerbated when atmospheric conditions cause pollutants to be trapped near the ground.
- An excessively dry condition, in which strong winds and blowing dust can worsen the situation.
- A rise in the heat index, the body's perception of the "apparent" temperature based on both the air's real temperature and the amount of moisture present in the air. Humidity and mugginess makes the temperature seem higher than it is. In high humidity, an 85-degree F day may be perceived as having reached 95 degrees F.

During heat or extreme heat, local NWS offices can issue heat-related messages as conditions warrant, including:

- **Excessive Heat Outlook**: when the potential exists for an excessive heat event in the next 3 to 7 days. It is designed to provide an indication of areas where people and animals may need to take precautions against the heat. It is based on a combination of temperature and humidity over a certain number of days. An outlook is used to indicate that a heat event may develop. It is intended to provide information to those who need considerable lead time to prepare for the event, such as public utilities, emergency management personnel, and public health officials.
- **Excessive Heat Watch**: when conditions are favorable for an excessive heat event in the next 12 to 48 hours. The term "watch" is used when the risk of a heat wave has increased, but its occurrence and timing is still uncertain. It is intended to provide enough lead time so those who need to set their plans in motion can do so. Also, a watch notice is issued when heat indices are in excess of 105 degrees F during the day combined with nighttime low temperatures of 80 degrees F or higher are forecast to occur for 2 consecutive days.
- **Excessive Heat Warning/Advisory**: when an excessive heat event is expected in the next 36 hours. These warnings are issued when an excessive heat event is occurring, is imminent, or has a very high probability of occurrence and is issued when a heat index of at least 105 degrees F for more than 3 hours per day for 2 consecutive days, or a heat index of more than 115 degrees F for any period of time. The warning is used for conditions posing a threat to life or property. An advisory is for less serious conditions that cause significant discomfort or inconvenience and, if caution is not taken, could lead to a threat to life and/or property.

History

The highest recorded temperature in the City of Madera, CA is 116 degrees F, recorded in 1961 (Madera Chamber of Commerce, 2009).

Table 4-7 shows recent record high temperatures recorded in Madera County.

Table 4-7. Record High Temperatures in Madera County since 1998

Month and Year	Temperature (degrees F)
July 2006	112
July 2006	111
July 2006	110
September 1998	109
August 2007	107
June 2008	107

Source: National Weather Service, 2009b.

Location

When an excessive heat event occurs, it likely affects the low-lying portions of Madera County. Once higher elevations are reached in the Sierra Nevada mountains, extremely high heat levels are less likely.

Extent and Probability of Future Events

In Madera County, heat or extreme heat is generated in the summer months. The low-lying areas of the county are prone to high temperatures when hot air is trapped between the Sierra Nevada mountain range to the east and the Coast range to the west. Data from 2005-2009 show that Madera County can expect to experience temperatures equal to or greater than 90 degrees F about 106 days every year, generally between April and October. The hottest months are July and August; these months average 30 and 29 days per month, respectively, with temperatures equal to or greater than 90 degrees F. Based on historical events, extreme heat is anticipated annually in the summer months.

4.2.2.8 Severe Wind and Tornado

Nature

Winds are horizontal flows of air that blow from areas of high pressure to areas of low pressure. Wind strength depends on the difference between the high- and low-pressure systems and the distance between them. A steep pressure gradient results from a large pressure difference or short distance between these systems and causes high winds. High winds are defined as those that last longer than 1 hour at greater than 39 miles per hour (mph) or for any length of time at greater than 57 mph.

According to the *Glossary of Meteorology* (AMS, 2000), a tornado is defined as "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Literally, in order for a vortex to be classified as a tornado, it must be in contact with the ground and the cloud base (NOAA, 2009).

The Fujita Scale (F-Scale), also known as the Fujita-Pearson Scale, rates tornado intensity based on the damage tornadoes inflict on human-made structures and vegetation. The scale goes from

F-0 (least damage) to F-5 (most damage). Each rating on the scale is described in Table 4-8 below.

Table 4-8. Tornado Classification on the F-Scale

F-Scale Number	Intensity Phrase	Wind Speed (miles per hour)	Type of Damage Done
F0	Gale tornado	40-72	Light Damage. Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards
F1	Moderate tornado	73-112	Moderate Damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant tornado	113-157	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated; cars lifted off ground.
F3	Severe tornado	158-206	Severe Damage. Roofs and some walls torn off well constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off ground and thrown.
F4	Devastating tornado	207-260	Devastating Damage. Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.
F5	Incredible tornado	261-318	Incredible Damage. Strong frame houses lifted off foundations and swept away; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel reinforced concrete structures badly damaged.

Source: NOAA, 2009.

History

In Madera County, high winds occur in the winter, generally from November through March, although high winds may also occur in other months. The National Climatic Data Center (NCDC) has recorded eight thunderstorm and high wind events in Madera County since 1957. The highest recorded wind speed was 63 knots, which is roughly equal to 72.5 miles per hour (mph); this storm was recorded in February 1998. (A knot is a unit of speed equal to one nautical mile per hour, which is equal to approximately 1.151 mph.) Two storms recorded wind speeds of 50 knots, which is equal to 57.5 mph. (NCDC, 2009a).

Eight tornadoes have been recorded in Madera County since 1950; these have all been classified as F0 or F1 tornadoes. Of these eight, five were classified as F0 (light damage) tornadoes, and three were classified as F1 (moderate damage) tornadoes. The last recorded tornado occurred in 2002.

Location

All of Madera County is subject to strong winds associated with powerful winter cold fronts. However, the eastern portions of the County located in the Sierra Nevada mountains are subject to more occurrences of high peak gusts. Wind data gathered from the National Weather Service

shows that the annual occurrence of peak wind gusts in Madera County at or equal to 50 mph range from 20 days per year to 50 days per year. Please see Figure C-6 for a map showing the number of days per year on average that wind gusts in Madera County are at or above 50 mph.

Also, recent NWS data (December 2008 – October 2009) from the Hanford Forecast Office shows peak gust speeds ranging from 29 mph (July 2009) to 47 mph (October 2009) for the City of Madera, CA. April 2009 also had a peak gust speed of 46 mph, and the month of March 2009 had a peak gust of 39 mph. All other months had peak gusts below 39mph.

Please see Figure C-7 for a map showing locations of the eight tornadoes that have occurred in Madera County since 1950. All but one of these tornadoes has occurred in the southern portion of the County; the one exception occurred in the central portion of the County, near the town of O'Neals.

Extent and Probability of Future Events

High winds above 50 mph are very likely to occur throughout Madera County, but more likely to occur in the eastern portions of the County. Based on previous events, Madera County can expect to experience at least one winter windstorm annually, and will likely experience numerous events per winter.

It is likely that tornadoes of F0 or F1 magnitude on the F-Scale will continue to occur in Madera County, particularly in the southern portion of the County. Historically, these tornadoes have occurred up to three times per decade, but some decades see zero tornadoes. Tornadoes greater than F1 intensity are unlikely to occur; thus, only moderate damage is likely to result from tornadoes in Madera County.

4.2.2.9 Winter Storm

Nature

The climate in California's Central Valley is hot Mediterranean, in which summers are hot and dry and winters are cool and damp. Mid-autumn to mid-spring comprises the rainy season. During these months, winter storms may occur.

A dominating factor in the weather of California is the semi-permanent high pressure area of the northern Pacific Ocean, sometimes called the Pacific High. This pressure center moves northward in summer, holding storm tracks well to the north, and as a result California receives little or no precipitation during that period. The Pacific high decreases in intensity in winter and moves further south, permitting storms to move into and across the State, producing widespread rain at low elevations and snow at high elevations. Occasionally the state's circulation pattern permits a series of storm centers to move into California from the southwest. This type of storm pattern is responsible for occasional heavy rains that may cause serious winter flooding.

In addition to high winds and flooding, which are described above, winter storms may bring snow to higher elevations, as well as hail, heavy rains, and/or lightning to all areas of the County.

History

A review of results from the NCDC database reveals that 18 storms causing hail have occurred in Madera County since 1957, causing up to $50,000 in property damage and up to $7.8 million in crop damage (NCDC, 2009a). Storms causing hail have occurred about every 2-3 years since 1986 but sometimes occur more frequently. Some years saw multiple storms, and most storms

occur between early November and the end of May. One recorded lightning event occurred in winter months. Twenty-three events are recorded for heavy rains, including one event causing $200,000 in property damage, and one event causing $16.6 million in crop damage. These events also occurred every 1-2 years, and sometimes occur more frequently.

Location

Many events in the NCDC database are listed as "countywide" events, and the entire County is susceptible to winter storms. However, only the higher elevation areas will experience high levels of snow and high winds, while lower elevation areas will experience heavy rains. Figure C-8 shows average snowfalls in Madera County. Higher elevations in the eastern portion of the County can average up to 72 inches of snowfall per year, while middle elevations in the central portion of the County average around 36 inches of snowfall per year. Low elevations in the southern portion of the County receive little or no snowfall.

Extent and Probability of Future Events

Winter storms remain highly likely due to Madera County's location in the inland central California area, and the history of occurrence in the past. In these events, a storm can cause up to 1.5 inches of hail, up to an inch of rain in an hour, and winds up to 45 mph.

4.2.3 Other Hazards

4.2.3.1 Wildfire

Nature

A wildfire is an uncontrolled fire spreading through vegetative fuels. Wildfires can be caused by human activities (such as arson or campfires) or by natural events (such as lightning). Wildfires often occur in forests or other areas with ample vegetation. Wildfires differ from other fires due to their large size, the speed at which the fires can spread, and the ability of the fire to change direction unexpectedly and to jump gaps, such as roads, rivers, and fire breaks.

In areas where structures and other human development meet or intermingle with wildland or vegetative fuels (referred to as the "wildland urban interface"), wildfires can cause significant property damage and present extreme threats to public health and safety.

Wildfires are naturally occurring events in the western U.S. and have been occurring for millennia. In fact, some ecological communities and plant species depend on wildfire. However, human settlement is not amenable to the short-term destruction caused by wildfires, and most areas have been practicing fire suppression for several decades. However, the practice of fire suppression often causes more intense fires to occur because the fuel load has increased greatly.

The following three factors contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas.

- **Topography:** As slope increases, the rate of wildfire spread increases. South-facing slopes are also subject to more solar radiation, making them drier and thereby intensifying wildfire behavior. However, ridgetops may mark the end of wildfire spread, as fire spreads more slowly or may even be unable to spread downhill.
- **Fuel:** The type and condition of vegetation plays a significant role in the occurrence and spread of wildfires. Certain types of plants are more susceptible to burning or will burn with

greater intensity; and nonnative plants may be more susceptible to burning than native species. Dense or overgrown vegetation increases the amount of combustible material available to fuel the fire (referred to as the "fuel load"). The ratio of living to dead plant matter is also important. The risk of fire increases significantly during periods of prolonged drought, as the moisture content of both living and dead plant matter decreases; or when a disease or infestation has caused widespread damage. The fuel's continuity, both horizontally and vertically, is also an important factor.

- **Weather:** The most variable factor affecting the behavior of wildfires is weather. Temperature, humidity, wind, and lightning can affect chances for ignition and spread of fire. Extreme weather, such as high temperatures and low humidity, can lead to extreme wildfire activity. By contrast, cooling and higher humidity often signal reduced wildfire occurrence and easier containment. Years of precipitation followed by warmer years tend to encourage more widespread fires and longer burn periods. Also, since the mid 1980s, earlier snowmelt and associated warming due to global climate change has been associated with longer and more severe wildfire seasons in the Western U.S.

Even small fires can threaten lives and resources and destroy improved properties. If not promptly controlled, wildfires may grow into an emergency or disaster.

Wildfires can have serious effects on the local environment, beyond the removal of vegetation. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of rivers and streams, thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow hazards, as described above. Wildfires can also greatly affect the air quality of the surrounding area.

History

Numerous wildfires have been recorded in Madera County. Table 4-9 below lists the fires that have burned 1,000 acres or more in Madera County since 1950. Also, Figure C-9 shows the perimeters of historic wildfires from 1950 – present, based on data from Cal FIRE.

Some fires that have burned less than 1,000 acres are not listed in Table 5-10 but have caused large amounts of property damage. For example, the Quartz Fire in 2005 was declared a federal disaster, and caused approximately $1.4 million in damages. The Quartz Fire occurred about 2 miles east of Coarsegold.

Table 4-9. Recent Large Wildfires in Madera County

Year	Name of Fire	Area Burned in Madera County (Acres)
1951	Oakhurst	1,366
1952	Strathearn	1,504
1953	Lambertson	1,102
1954	Bufford Mountain	4,938
1959	Nelson Cove	2,050
1959	Urruita #2	1,557

Table 4-9. Recent Large Wildfires in Madera County

Year	Name of Fire	Area Burned in Madera County (Acres)
1961	Harlow	32,843
1968	Thornberry #2	3,130
1969	Lightning #36	4,662
1975	Pole Line	2,949
1982	Temperance Flat	3,173
1989	Powderhouse	2,500
1992	Rainbow	8,357
1997	Mile	1,059
2001	North Fork	4,130
2001	Hoover	1,283
2005	Bailey	1,024
2008	41 Fire	2,592

Source: Cal FIRE, 2009.

Location

The locations of previous fires that have burned 5,000 acres or more are shown in Figure C-10. This map shows that the locations of most of the largest fires in recent years have been located in the central portion of the County. Also, the source for some of these fires are located outside of Madera County.

Many of the historic fires burned areas in the central portion of the County, near Coarsegold, but fires have also occurred in portions of the northern and southern areas of the county. Based on historical incidences, the areas **least** susceptible to fires are the far northern and southwestern areas of Madera County.

Also, Public Resources Code 4201-4204 and Government Code 51175-89 directed Cal FIRE to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones are referred to as Fire Hazard Severity Zones. Specifically, the maps were created using data and models describing development patterns, potential fuels over a 30-50 year time horizon, expected fire behavior, and expected burn probabilities. The maps are divided into "local responsibility areas" and "state responsibility areas". Local responsibility areas include incorporated cities, cultivated agriculture lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, fire protection districts, counties, and by Cal FIRE under contract to local government. State responsibility area is a legal term defining the area where the State has financial responsibility for wildland fire protection. Incorporated cities and federal ownership are not included. The prevention and suppression of fires in all areas that are not state responsibility areas are primarily the responsibility of local or federal agencies.

As shown on Figures C-11 and C-12, high and very high wildfire hazard areas include Madera County's eastern portions in the Sierra Nevada mountains. The middle portion of the County, which includes the foothills, is dominated by moderate hazard areas. The low-lying western portion of the County is dominated by non-wildland areas with low hazards, and a few areas of moderate hazards. Urban areas are considered "unzoned" for fire risk.

Extent and Probability of Future Events

Cal FIRE has classified 10 percent of Madera County as a high wildlife hazard areas and an additional 20.7 percent as very high wildfire hazard areas. Based on historical events, about 2-3 wildfires burn within Madera County each year, on average; however, in 2004 and 2005, 13 wildfires were recorded in Madera County each year.

4.2.3.2 Dam Failure

Nature

A dam failure is the structural collapse of a dam that releases the water stored in the reservoir behind the dam. A dam failure is usually the result of the age of the structure, inadequate spillway capacity, design failure, or structural damage caused by an earthquake, flood, or extreme rainfall. The sudden release of water has the potential to cause human casualties, economic loss, and environmental damage. This type of disaster is dangerous because it can occur rapidly, providing little warning and evacuation time for people living downstream. The flows resulting from dam failure generally are much larger than the capacity of downstream channels and can therefore lead to extensive flooding. Flood damage occurs as a result of the momentum of the flood caused by the sediment-laden water, flooding over the channel banks, and impact of debris carried by the flow.

History

No major dam failures have occurred in Madera County.

Location

There are currently 18 dams in Madera County; of these dams, 12 are earth dams, and only 7 have a capacity greater than 200 acre feet. Table 4-10 shows a listing of the dams with a capacity greater than 5,000 acre feet located in either Madera or Fresno County. Also, please see Figure C-13 for the locations of dams with capacities equal to or greater than 5,000 cubic feet of water in or near Madera County.

The dam with the largest capacity in Madera County is the Buchanan Dam, owned by the USACE, with a capacity of 150,000 acre-feet, followed by the Hidden Dam, owned by the USACE, with a capacity of 90,000 acre-feet. In addition, the Friant Dam in Fresno County has a capacity of 520,500 acre feet, while the Pine Flat Dam in Fresno County has a capacity of 1,000,000 acre feet.

Table 4-10. Dams in Madera and Fresno Counties

Name	Owner	County	Stream	Year Built	Type	Capacity (Acre-Feet)
Big Creek #7	Southern California Edison	Fresno	San Joaquin River	1951	Gravity	35,000
Big Dry Creek	Fresno Metropolitan Flood Control District	Fresno	Big Dry Creek and Dog Creek	1948	Earth	30,200
Buchanan	USACE	Madera	Chowchilla River	1890	Earth and Rock	150,000
Courtright	Pacific Gas, and Electric Company	Fresno	Helms Creek	1958	Rockfill	123,300
Crane Valley Storage	Pacific Gas, and Electric Company	Madera	North fork, Willow Creek	1910	Hydraulic Fill	45,410
Florence Lake	Southern California Edison Company	Fresno	South Fork of San Joaquin River	1926	Multiple Arch	64,406
Fancher Creek	Fresno Metropolitan Flood Control District	Fresno	Fancher Creek and Hog Creek	1991	Earth	9,600
Friant	US Bureau of Reclamation	Fresno	San Joaquin River	1942	Gravity	520,500
Hidden	USACE	Madera	Fresno River	1975	Earth	90,000
Huntington Lake 1	Southern California Edison Company	Fresno	Big Creek	1917	Gravity	88,834
Little Panoche Diversion	US Bureau of Reclamation	Fresno	Little Panoche Creek	1966	Earth	5,580
Mammoth Pool	Southern California Edison Company	Fresno	San Joaquin River	1960	Earth	123,000
Pine Flat	USACE	Fresno	Kings River	1954	Gravity	1,000,000
Shaver Lake	Southern California Edison Company	Fresno	Stevenson Creek	1927	Gravity	135,283
Vermilion Valley	Southern California Edison Company	Fresno	Mono Creek	1954	Earth	125,000
Wishon	Pacific Gas, and Electric Company	Fresno	North Fork of Kings River	1958	Rockfill	118,000

Sources: California Department of Water Sources, Division of Dam Safety, 2009.

Extent and Probability of Future Events

Figure C-14 is a dam inundation map prepared for the Buchanan, Hidden, Friant, and Pine Flat Dams. The dam inundation map shows the following:

- Failure of the Buchanan Dam would flood an area of 104 square miles that includes the City of Chowchilla and a portion of Merced County.
- Failure of the Hidden Dam would flood the City of Madera and a surrounding area of 132 square miles entirely within the County of Madera.
- Failure of the Friant Dam would flood an area of 736 square miles in Fresno, Madera, and Merced Counties; the portion of Madera County that would flood is along the southern and western borders of the County.
- Failure of the Pine Flat Dam would cause the greatest area of flooding; this dam would flood an area of 1,818 square miles extending from the dam location in Fresno County south to the Central Valley in Kings County, and as far north as Stockton in San Joaquin County. However, only a small portion of western Madera County would be flooded in this case.

The depths of flooding due to the failure of a dam is unknown. However, as shown above, the dams with potential to flood the largest area in Madera County in case of dam failure are two dams located in the County: the Buchanan and Hidden Dams.

Based on a lack of previous occurrence, the probability of a future dam failure event is unknown. However, a collapse and structural failure of a dam may be caused by a severe winter storm, earthquake, design flaws, or internal erosion, known as piping. A dam failure may also be a result of the age of the structure or inadequate spillway capacity.

4.2.3.3 Levee Break

Nature

A levee is a natural or artificial slope or wall used to regulate water levels. It is usually built parallel to a river or the coast, and is often earthen. Artificial levees are built to prevent flooding, but also tend to increase water flow in the adjoining river by confining the flow of the river.

Two types of levee failure are levee breach and levee overtopping. The levee breach is the most frequent and dangerous form of levee failure and it occurs when part of the levee breaks away. Breaching leaves an opening for water to pass through to flood the land protected by the levee. Breaches are caused by either surface erosion or by a subsurface failure. Also, breaches are often accompanied by levee boils, or sand boils. A sand boil occurs when the upward pressure of water flowing through soil under the levee exceeds the downward pressure from the weight of the soil above it. The water flowing through the soil resurfaces on the land side of the levee in the form of a volcano-like cone of sand. San boils are signals of instability and other conditions that could lead to erosion of the levee foundation, which could in turn cause the levee to sink. A complete breach of the levee may follow.

Levee overtopping occurs when water overtops the crest of the levee. Overtopping can be caused when flood waters simply exceed the lowest crest of the levee system or if high winds generate significant swells in the river and bring waves crashing over the levee. Overtopping can lead to

significant land side erosion of the levee or can cause a levee breach. Often levees are reinforced with rocks or concrete to prevent erosion and failure.

In the State of California there has been increased concern about levee failure in the Sacramento-San Joaquin River Delta region due to Jones Tract levee failure in 2004 and due to increased national attention placed on levees after catastrophic levee failures occurred in New Orleans during Hurricane Katrina.

History

No significant levee failures have occurred in Madera County.

Location

Figure C-15 shows levees in and near Madera County. As evident from this map, all levees in Madera County are a part of the Lower San Joaquin Levee District, and are located to the north of the San Joaquin River. Other nearby levees are located in Fresno and Merced Counties and are located to the south of the San Joaquin River.

Extent and Probability of Future Events

Figure C-15 shows the extent of flooding greater than three feet due to levee failure along the Lower San Joaquin Levee District. The probability of future levee failures in Madera County is unknown, but may result from a large winter storm event or seismic event.

4.2.3.4 Hazardous Material Event

Hazardous materials are substances that may have negative effects on health or the environment. Exposure to hazardous materials may cause injury, illness, or death. Effects may be felt over seconds, minutes, or hours (short-term effects) or not emerge until days, weeks, or even years after exposure (long-term effects). Also, some substances are harmful after a single exposure of short duration, but others require long episodes of exposure or repeated exposure over time to cause harm.

The toxicity of a specific substance is one important factor in determining the risk it poses, but other factors can be just as important, if not more so. Factors affecting the severity of an accidental release include:

- Toxicity
- Quantity
- Dispersal characteristics
- Location of release in relation to population and sensitive environmental areas
- Efficacy of response and recovery actions

Hazardous materials can be found almost everywhere in our society. Paints, solvents, adhesives, gasoline, household cleaners, batteries, pesticides and herbicides, and even medicines are all potential sources of hazardous materials. Although many people are beginning to question the wisdom of surrounding themselves with so many potential toxins, this plan does not focus on the hazards contained in everyday products, but rather on the hazards associated with potential

releases of hazardous substances from transportation corridors and fixed facilities within the County.

Hazardous materials are generally classified by their primary health effects on humans. Some common types include the following:

- Anesthetics and narcotics are substances that depress the central nervous system.
- Asphyxiants are substances that interfere with normal breathing and can cause suffocation.
- Explosives are substances that pose a risk of exploding; fires and chemical effects may also be a danger.
- Flammable materials are substances that catch fire easily, though they may also pose other dangers, such as explosion or chemical effects.
- Irritants cause burns or irritation to body tissues such as eyes, nose, throat, lungs, or skin.

Mobile Incident

Nature

Mobile incidents include those that occur on the roadway as well as railroad. Mobile incident-related releases are dangerous because they can occur anywhere, including close to human populations, assets and utilities, or environmentally sensitive areas. Mobile incident-related releases can also be more difficult to mitigate because of the great area over which any given incident might occur and the potential distance of the incident site from response resources.

History

The National Response Center's (NRC) Internet-based query system of non-Privacy Act data shows that since 1998, 18 roadway incidents were reported; causes included equipment failure, operator error, and transportation accident. These incidents are listed in Table 4-11 below.

Table 4-11. Recent Mobile Incidents in Madera County

Year	Location	Incident Cause	Material
1991	Highway 99 & Ave 16	Equipment failure	Oil: Diesel
1992	Rd 9 at Ave 7	Transport accident	Oil: Diesel
1995	St Rt 99 Northbound South of Ave 24	Unknown	Gasoline: Automotive (Unleaded)
1996	St Rt 99 & Ave 18 1/2 Southbound	Unknown	Oil: Diesel
1997	Ave 18 1/2 State Rt 99	Other	Oil, Fuel: No. 2-D
1997	State Rt 99 Northbound	Transport accident	Oil, Fuel: No. 2-D
1998	Northbound Route 99 / .2 mile South of 18,1.5 Ave	Transport accident	Oil, Misc: Lubricating
1998	Golden State Blvd Near Ave 12	Equipment failure	Zinc sulfate
1999	Ave 8.5 About 1 Mile West of State Route 145	Operator Error	Low grade insecticide with lime solution
2004	21633 Ave. 24	Equipment failure	Break-up alkali (washing solvent)

Table 4-11. Recent Mobile Incidents in Madera County

Year	Location	Incident Cause	Material
2004	Highway 99 Southbound at the Chowchilla Off Ramp	Transport accident	Non-hazardous fertilizer
2004	Interstate 99 West of Madera	Transport accident	Unknown
2004	18208 Ave 24	Equipment failure	Oil: Diesel
2004	Robertson Ave and Hwy 99	Equipment failure	Oil: Diesel
2005	Hwy 99 Southbound	Transport accident	Unknown material, flammable paints, machinery parts, fencing material, potting soil (herbicide)
2006	On the Spur Track, Milepost 183.5, Subdivision: Fresno Nearby 3rd St. and Gateway St. off Hwy 99	Transport accident	Unknown
2006	On the hill near the Pacifica Lions Club Camp Lake 5110 Worman Road	Operator Error	Other oil, Engine oil, Ethylene Glycol, and Oil, Misc: Motor.
2008	300 feet east of Road 22 Corrinne Lake Road	Transport accident	Oil, Misc: Lubricating, Gasoline: Automotive (Unleaded), Ethylene Glycol,

Source: National Response Center, 2009

Half of the incidents listed in Table 4-11 above occurred on or near Highway 99. Also, most of those events resulted in release of oil, although each of the following materials was released once: zinc sulfate, washing solvent, insecticide, and fertilizer. Additionally, during the same reporting period, 19 railroad incidents were reported. In all cases except one, the cause was unknown or other causes. Reports for some of these incidents do not include information on the material released; thus, some of these incidents might have been misclassified into this category and should have been classified as "Railroad Non Release" incidents.

Location

In Madera County, a mobile hazardous material event is most likely to occur within the City of Madera or the City of Chowchilla, and along Highways 41, 49, 99, 145, and 152 and railroad tracks (See Figure C-16). Trucks and rail cars that use these transportation corridors commonly carry a variety of hazardous materials, including gasoline, other petroleum products, and other chemicals known to cause human health problems.

Extent and Probability of Future Events

Comprehensive information on the probability and magnitude of a hazardous material event along transportation corridors is not available. Wide variations among the characteristics of hazardous material sources and among the materials themselves make such an evaluation difficult. However, based on previous occurrences, Madera County can expect a minor hazardous material event every 1-5 years due to a truck accident and every 1-3 years due to a rail accident.

Fixed Incidents

Nature

The release of hazardous substances from stationary sources can be caused by human error, acts of terrorism, or natural phenomena. Earthquakes pose a particular risk, because they can damage or destroy facilities containing hazardous substances. The threat posed by a hazardous-material event may be amplified by restricted access, reduced fire suppression and spill containment capability, and even complete cutoff of response personnel and equipment.

The EPA's Risk Management Program regulates facilities that have a greater than a threshold quantity of a regulated substance in a process. The regulated substances that are listed in the Risk Management Program include 77 toxic chemicals and 63 flammable substances. This program requires a facility to develop the following: a Hazard Assessment, Prevention Elements, a Management System, and an Emergency Response Program.

In addition, California replaced the Risk Management Program with the California Accidental Release Prevention (CalARP) Program on January 1, 1997. The CalARP Program is very similar to the EPA's Risk Management Program with the following differences:

- The list of toxic chemicals is larger 276 vs. 77
- The threshold quantities of the chemicals is smaller (e.g., chlorine federal threshold quantity is 2500 pounds vs. California's threshold quantity is 100 pounds)
- Requires an external events analysis be performed, including a seismic analysis
- More interaction with the public and agencies, including a Risk Management Plan

History

According to the NRC, there have been 34 reported fixed incidents in Madera County since 1998. These events are caused by dumping, equipment failure, natural phenomenon, operator error, and other or unknown causes. By far, the most common material involved in these incidents is oil, followed by polychlorinated biphenyls (PCBs). The largest reported release was 35 gallons, although many incident reports do not include the amount or volume of material released.

Location

Figure C-17 shows the eight facilities that are covered under the EPA's Risk Management Plan Program, with an additional 13 under the CalARP Program. These facilities include wineries, farms and ranches, and ethanol plants, to name a few.

Extent and Probability of Future Events

Comprehensive information on the probability and magnitude of a hazardous material event at fixed locations is not available. The likelihood of a release is based on factors such as equipment maintenance, operator training, and the potential of natural phenomena to disrupt handling and storage of the materials. However, based on previous occurrences, Madera County can expect a minor hazardous material event 1-2 times a year as a result of equipment failure, operator error, dumping, or natural phenomena. Incidents due to other or unknown causes have occurred, on average, 3-4 times per year.

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A vulnerability analysis predicts the extent of exposure that may result from a hazard event of a given intensity in a given area. The analysis provides quantitative data that may be used to identify and prioritize potential mitigation measures by allowing communities to focus attention on areas with the greatest risk of damage.

Per the local mitigation planning requirements, this vulnerability analysis consists of the following seven steps:

- Asset inventory
- Methodology
- Data limitations
- Exposure analysis
- RL properties
- Summary of impacts
- Additional Tribal requirements
- Tables that support the asset inventory, exposure analysis, RL properties, summary of impacts, and additional tribal requirements are located in Appendix G – Appendix J.

5.1 ASSET INVENTORY

Assets that were included in this LHMP's vulnerability analysis are as follows:

- Population (for the unincorporated area of Madera County and the City of Madera)
- Residential building stock (for the unincorporated area of Madera County and the City of Madera)
- Critical facilities:
- Community services and park facilities
- Government centers and departments
- Jails
- Public safety facilities
- Public works facilities
- County-maintained bridges
- Evacuation routes
- School buildings and district offices
- RL properties

The total assets inventoried for all for participating local jurisdictions are located within the first table of each participating jurisdiction's appendix (Appendix G – Appendix J).

5.2 METHODOLOGY

A conservative exposure-level analysis was conducted to assess the risks associated with the identified hazards. This analysis is a simplified assessment of the potential effects of the hazards on values at risk without consideration of the probability or level of damage.

Using estimated 2009 population information provided by the California Department of Finance, a spatial proportion was used to determine the number of people located where hazards are likely to occur.

Using Census block level residential building information, a spatial proportion was used to determine the number of residential buildings located where hazards are likely to occur.

Using data provided by Madera County, the City of Madera, the North Fork Rancheria, and the Madera County Office of Education, geocoded locations of physical assets were compared to locations where hazards are likely to occur. If any portion of an asset fell within a hazard area, it was counted as impacted. A spatial proportion was also used to determine the amount of linear assets, such as highways, within a hazard area. The exposure analysis for linear assets was measured in miles. Estimated replacement values were provided by each local jurisdiction, if available.

For each physical asset located within a hazard area, exposure was calculated by assuming the worst-case scenario (that is, the asset would be completely destroyed and would have to be replaced). The aggregate exposure, in terms of replacement value or insurance coverage, for each category of structure or facility was calculated. A similar analysis was used to evaluate the proportion of the population at risk. However, the analysis simply represents the number of people at risk; no estimate of the number of potential injuries or deaths was prepared.

5.3 DATA LIMITATIONS

The vulnerability estimates provided herein use the best data currently available, and the methodologies applied result in an approximation of risk. These estimates may be used to understand relative risk from hazards and potential losses. However, uncertainties are inherent in any loss estimation methodology, arising in part from incomplete scientific knowledge concerning hazards and their effects on the built environment as well as the use of approximations and simplifications that are necessary for a comprehensive analysis.

It is also important to note that the quantitative vulnerability assessment results are limited to the exposure of people, buildings, and assets to the identified hazards. It was beyond the scope of this LHMP update to develop a more detailed or comprehensive assessment of risk (including annualized losses, people injured or killed, shelter requirements, loss of facility/system function, and economic losses). Such impacts may be addressed with future updates of the LHMP.

5.4 EXPOSURE ANALYSIS

The recommendations for identifying structures and estimating potential losses, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 RECOMMENDATIONS: RISK ASSESSMENT

Assessing Vulnerability: Identifying Structures

Requirement §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

Element

- Does the new or updated plan describe vulnerability in terms of the types and numbers of existing buildings, infrastructure, and critical facilities located in the identified hazard areas?
- Does the new or updated plan describe vulnerability in terms of the types and numbers of future buildings, infrastructure, and critical facilities located in the identified hazard areas?

Source: FEMA 2008.

Vulnerable structures, including residential buildings and critical facilities, at risk to each identified hazard are located in Appendix G for Madera County and Appendix H for the City of Madera. For Madera County, additional exposure analysis information for County-maintained bridges, evacuation routes, and RL properties is provided in Appendix G. For the North Fork Rancheria, only critical facilities are considered in this analysis, as shown in Appendix I. Additionally, the North Fork Rancheria is only vulnerable to four hazards: seismic; severe wind and tornado; wildfire; and winterstorm. For the Madera County Office of Education, this analysis includes school buildings and district offices only, as shown in Appendix I.

DMA 2000 RECOMMENDATIONS: RISK ASSESSMENT

Assessing Vulnerability: Estimating Potential Losses

Requirement §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

Element

- Does the new or updated plan estimate potential dollar losses to vulnerable structures?
- Does the new or updated plan reflect changes in development in loss estimates?
- Does the new or updated plan describe the methodology used to prepare the estimate?

Source: FEMA 2008.

The estimated potential dollar losses for critical facilities at risk to each identified hazard are shown in each local jurisdiction's appendix (Appendix G – Appendix J). As noted previously, estimated values were provided by the local jurisdiction, if available.

5.5 RL PROPERTIES

The requirements for addressing RL properties, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: RISK ASSESSMENT

Assessing Vulnerability: Addressing Repetitive Loss Properties

Requirement §201.6(c)(2)(ii): [The risk assessment] must address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged by floods.

Element

- Does the new or updated plan describe vulnerability in terms of the types and numbers of Repetitive Loss properties located in the identified hazard areas?

Source: FEMA 2008.

As shown in Appendix G there are two structures in Madera County that are considered RL properties. These properties are both residential structures located in the town of Oakhurst. As shown in Table G-15, both properties are located within the 100-year floodplain.

5.6 SUMMARY OF IMPACTS

The requirements for an overview of the vulnerability analysis, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: RISK ASSESSMENT

Assessing Vulnerability: Overview

Requirement §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

Element

- Does the new or updated plan include an overall summary description of the jurisdiction's vulnerability to each hazard?
- Does the new or updated plan address the impact of each hazard on the jurisdiction?

Source: FEMA 2008.

The summary of impacts (i.e., percentage at risk) for the population, residential buildings, and critical facilities at risk to each identified hazard are shown in Appendix G – Appendix J, behind the exposure analysis tables in tables referred to as "overall summary" tables. Similar to the assessing vulnerability DMA 2000 requirement, for Madera County, additional summary of impact information for County-maintained bridges, evacuation routes, and RL properties is provided in Appendix G. For the North Fork Rancheria, only critical facilities are listed summary of impact information, as shown in Appendix I. For the Madera County Office of Education, this analysis includes school buildings and district offices only, as shown in Appendix I.

5.7 ADDITIONAL TRIBAL REQUIREMENTS

Additional Tribal recommendations for assessing vulnerability for cultural and sacred sites, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 RECOMMENDATIONS: RISK ASSESSMENT

Assessing Vulnerability: Assessing Cultural and Sacred Sites

Requirement §201.7(c)(2)(ii)(D): [The plan should describe vulnerability in terms of] cultural and sacred sites that are significant, even if they cannot be valued in monetary terms.

Element

- Does the new or updated plan discuss cultural and sacred sites?

Source: FEMA 2008.

According to the North Fork Rancheria, there are no cultural or sacred sites on the Tribe's 62-acre parcel. However, the Tribe recognizes that the potential exists for as-yet-undiscovered sites of cultural significance, as this area was inhabited by tribes for thousands of years. There are numerous instances of culturally significant plant materials which continue to be collected for food, medicine, and basketry by the Tribe.

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A capability assessment is not required by the DMA 2000 for local jurisdictions, but is so for Tribal entities. A capability assessment identifies and evaluates the human and technical, financial, and legal and regulatory resources available for hazard mitigation, and describes the current, ongoing, and recently completed mitigation projects.

Cal EMA/FEMA's local mitigation planning recommendations as well as the Tribal mitigation planning requirements are addressed as follows.

6.1 CAPABILITY ASSESSMENT RECOMMENDATIONS BY CAL EMA/FEMA

The recommendations for developing a local capability assessment, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 RECOMMENDATIONS: LOCAL CAPABILITY ASSESSMENT

Local Capability Assessment

Element

- Does the new or updated plan provide a description of the human and technical resources available within this jurisdiction to engage in a mitigation planning process and to develop a local hazard mitigation plan?
- Does the new or updated plan list local mitigation financial resources and funding sources (such as taxes, fees, assessments or fines) which promote mitigation within the reporting jurisdiction?
- Does the new or updated plan list local ordinances which affect or promote disaster mitigation, preparedness, response, or recovery within the reporting jurisdiction?
- Does the new or updated plan describe the details of in-progress, ongoing, or completed mitigation projects and programs within the reporting jurisdiction?

Source: FEMA 2008.

Human and technical, financial, and legal and regulatory resources as well as current, ongoing, and completed mitigation projects and programs are located behind the overall summary (exposure analysis) tables of each local jurisdiction's appendix (Appendix G – Appendix J).

6.2 TRIBAL REQUIREMENTS

Tribal requirements for identifying funding requirements and developing a capability assessment, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: FUNDING REQUIREMENTS

Funding Sources

Requirement §201.7(c)(3)(v): [The mitigation strategy shall include an] identification of current and potential sources of Federal, Tribal, or private funding to implement mitigation activities.

Element

- Does the new or updated plan identify current sources of Federal, Tribal, or private funding to implement mitigation activities?
- Does the new or updated plan identify potential sources of Federal, Tribal, or private funding to implement mitigation activities?

Source: FEMA 2010.

DMA 2000 REQUIREMENTS: CAPABILITY ASSESSMENT

Tribal Capability Assessment

Requirement §201.7(c)(3)(iv): [The mitigation strategy shall include] a discussion of the Indian Tribal government's pre- and post-disaster hazard-management policies, programs, and capabilities to mitigate the hazards in the area, including an evaluation of Tribal laws, regulations, policies, and programs related to hazard mitigation as well as to development in hazard-prone areas.

Element

- Does the new or updated plan include an evaluation of the Tribe's pre-disaster hazard management policies, programs, and capabilities?
- Does the new or updated plan include an evaluation of the Tribe's post-disaster management policies, programs, and capabilities?
- Does the new or updated plan include an evaluation of the Tribe's policies related to development in hazard prone areas?
- Does the new or updated plan include a discussion of Tribal funding capabilities for hazard mitigation projects?

Source: FEMA 2010.

Funding and capability resources for the North Fork Rancheria Tribe are located in Appendix I, Tables I-7 through I-10.

This section outlines the four-step process for preparing a mitigation strategy, as shown below. In addition it addresses the new NFIP requirement.

- Local hazard mitigation goals
- Identification and analysis of mitigation actions
- Implementation of mitigation actions
- Identification and analysis of mitigation actions for NFIP compliance

7.1 MITIGATION GOALS

The requirements for developing local hazard mitigation goals, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: MITIGATION STRATEGY

Local Hazard Mitigation Goals

Requirement §201.6(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Element

- Does the new or updated plan include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards?

Source: FEMA 2008.

Mitigation goals are defined as general guidelines that explain what a community wants to achieve in terms of hazard and loss prevention. Goal statements are typically long-range, policy-oriented statements representing community-wide vision. Table 7-1 shows the mitigation goals that were developed to reduce or avoid long-term vulnerability to each hazard addressed in this LHMP: seismic hazards (ground shaking and earthquake-induced landslides); weather-related hazards (drought, flood, fog, heat, severe wind and tornado, and winter storm); and other hazards (wildfire, dam failure, levee break, and hazardous material event).

Table 7-1. Mitigation Goals

Goal Number	Goal Description
1	Reduce the possibility of damages and losses due to seismic hazards, including ground shaking and earthquake-induced landslide
2	Reduce the possibility of damages and losses due to weather-related hazards, including drought, flood, fog, heat, severe wind and tornado, and winter storm
3	Reduce the possibility of damages and losses due to other hazards, including wildfire, dam failure, levee break, and hazardous material event

7.2 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

The requirements for the identification and analysis of mitigation actions, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: MITIGATION STRATEGY

Identification and Analysis of Mitigation Actions

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Element

- Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each hazard?
- Do the identified actions and projects address reducing the effects of hazards on new buildings and infrastructure?
- Do the identified actions and projects address reducing the effects of hazards on existing buildings and infrastructure?
- Does the mitigation strategy identify actions related to the participation in and continued compliance with the NFIP?

Source: FEMA 2008.

Mitigation actions are activities, measures, or projects that help achieve the goals of a mitigation plan. Mitigation actions are usually grouped into six broad categories: prevention, property protection, public education and awareness, natural resource protection, emergency services, and structural projects.

Potential mitigation actions were developed by the consultants and Planning Committee using the following criteria

- Eligible project criteria based on the 2009 HMA Unified Guidance
- 2005-2008 history of applicable PDM-funded projects
- FEMA's Mitigation Success Stories (http://www.fema.gov/mitigationbp/)
- Jurisdiction-specific vulnerability analyses (Appendix G-J)

As shown in Table 7-2, for each potential mitigation action, the following information is listed: mitigation action description; mitigation action category; hazard(s) addressed; type of development affected by mitigation action; and potential facilities to be mitigated.

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
1	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such levee break, high and/or very high wildfire areas.	Property Protection	All	New
2	Integrate the 2010 LHMP, in particular the hazard analysis and mitigation strategy sections, into Madera County and the City of Madera's General Plan's Element update process.	Property Protection	All	New/Existing
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	Property Protection, Structural Project	Seismic Hazards (ground shaking)	Existing - County ramps and bridges, and roads identified by Caltrans as structurally deficient.
4	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	Prevention, Property Protection	Seismic Hazards (landslides)	New/Existing
5	Acquire, relocate, or elevate residential structures, in particular those that have been identified as RL properties, within the 100-year floodplain.	Property Protection	Weather-Related Hazards (flood)	Existing – Residential structures, including RL properties, located within the 100-year floodplain (See Appendix G-J for specific structural information).
6	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	Property Protection	Weather-Related Hazards (flood)	Existing - Critical facilities located within the 100-year floodplain (See Appendix G-J for specific structural information).
7	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	Property Protection, Structural Project	Weather-Related Hazards (flood)	Existing – County ramps, bridges, and roads identified in the 100-year floodplain (See Appendix G-J for specific structural information).

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
8	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide DFIRM, Community Assessment Visits, and/or DWR.	All	Weather-Related Hazards (flood)	New/Existing properties within Madera County and the City of Madera.
9	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	Prevention, Property Protection	Weather-Related Hazards (flood)	New/Existing within Madera County and the City of Madera. In particular, residential structures and critical facilities which are located within the 100-year floodplain.
10	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	Prevention, Natural Resource Protection	Weather-Related Hazards (drought)	New/Existing
11	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	Prevention, Property Protection, Natural Resource Protection	Weather-Related Hazards (severe wind)	Existing – Critical facilities located in areas that experience 41 days plus of peak wind gusts $\geq$ 50 MPH (See Appendix G-J for specific structural information).
12	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	Property Protection	Weather-Related Hazards (severe wind)	Existing – residential buildings located in areas that experience 41 days plus of peak wind gusts $\geq$ 50 MPH (See Appendix G-J for specific structural information).
13	Bolt down the roofs of critical facilities in order to prevent wind damage.	Property Protection	Weather-Related Hazards (severe wind)	Existing – Critical facilities located in areas that experience 41 days plus of peak wind gusts $\geq$ 50 MPH (See Appendix G-J for specific structural information).

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
14	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	Property Protection	Weather-Related Hazards (Snowstorm)	Existing – Critical facilities located in areas that experience 48-inches plus snow annually (See Appendix G-J for specific structural information).
15	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	Property Protection, Structural Project	Other Hazards (hazardous material)	Existing – County ramps, bridges, and roads identified in the hazardous material transportation corridor areas (See Appendix G-J for specific structural information).
16	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	Prevention, Property Protection, Natural Resource Protection	Other Hazards (wildfire)	Existing – critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone (See Appendix G-J for specific structural information).
17	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes.	Property Protection	Other Hazards (wildfire)	Existing
18	Work with DWR to determine dam inundation areas of unmapped dams within the county and neighboring counties that may affect Madera County.	Property Protection	Other Hazards (dam failure)	New/Existing
19	Encourage property owners located in the levee break hazard areas to purchase voluntary flood insurance.	Property Protection	Other Hazards (levee break)	Existing
20	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths $\geq$ 3-feet.	Property Protection	Other Hazards (levee break)	Existing - Critical facilities located within the levee break hazard areas with depths $\geq$ 3-feet. (See Appendix G-J for specific structural information).

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
21	Relocate a Madera County fire station outside of a 100-year floodplain (Station 4 – Dairyland)	Property Protection	Weather Related Hazards (flood)	Existing
22	Public Awareness/Education/ Outreach – Wildland Fires, Flooding,	All	Weather Related (flood) and Other Hazards (wildfire)	New/Existing
23	Provide seismic retrofitting to existing water tanks and systems or a new engineered water distribution system serving both fire suppression and domestic water needs. Manage vegetation in areas within and adjacent to the access routes to water tanks and distribution systems within SRA/WUI areas. Reduce the potential of wildfire extension to these critical facilities.	Property Protection	Seismic (ground shaking) and Other Hazards (wildfire)	Existing
24	Purchase land and create a drainage basin for the Southeast Madera Plan (SMP) area for expected 1,000 homes in 100-year floodplain.	Property Protection	Weather Related (flood)	New
25	Provide stormwater drainage improvements to reduce frequent flooding, such as downtown stormwater drains, basins, trunk lines, auxiliary pipes, and interconnections.	Property Protection	Weather Related (flood)	Existing
26	Using "HECRAZ," analyses, update 100-year floodplain for Fresno River per earlier FEMA recommendation.	Property Protection	Weather Related (flood)	New/Existing
27	Mitigate potential damage to two bridges crossing the Fresno River due to scouring of piles and piers, leaving them exposed.	Property Protection	Weather Related (flood)	Existing
28	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain: Alview, Dairyland, and Lincoln Schools.	Property Protection	Weather Related (flood)	Existing

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
29	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zones: Foothill (Very High risk), Yosemite Falls (High risk), and Bass Lake Elementary (Very High risk) Schools	Property Protection	Other Hazards (wildfire)	Existing
30	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths > 3-feet: Alview School	Property Protection	Weather Related (flood)	Existing
31	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas, and bolt down the roofs of critical facilities in order to prevent wind damage: Wawona School	Property Protection	Weather Related (wind)	Existing
32	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines and on dwellings and other structures on tribal lands.	Property Protection	Weather Related (wind)	New/Existing
33	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone on tribal lands.	Property Protection	Weather Related (wind) and Other Hazards (wildfire)	New/Existing
34	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes on tribal lands.	Property Protection	Other Hazards (wildfire)	Existing

Table 7-2. Potential Mitigation Actions

No.	Description	Mitigation Category	Hazard Addressed	New or Existing Construction
35	In cooperation with other organizations, complete a fire break around the foothills communities and tribal lands.	Property Protection	Other Hazards (wildfire)	New/Existing
36	Given limited access to the North Fork area, prepare and distribute an evacuation plan and supporting instructions to tribal lands and foothill residents.	Prevention and Property Protection	Weather Related (wind, winter storm) and Other Hazards (wildfire)	New/Existing
37	Using the LHMP's data and in cooperation with other organizations, help produce and disseminate a series of "What Next-What If" pamphlets throughout the county, including tribal citizens, that emphasizes mitigation measures, resources, and contacts.	Prevention	All Hazards	New/Existing
38	Continue to work with weather forecasting and public safety agencies to provide warning and protective information to residents, travelers, and visitors about severe valley fog conditions.	Prevention	Weather Related (fog)	(Not applicable: personal safety)
39	Continue to monitor the manufacture, storage, and transport of hazardous materials by working with environmental health and public safety agencies to identify effective mitigation actions or requirements that will help reduce the risk of incidents, including the spread of released materials.	Prevention	Other Hazards (hazardous materials events)	Existing

7.3 IMPLEMENTATION OF MITIGATION ACTIONS

The requirements for the evaluation and prioritization of mitigation actions, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: MITIGATION STRATEGY

Implementation of Mitigation Actions

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Element

- Does the new or updated mitigation strategy include how the actions are prioritized? (For example, is there a discussion of the process and criteria used?)
- Does the new or updated mitigation strategy address how the actions will be implemented and administered? (For example, does it identify the responsible department, existing and potential resources, and timeframe?)
- Does the new or updated prioritization process include an emphasis on the use of a cost-benefit review to maximize benefits?

Source: FEMA 2008.

After the list of potential mitigation actions had been developed, the Planning Committee evaluated and prioritized each of the potential mitigation actions to determine which mitigation actions would be included in their jurisdiction-specific mitigation action plan. Criteria considered for this evaluation process included:

1. Current or potential support from the local jurisdiction
2. Local jurisdiction department or agency champion
3. Ability to be implemented during the 5-year lifespan of the LHMP
4. Ability to reduce expected future damages and losses (cost-benefit)
5. Mitigates a high-risk hazard

Appendices G-J shows the evaluation and prioritization process of potential mitigation actions for each local jurisdiction. Mitigation actions that received at least four points were considered for inclusion in the mitigation action plan. The mitigation action plan is included for each local jurisdiction in Appendices G-J.

7.4 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS: NFIP COMPLIANCE

The requirements for the identification and analysis of mitigation actions: NFIP compliance, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: MITIGATION STRATEGY

Identification and Analysis of Mitigation Actions: NFIP Compliance

Requirement §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Element

- Does the new or updated plan describe the jurisdiction(s) participation in the NFIP?
- Does the mitigation strategy identify, analyze, and prioritized actions related to continued compliance with the NFIP.

Source: FEMA 2008.

Madera County and the City of Madera participate in the National Flood Insurance Program (NFIP). The County joined the program on August 4, 1987, and the City joined on June 4, 1987. As of December 31, 2009, the County has 1,168 policies in force, and the City has 57 policies in force. The current effective map dates for both jurisdictions is September 26, 2008. The most recent Community Assessment Visit (CAV) reviews occurred in 2009.

As NFIP participants, both jurisdictions intend to continue their participation. Each will also work with FEMA Region IX to improve these visits and to discuss their possible respective entries into the Community Rating System (CRS) program.

Table 7-2 above identifies nine (9) Potential Mitigation Actions that are intended to reduce the valley area's flood and levee failure risks. They are numbers 6, 8, 9, 20, 21, 24, 25, 28, and 30.

The North Fork Rancheria of the Mono Indians does not participate in the NFIP. However, the Tribal Council, through this planning process, does understand that it would be eligible for HMGP funding if both Madera County and the Rancheria declare local emergencies as a prelude to a federally qualifying disaster declaration.

This section describes a formal plan maintenance process to ensure that the 2010 LHMP remains an active and applicable document. It includes an explanation of how the Madera County OES and Planning Committee intend to organize their efforts to ensure that improvements and revisions to the 2010 LHMP occur in a well-managed, efficient, and coordinated manner.

The following four process steps are addressed in detail below:

- Monitoring, evaluating, and updating the LHMP
- Implementation through existing planning mechanisms
- Continued public involvement
- Additional Tribal requirements

8.1 MONITORING, EVALUATING, AND UPDATING THE PLAN

The requirements for monitoring, evaluating, and updating the 2010 LHMP, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PLAN MAINTENANCE PROCESS

Monitoring, Evaluating and Updating the Plan

Requirement §201.6(c)(4)(i): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Element

- Does the new or updated plan describe the method and schedule for monitoring the plan? (For example, does it identify the party responsible for monitoring and include a schedule for reports, site visits, phone calls, and meetings?)
- Does the new or updated plan describe the method and schedule for evaluating the plan? (For example, does it identify the party responsible for evaluating the plan and include the criteria used to evaluate the plan?)
- Does the new or updated plan describe the method and schedule for updating the plan within the five-year cycle?

Source: FEMA 2008.

The 2010 LHMP was prepared as a collaborative effort among Madera County OES, the Planning Committee, and the consultants. To maintain momentum and build on previous hazard mitigation planning efforts and successes, Madera County OES will make use of the Planning Committee to monitor, evaluate, and update the 2010 LHMP. The current Planning Committee POC, which is from Madera County OES, will continue to serve as the POC and will coordinate all local efforts to monitor, evaluate, and update this document.

- Every 12 months from plan adoption, the Planning Committee POC will email each member of the Planning Committee an Annual Review Questionnaire to complete. As shown in Appendix F, Plan Maintenance Documents, the Annual Review Questionnaire will include an evaluation of the following: planning process, hazard analysis, vulnerability analysis, capability assessment, and mitigation strategy.
- The Planning Committee POC will collect all completed questionnaires and determine if the 2010 LHMP needs to be updated to address new or more threatening hazards, new technical reports or findings, and new or better-defined mitigation projects. The Planning Committee POC will summarize these findings and email them out to the Planning Committee. If the

Planning Committee POC believes that the 2010 LHMP needs to be updated based on the findings, then the Planning Committee POC will request that the Planning Committee members attend an LHMP update Planning Committee meeting.

Additionally, mitigation actions will be monitored and updated through the use of the Mitigation Project Progress Report. During each annual review, each department or agency currently administering a mitigation project will submit a progress report to the Planning Committee POC to review and evaluate. For projects that are being funded by a FEMA mitigation grant, FEMA quarterly reports may be used as the preferred reporting tool. As shown in Appendix F, Plan Maintenance Documents, the progress report will discuss the current status of the mitigation project, including any changes made to the project, identify implementation problems, and describe appropriate strategies to overcome them. After considering the findings of the submitted progress reports, the Planning Committee POC may request that the implementing department or agency meet to discuss project conditions.

In addition to the Annual Review Questionnaire, Mitigation Project Progress Report, and any annual meetings, the Planning Committee will meet to update the 2010 LHMP every 5 years. To ensure that this update occurs, within the first six months of the third year following plan adoption, the Planning Committee will undertake the following activities:

- Research funding available to assist in LHMP update (and apply for funds that may take up to one year to obtain)
- Thoroughly analyze and update the risk of natural and human-made hazards in Madera County
- Complete a new Annual Review Questionnaire and review previous questionnaires
- Provide a detailed review and revision of the mitigation strategy
- Prepare a new implementation strategy
- Prepare a new draft LHMP and submit it to the local governing bodies for adoption
- Submit an updated LHMP to the OES and FEMA for approval

8.2 IMPLEMENTATION THROUGH EXISTING PLANNING MECHANISMS

The requirements for implementation through existing planning mechanisms, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PLAN MAINTENANCE PROCESS

Incorporation into Existing Planning Mechanisms

Requirement §201.6(c)(4)(ii): [The plan shall include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Element

- Does the new or updated plan identify other local planning mechanisms available for incorporating the requirements of the mitigation plan?
- Does the new or updated plan include a process by which the local government will incorporate the requirements in other plans, when appropriate?

Source: FEMA 2008.

After the adoption of the 2010 LHMP, the Planning Committee will ensure that elements of the 2010 LHMP are incorporated into other existing planning mechanisms. The processes for incorporating the 2010 LHMP into various planning documents will occur as (1) other plans are updated and (2) new plans are developed.

Therefore, various members of the Planning Committee will undertake the following activities:

- Activity 1: The County, which is undertaking its General Plan update process, will use the hazard analysis and mitigation strategy of the LHMP for reference in its Safety Element.
- Activity 2: The City of Madera, which is updating its emergency response plan, will use the LHMP for hazard analysis with preparedness and response implications.
- Activity 3: All local jurisdictions will use the dam failure inundation map data when meeting with dam owners regarding the retrofitting or replacement of the dams (a process that is underway for two dams: Hidden and Crane Valley).
- Activity 4: All local jurisdictions will use the LHMP's risk information and other data in mitigation and emergency preparedness public information and related outreach efforts.
- Activity 5: It is anticipated that the LHMP will be used as a key reference in connection with various development and public works projects, such as the South Madera Plan, stormwater plan updates, levee improvement projects and others.
- Activity 6: The North Fork Rancheria will, as a participating jurisdiction, use the dam failure inundation map and data in the context of Activity 3 and Activity 4 and through its regular "public scoping" meetings (see below).
- Activity 7: The Madera County Office of Education will use the vulnerability analysis and mitigation strategy to address potential losses during regular maintenance programs, such as securing roofs for extreme wind events; elevating or relocating portable structures in the defined floodplains; applying current building code provisions when modifying or upgrading school buildings; and using the hazards and vulnerability information to identify possible emergency response problems when school emergency operations plans and procedures are periodically updated.

8.3 CONTINUED PUBLIC INVOLVEMENT

The requirements for continued public involvement, as stipulated in the DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PLAN MAINTENANCE PROCESS

Continued Public Involvement

Requirement §201.6(c)(4)(iii): [The plan maintenance process shall include a] discussion on how the community will continue public participation in the plan maintenance process.

Element

- Does the new or updated plan explain how continued public participation will be obtained? (For example, will there be public notices, an ongoing mitigation plan committee, or annual review meetings with stakeholders?)

Source: FEMA 2010.

The Madera County OES and Planning Committee are dedicated to involving the public directly in the continual reshaping and updating of the 2010 LHMP. A downloadable copy of the 2010 LHMP will be available on Madera County OES' website. Also, any proposed changes or updates will be posted on Madera County OES' website. Madera County OES' website will also contain an e-mail address and phone number to which people can direct their comments or concerns.

As noted above, the Planning Committee will be retained to oversee implementation, examine the annual review questionnaires and project progress reports, modify the implementation strategy and process as needed, and update the LHMP as required. Periodic stakeholders meetings will be held to assure continued outreach to a broader audience. Public notices and releases will be used to inform the public and to invite their comments and attendance at meetings. Particular attention will be given to inviting the City of Chowchilla and the Chukchansi Rancheria to integrate their update processes into the Madera County LHMP.

8.4 ADDITIONAL TRIBAL REQUIREMENTS

Additional Tribal requirements for monitoring the progress of mitigation activities, as stipulated in DMA 2000 and its implementing regulations, are described below.

DMA 2000 REQUIREMENTS: PLAN MAINTENANCE PROCESS

Monitoring Progress of Mitigation Activities

Requirement §201.7(c)(4)(ii), Requirement §201.7(c)(4)(v): [The plan maintenance process shall include a] system for monitoring implementation of mitigation measures and project closeouts; and a system for reviewing progress on achieving goals as well as activities and projects outlined in the mitigation strategy.

Element

- Does the new or updated plan describe how mitigation measures and project closeouts will be monitored?
- Does the new or updated plan identify a system for reviewing progress on achieving goals and implementing activities and projects in the Mitigation Strategy?

Source: FEMA 2010.

Through the Tribal Government's Environmental Department, the North Fork Rancheria of the Mono Indians will participate in regular reviews and other procedures that govern the other three participating jurisdictions. The Tribal Council also will provide a system for this through its

monthly "public scoping" meetings. These sessions keep tribal citizens up-to-date on all of the tribe's programs and activities, including the preparation of and updating of the LHMP at the appropriate times. The scoping sessions provide critical direct feedback to and discussion with Tribal Council members.

The Tribal Government will manage mitigation projects, monitor and report on their progress, and be responsible for project closeout actions. It also has lead responsibility for all administrative activities, including reviewing and reporting on achieving mitigation goals, activities, and specific projects.

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American Meteorological Society. 2001. Glossary of Meteorology. Second Edition: An Update (accessed December 10, 2009) http://amsglossary.allenpress.com/glossary/browse

Association of State Dam Safety Officials. 2009. Dam Failures, Dam Incidents (Near Failures) (accessed November 4, 2009). http://www.damsafety.org/news/?p=97651b9a-58ea-4754-88ed-c216f3cda064

California Emergency Management Agency (CalEMA). 2009. Emergency and Disaster Proclamations and Executive Orders by Type (November 2003 – Current) (accessed December 10, 2009). http://www.oes.ca.gov/WebPage/oeswebsite.nsf/content/08EEEC514BC02A7B882573D4005828B4?OpenDocument

California Employment Development Department. 2009. Labor Market Info, Madera County Profile (accessed January 27, 2010) http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/localAreaProfileQSResults.asp?selectedarea=Madera+County&selectedindex=20&menuChoice=localAreaPro&state=true&geogArea=0604000039&countyName=

California Office of Emergency Services (Cal OES). 1999. Origins and Development: A Chronology 1917-1999 (accessed December 10, 2009).

Cal OES. 2007. *State of California Multi-Hazard Mitigation Plan.* http://www.oes.ca.gov/Operational/OESHome.nsf/0/DE011AC74CA7B73A88256B7B0026B5F3?OpenDocument#The%20Disasters

California Geological Survey. 2009. California Historical Earthquake Online Database. (Accessed December 10, 2009). http://redirect.conservation.ca.gov/cgs/rghm/quakes/historical/index.htm

California Geological Survey. 2007. Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps. Special Publication 42, Interim Revision 2007.

California Highway Patrol. 2008. "Fog-Related Collisions and Victims 1997-Available 2007 and Available 2008. CHP #800521. December 15, 2008. (accessed November 5, 2009). http://www.foguniversity.com/?n=history&s=rt99

City of Chowchilla, December 31, 2008. *Local Hazard Mitigation Plan (draft).*

City of Madera, October 2009, *General Plan – Safety Element*.

City of Madera, 2010 (pending), *Emergency Response Plan*.

City of Madera, June 9, 2004, *Stormwater Quality Management Plan*.

County of Madera, Sheriff's Department. 2010. *Operational Area Emergency Operations Plan.*

County of Madera, Planning Department, October 24, 1995, *General Plan Background Report*.

County of Madera, Planning Department, October 24, 1995, *General Plan Policy Document*.

County of Madera, Planning Department, March 21, 1995, *Final Rio Mesa Area Plan*.

Durham, David L. 1998. *California's Historic Names: A Gazetteer of Historic and Modern Names of the State*. Quill Driver Books.

FEMA. 2009. California Disaster History (accessed December 10, 2009). http://www.fema.gov/news/disasters_state.fema?id=6

FEMA. 2008. Madera County Flood Insurance Study. Flood Insurance Study Number 06039CV000A. September 26, 2008.

Madera Chamber of Commerce. 2009. Demographics (accessed November 5, 2009). http://www.maderachamber.com/content/view/37/92/

National Climatic Data Center (NCDC). 2009a. U.S. Local Storm Events Data (accessed October 23, 2009). http://www.ncdc.noaa.gov/oa/climate/severeweather/extremes.html

National Climatic Data Center (NCDC). 2009b. Current Standardized Precipitation Index (accessed November 5, 2009). http://lwf.ncdc.noaa.gov/oa/climate/research/prelim/drought/spi.html]

National Oceanic and Atmospheric Administration (NOAA). 2009. Storm Prediction Center. The Online Tornado FAQ (accessed December 10, 2009). http://www.spc.noaa.gov/faq/tornado/

National Response Center. 2009. NRC On-line Reporting Tool (accessed November 5, 2009). http://www.nrc.uscg.mil/nrchp.html

National Weather Service. 2009a. National Weather Service Glossary (accessed November 5, 2009). http://www.nws.noaa.gov/glossary/

National Weather Service. 2009b. Forecast Office, San Joaquin Valley/Hanford, CA (accessed November 12, 2009). http://www.wrh.noaa.gov/hnx/maemain.php

Paulson, R.W., Chase, E.B., Roberts, R.S., and Moody, D.W., Compilers. *National Water Summary 1988-89--Hydrologic Events and Floods and Droughts: U.S. Geological Survey Water-Supply Paper 2375*.

Picayune Rancheria of the Chukchansi Indians, December 8, 2005, *Multi-Hazard Mitigation Plan.*

State of California Department of Water Resources, Drought Operations Center. *California's Drought Update*. September 30, 2009.

State of California Department of Water Resources, Division of Safety of Dams. 2009. Listing of Dams (accessed October 23, 2009). http://www.water.ca.gov/damsafety/damlisting/index.cfm

State of California Office of Emergency Services. 2007. Multi-Hazard Mitigation Plan.

USACE (U.S. Army Corps of Engineers). 2009. National Inventory of Dams (accessed October 23, 2009). https://rsgis.crrel.usace.army.mil/apex/f?p=397:1:360704791203179::NO:::

USGS (U.S. Geological Survey). 2004. The Severity of an Earthquake (accessed July 2, 2008). http://pubs.usgs.gov/gip/earthq4/severitygip.html.

USGS. (U.S. Geological Survey), 2006, Quaternary fault and fold database for the United States. (Accessed October 22, 2009). http//earthquakes.usgs.gov/regional/qfaults/

USGS. 2009. National Earthquake Information Center (accessed December 10, 2009). http://earthquake.usgs.gov/regional/neic/

Appendix A – FEMA Crosswalk

(to be inserted in Final Plan)

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Appendix B – Adoption Resolution

(to be inserted in Final Plan)

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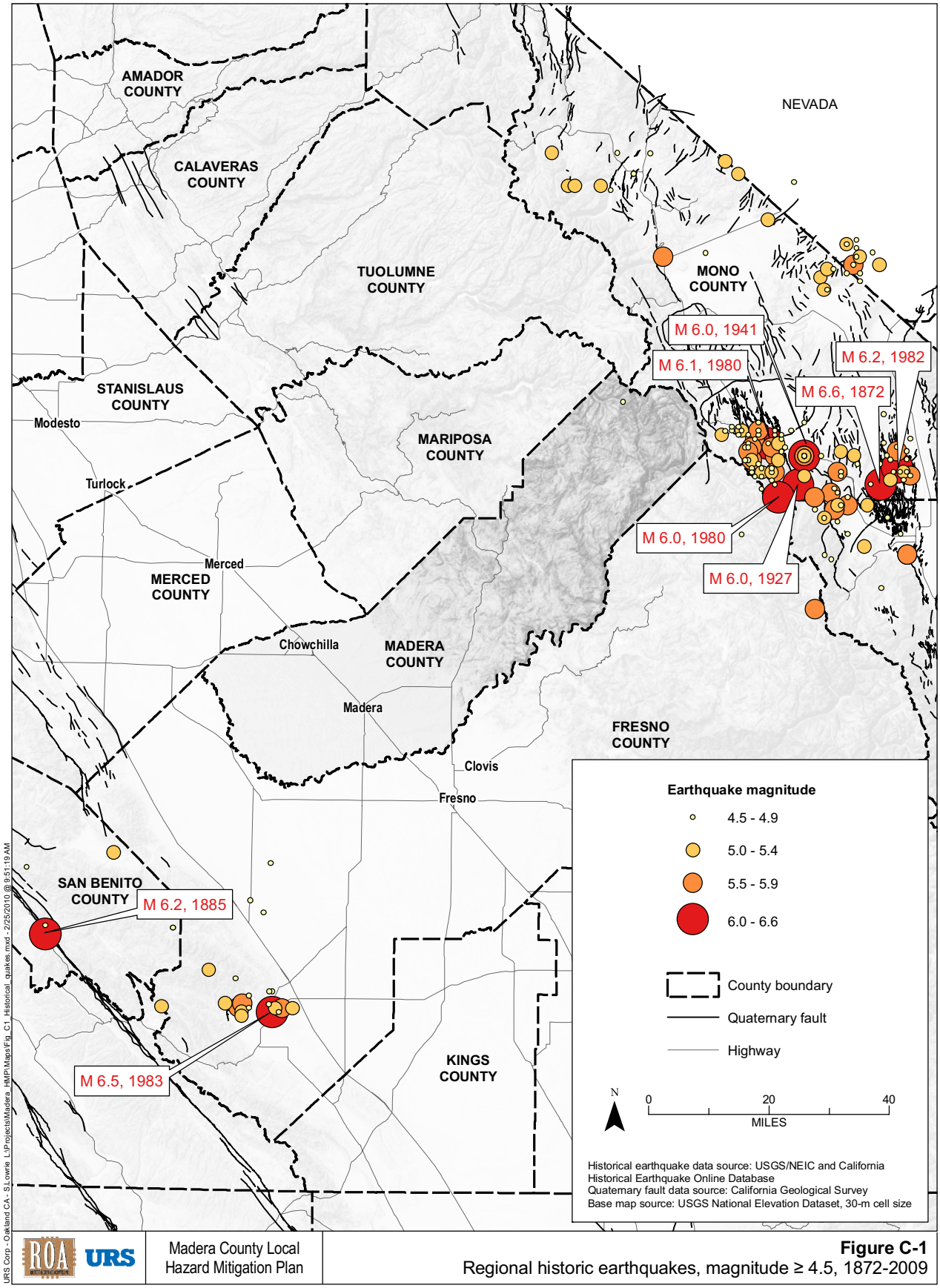
Appendix C – Hazard Figures



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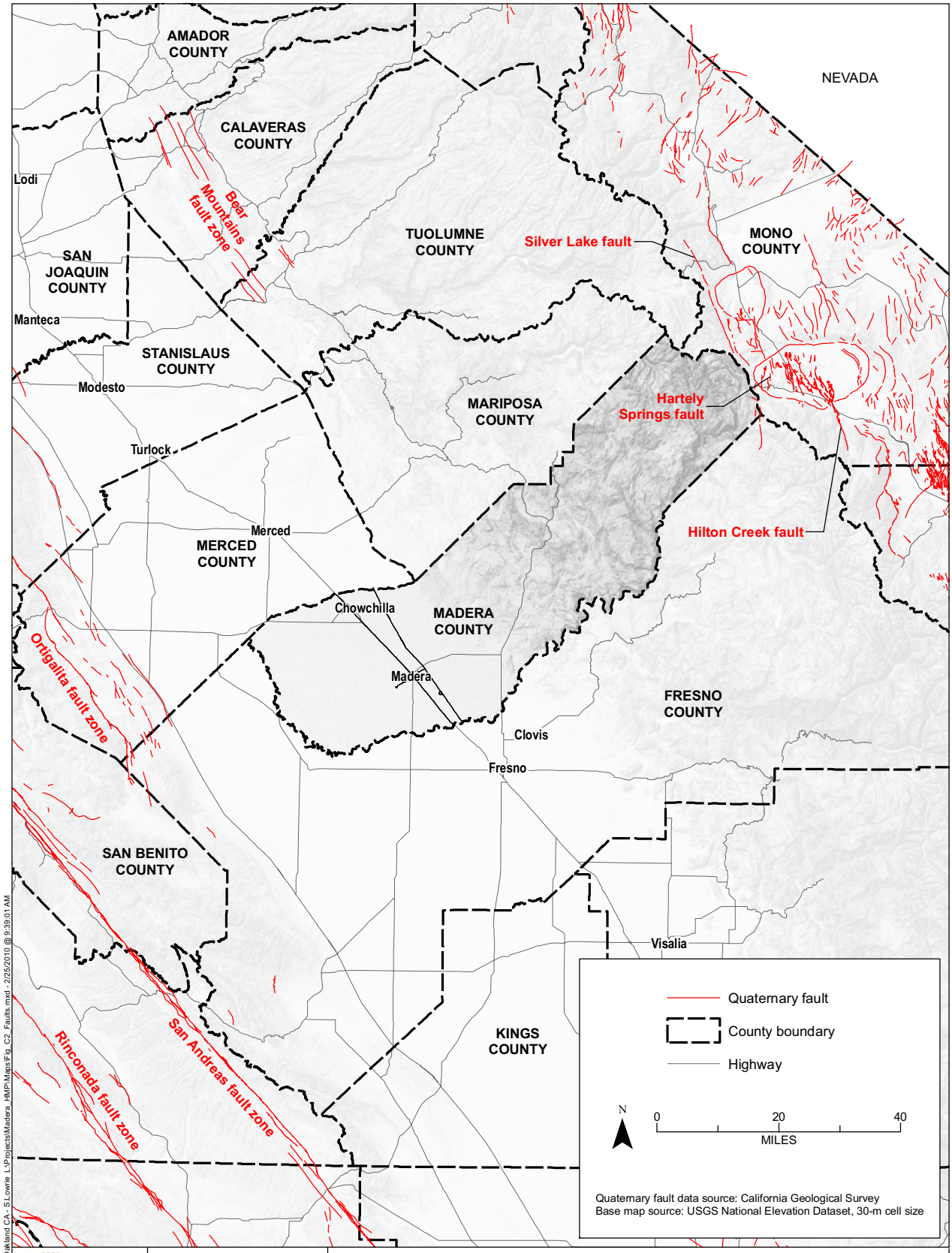
Madera County Local Hazard Mitigation Plan

Figure C-1
Regional historic earthquakes, magnitude ≥ 4.5, 1872-2009



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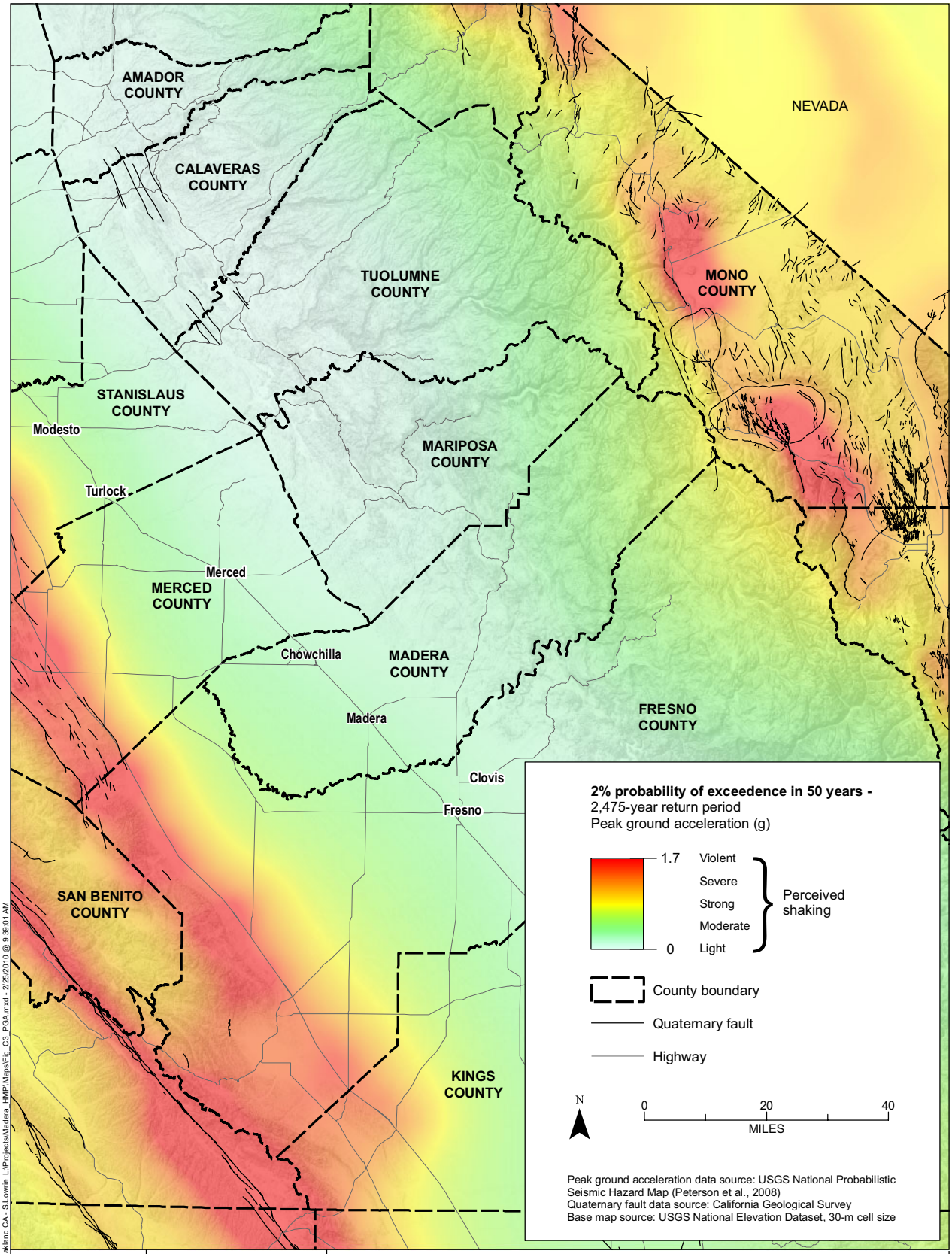
Madera County Local Hazard Mitigation Plan

Figure C-2
Regional faults



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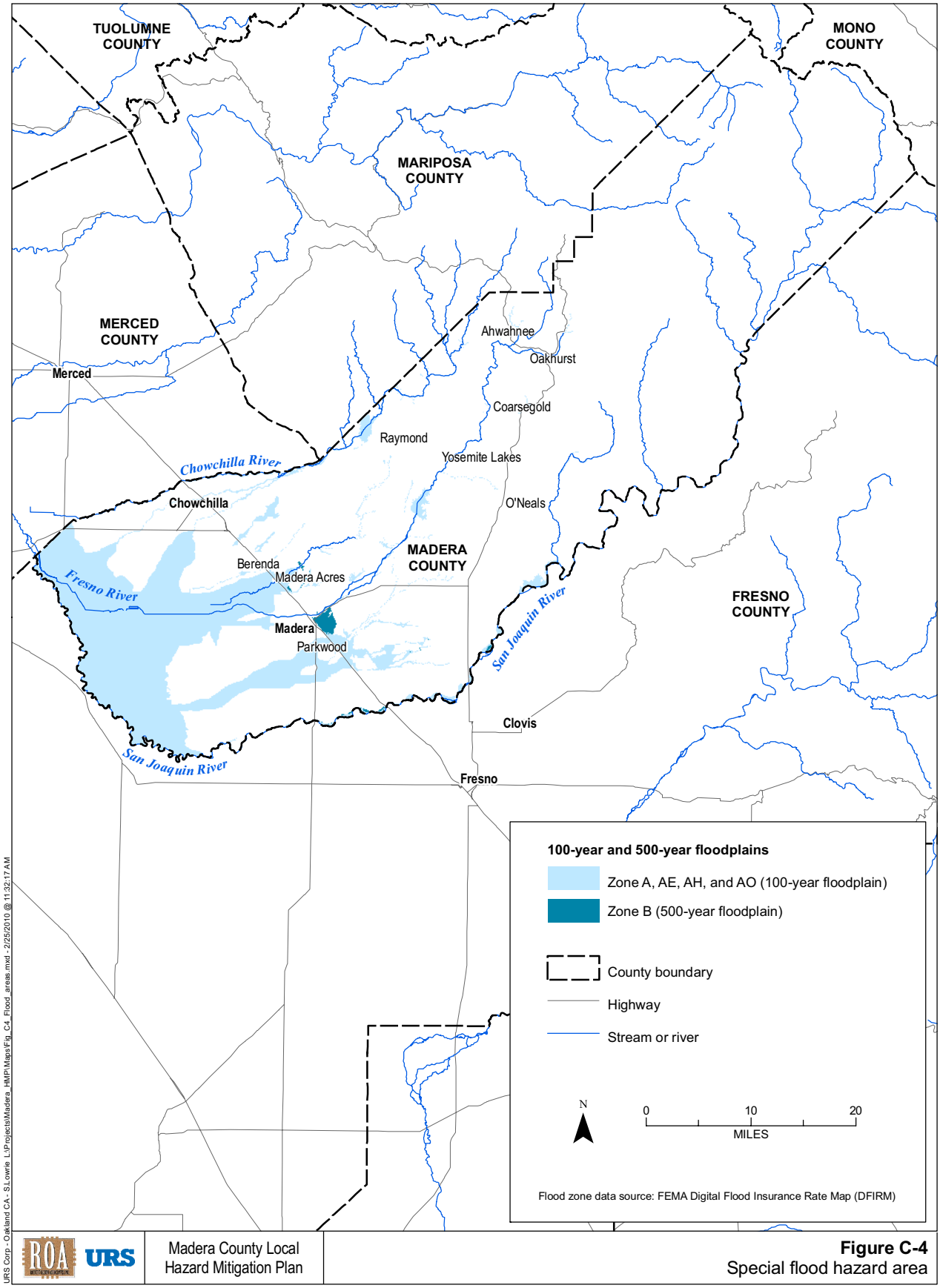
Madera County Local Hazard Mitigation Plan

Figure C-3
Probabilistic seismic hazard



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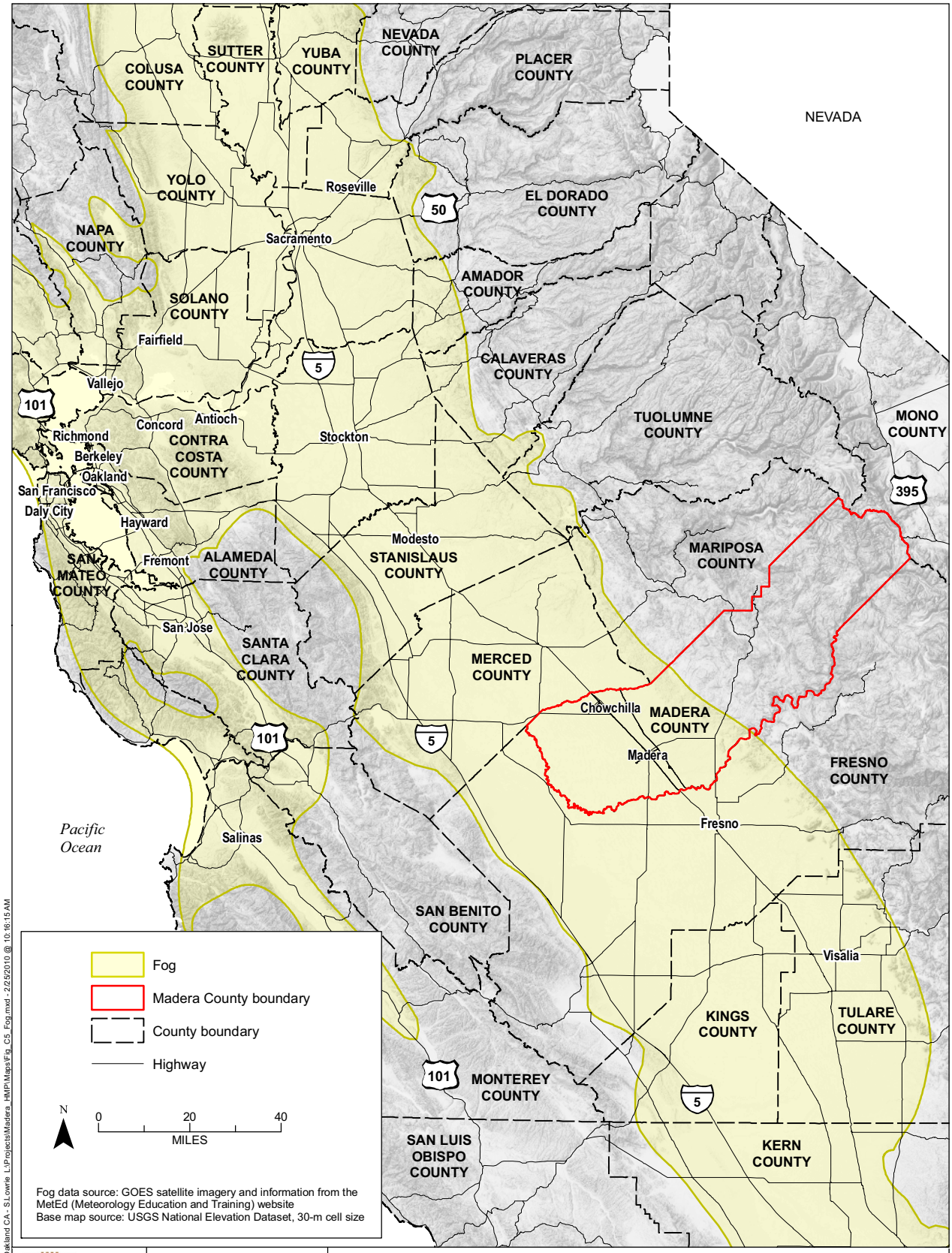
Madera County Local Hazard Mitigation Plan

Figure C-4
Special flood hazard area



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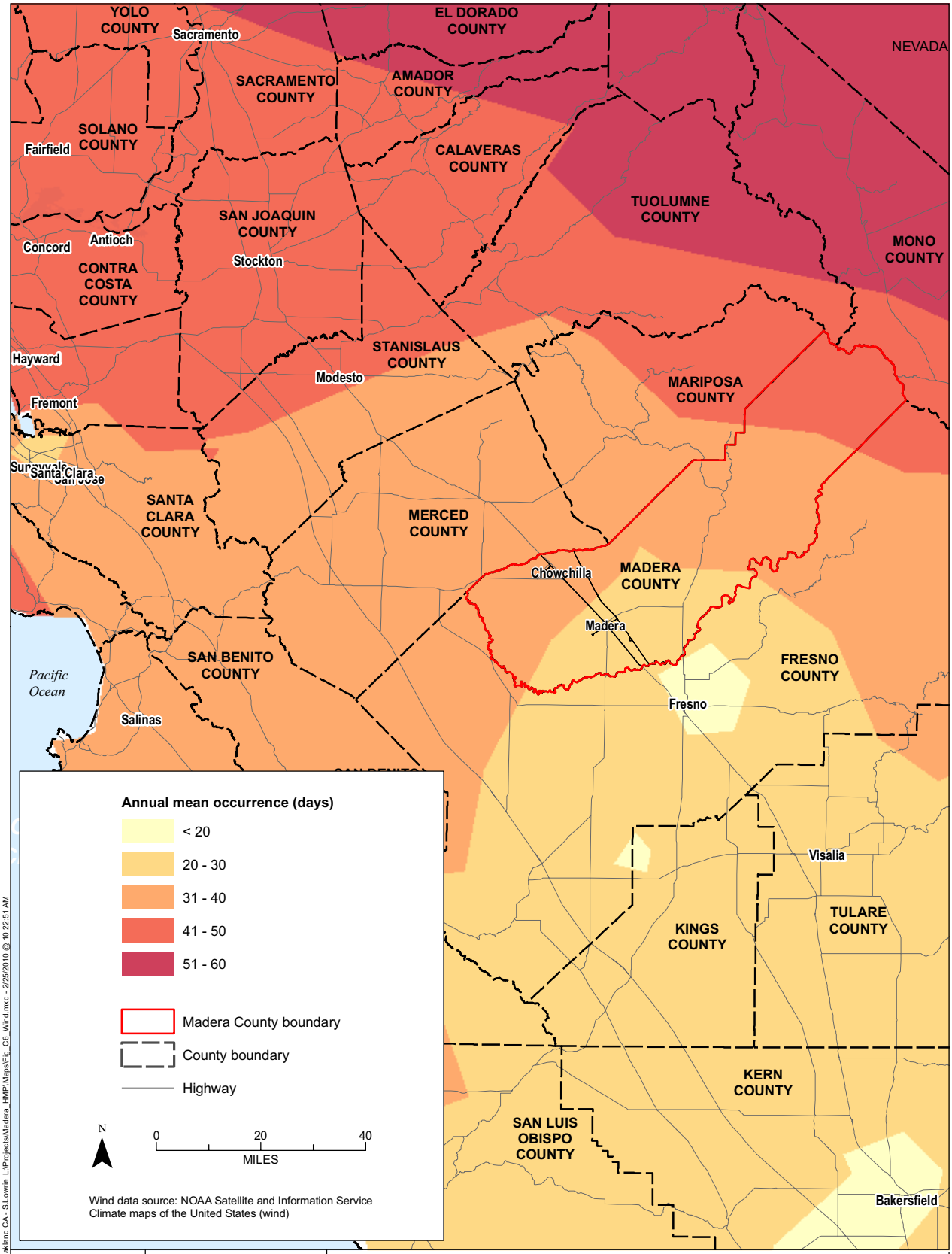
ROA URS

Madera County Local Hazard Mitigation Plan

Figure C-5
Potential fog area, elevation ≤ 656 feet



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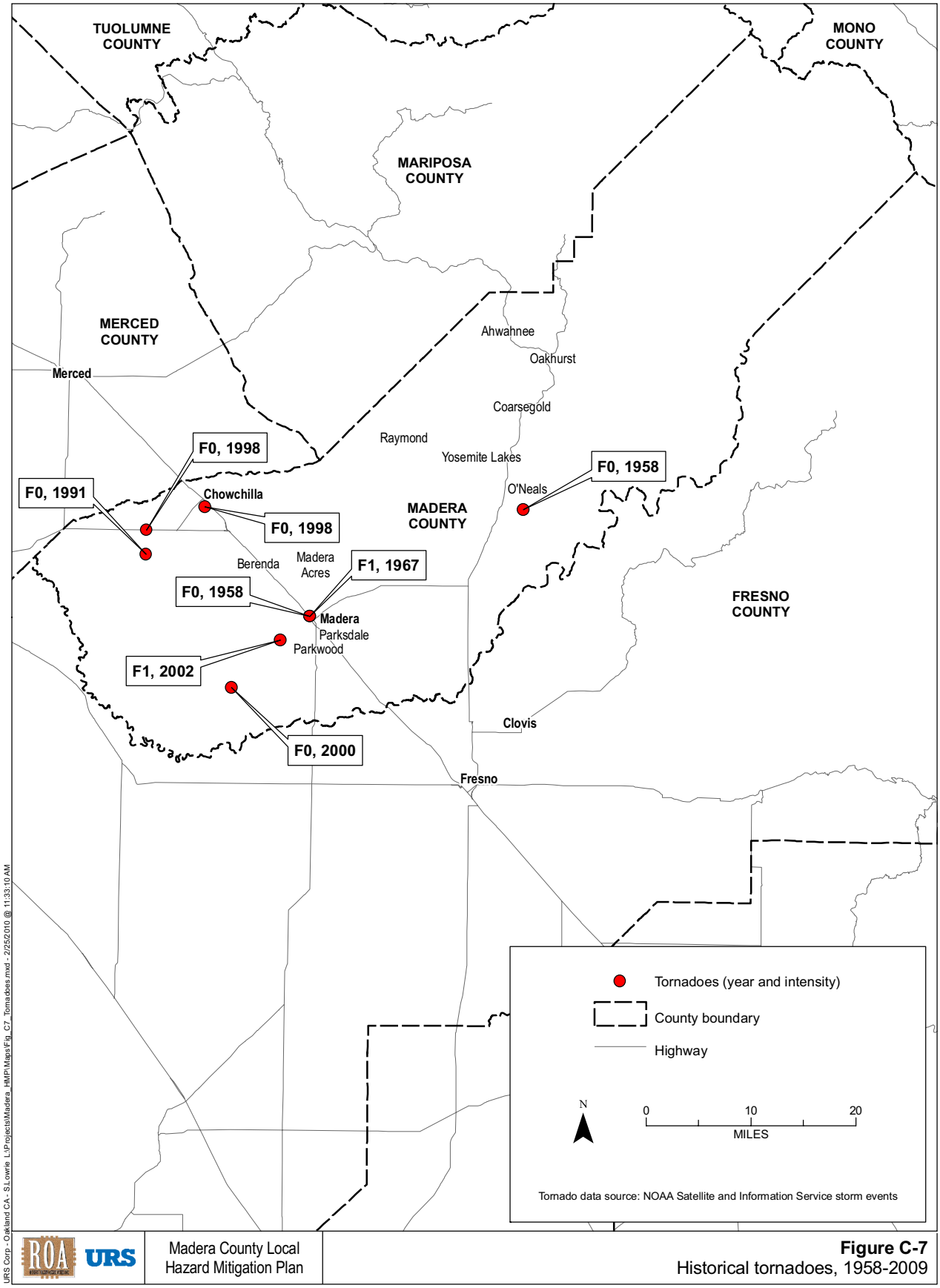
Madera County Local Hazard Mitigation Plan

Figure C-6
Peak wind gusts, ≥ 50 miles per hour



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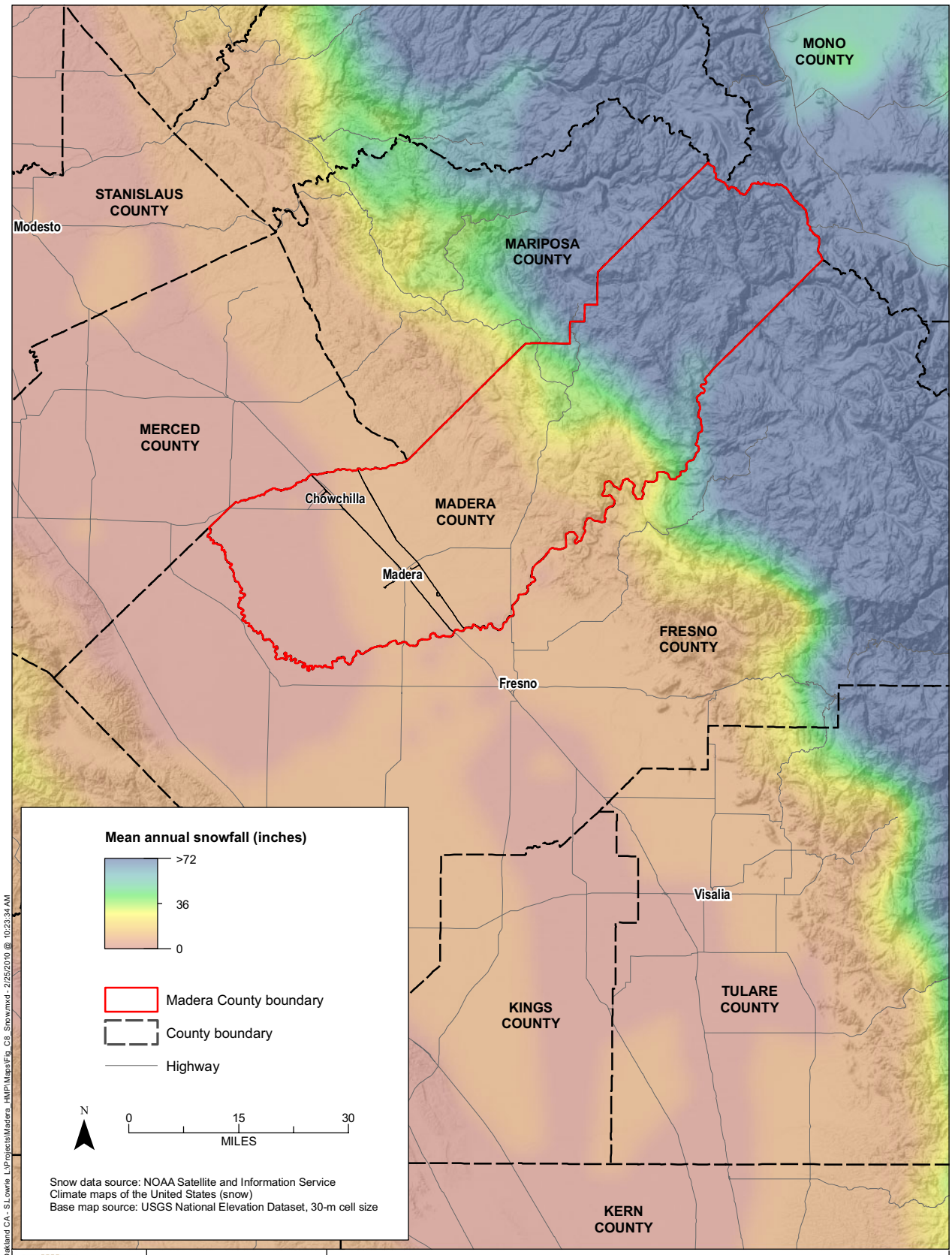
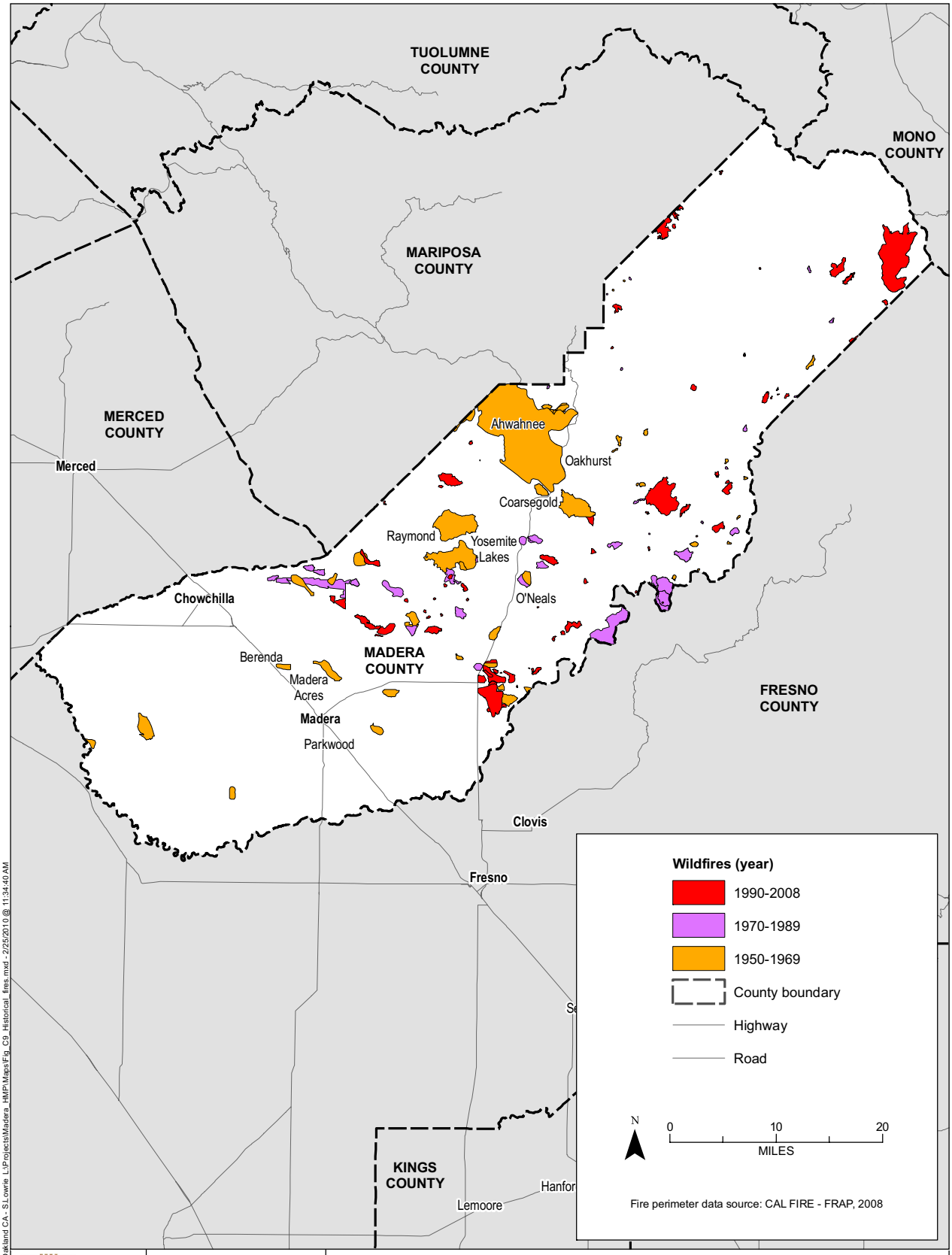
Madera County Local Hazard Mitigation Plan

Figure C-7
Historical tornadoes, 1958-2009



Madera County Local Hazard Mitigation Plan

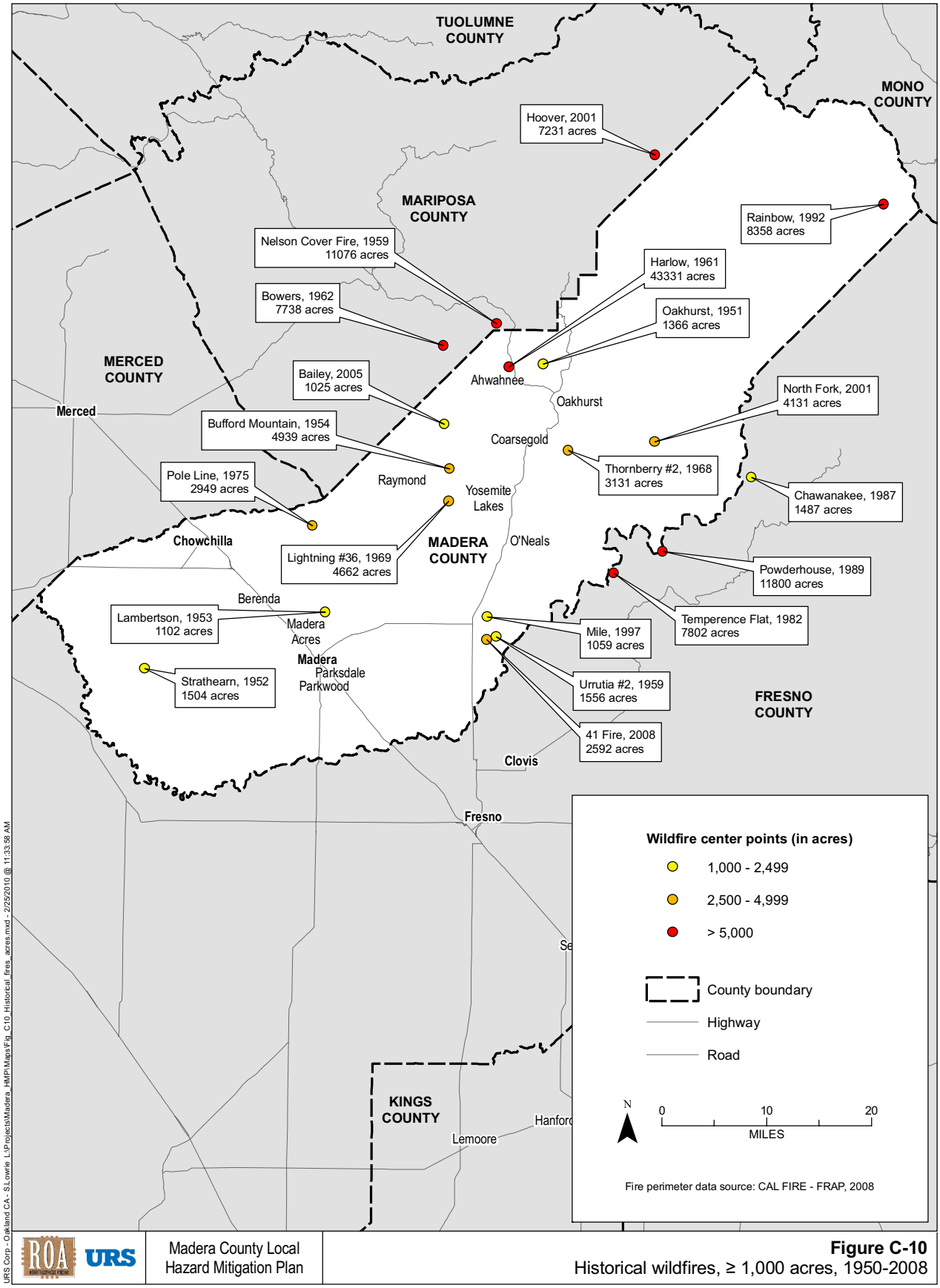
Figure C-8
Average snowfall



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C9_Historical_fires.mxd - 2/25/2010 @ 11:34:40 AM

Madera County Local Hazard Mitigation Plan

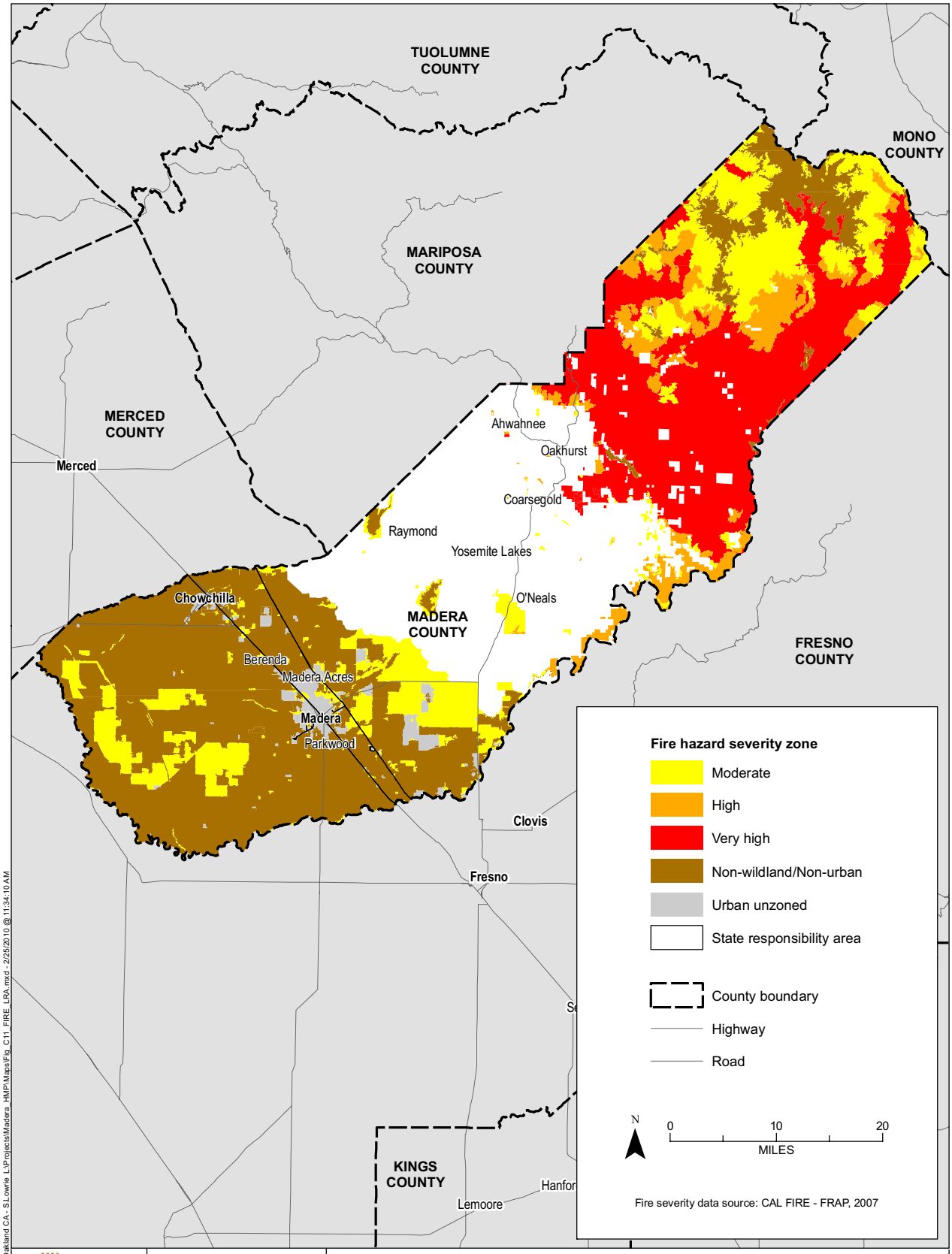
Figure C-9
Historical wildfire perimeters, 1950-2008



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C10_Historical_fires_acres.mxd - 2/29/2010 @ 11:33:58 AM

Madera County Local Hazard Mitigation Plan

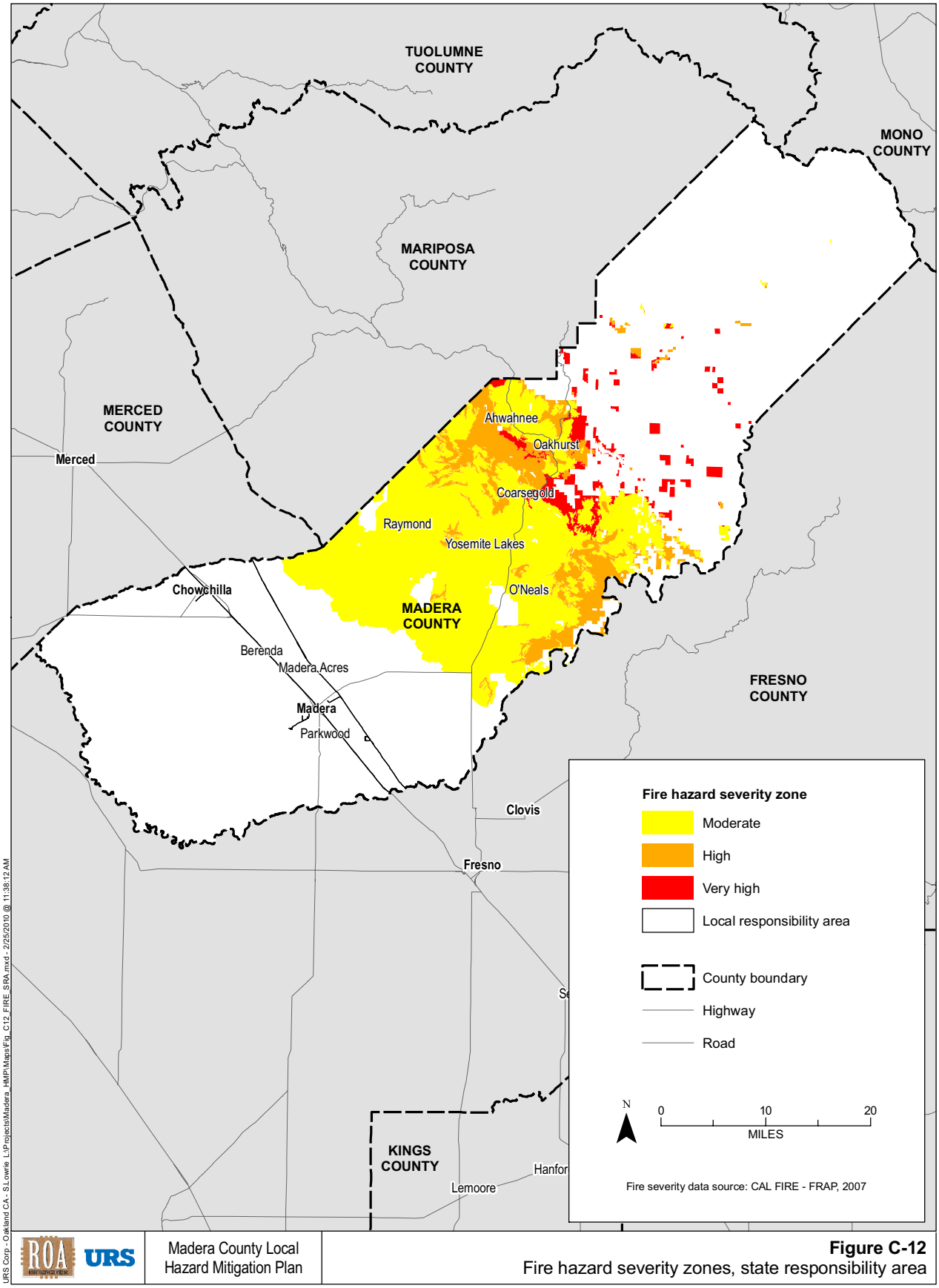
Figure C-10
Historical wildfires, ≥ 1,000 acres, 1950-2008



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C11_FIRE_LRA.mxd - 2/25/2010 @ 11:34:10 AM

Madera County Local Hazard Mitigation Plan

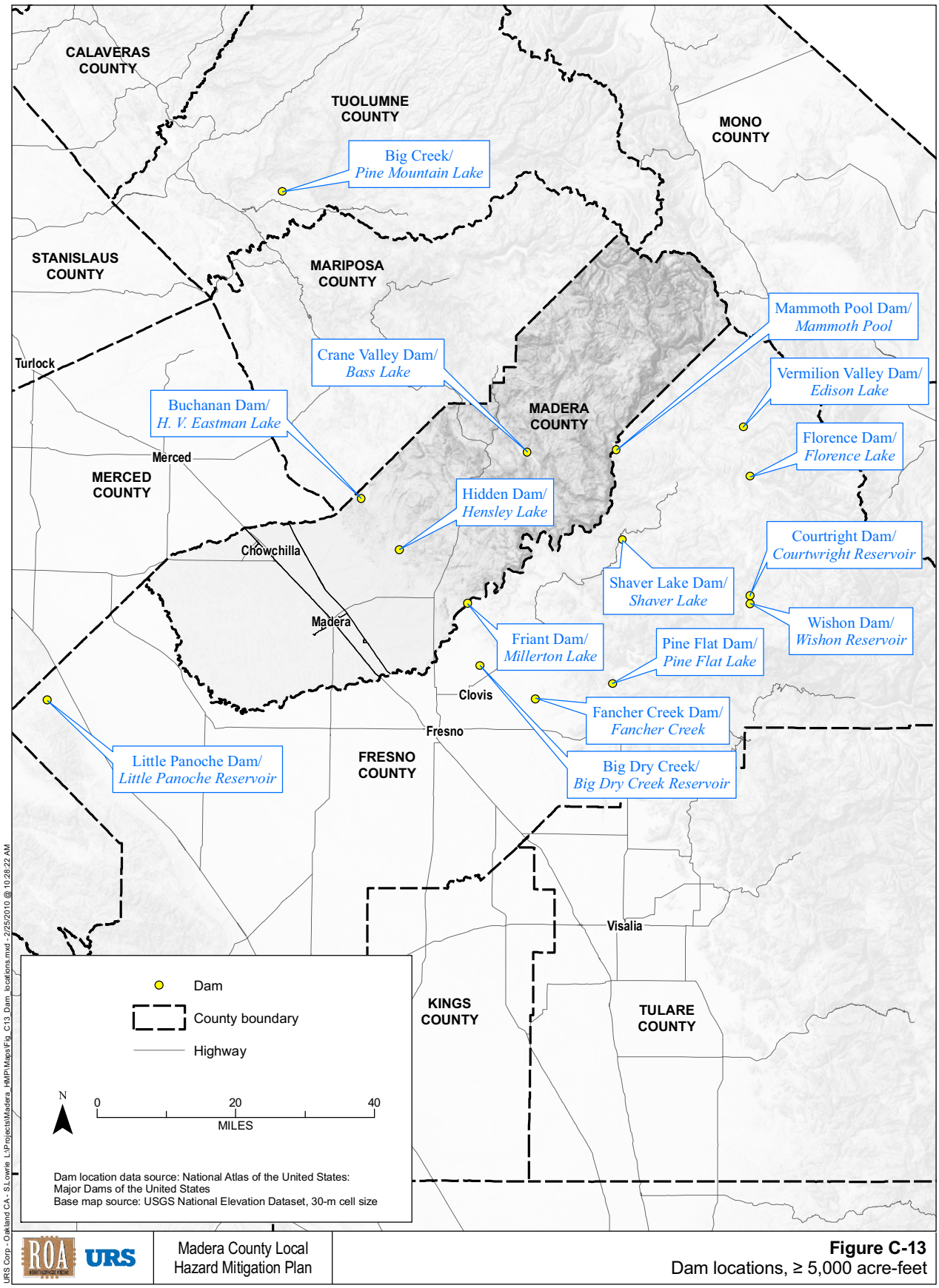
Figure C-11
Fire hazard severity zones, local responsibility area



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C12_FIRE_SRA.mxd - 2/25/2010 @ 11:38:12 AM

Madera County Local Hazard Mitigation Plan

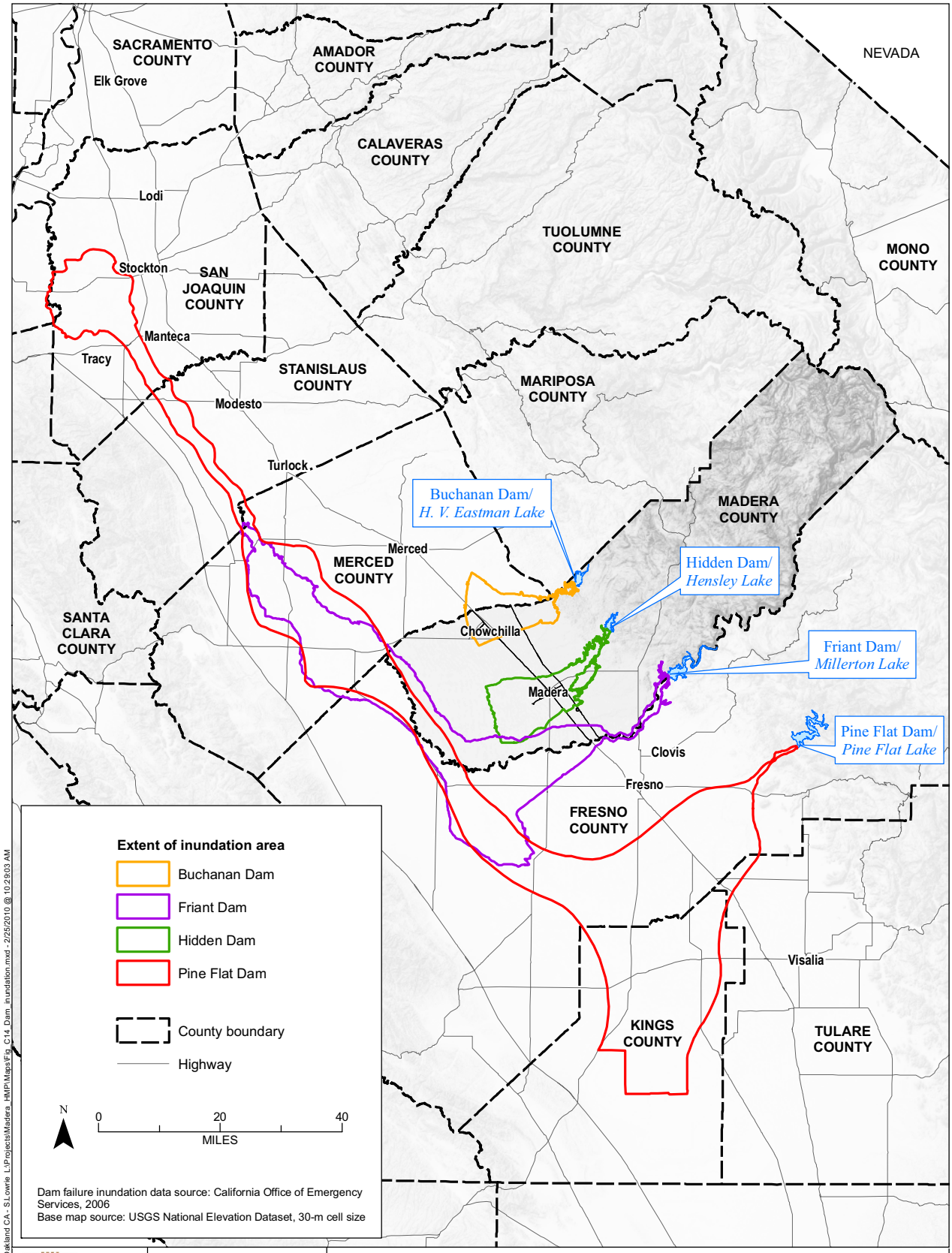
Figure C-12
Fire hazard severity zones, state responsibility area



ROA URS

Madera County Local Hazard Mitigation Plan

Figure C-13
Dam locations, ≥ 5,000 acre-feet

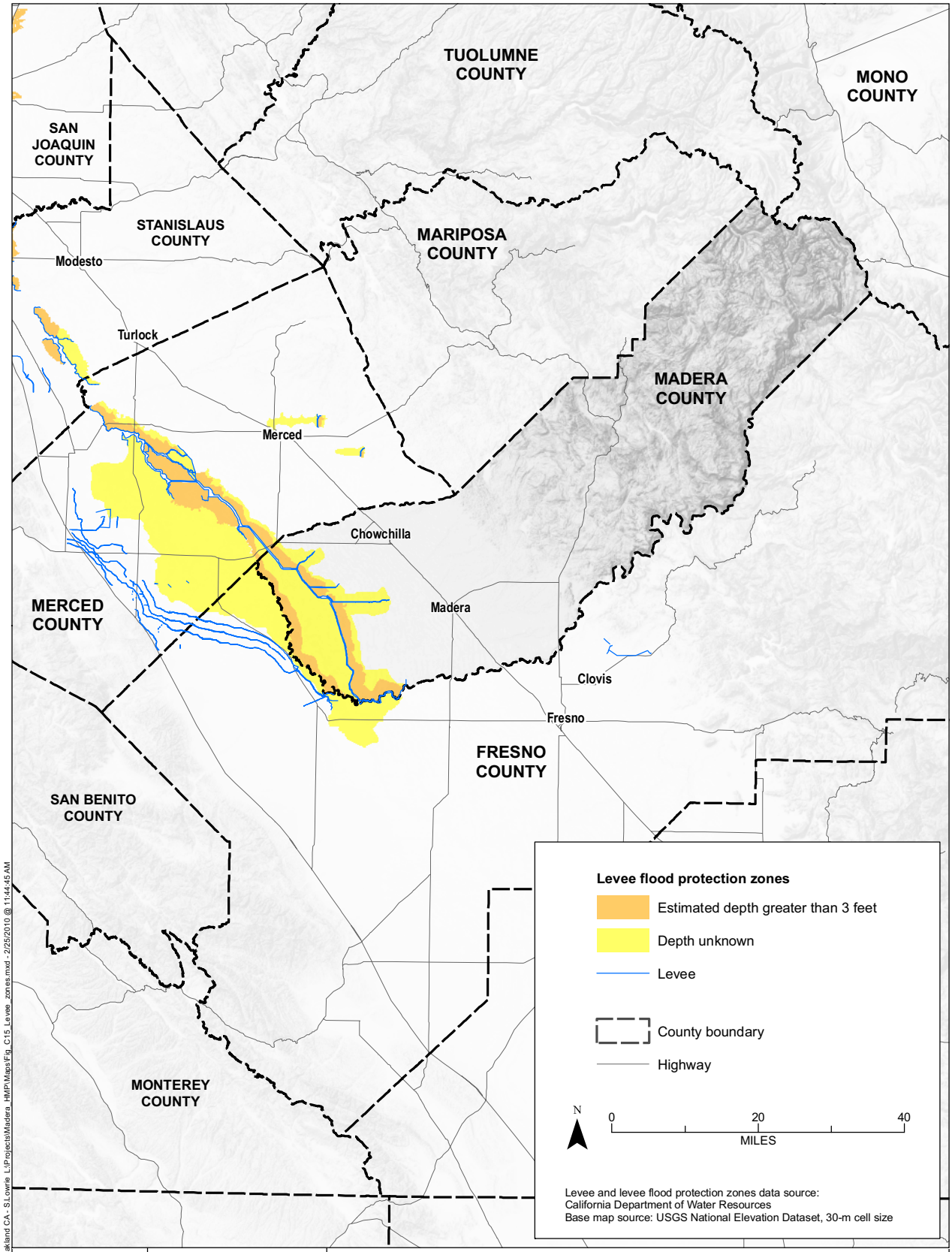


URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C14_Dam_inundation.mxd - 2/25/2010 @ 10:29:03 AM

ROA URS

Madera County Local Hazard Mitigation Plan

Figure C-14
Dam failure inundation areas for state-jurisdictional and federal dams

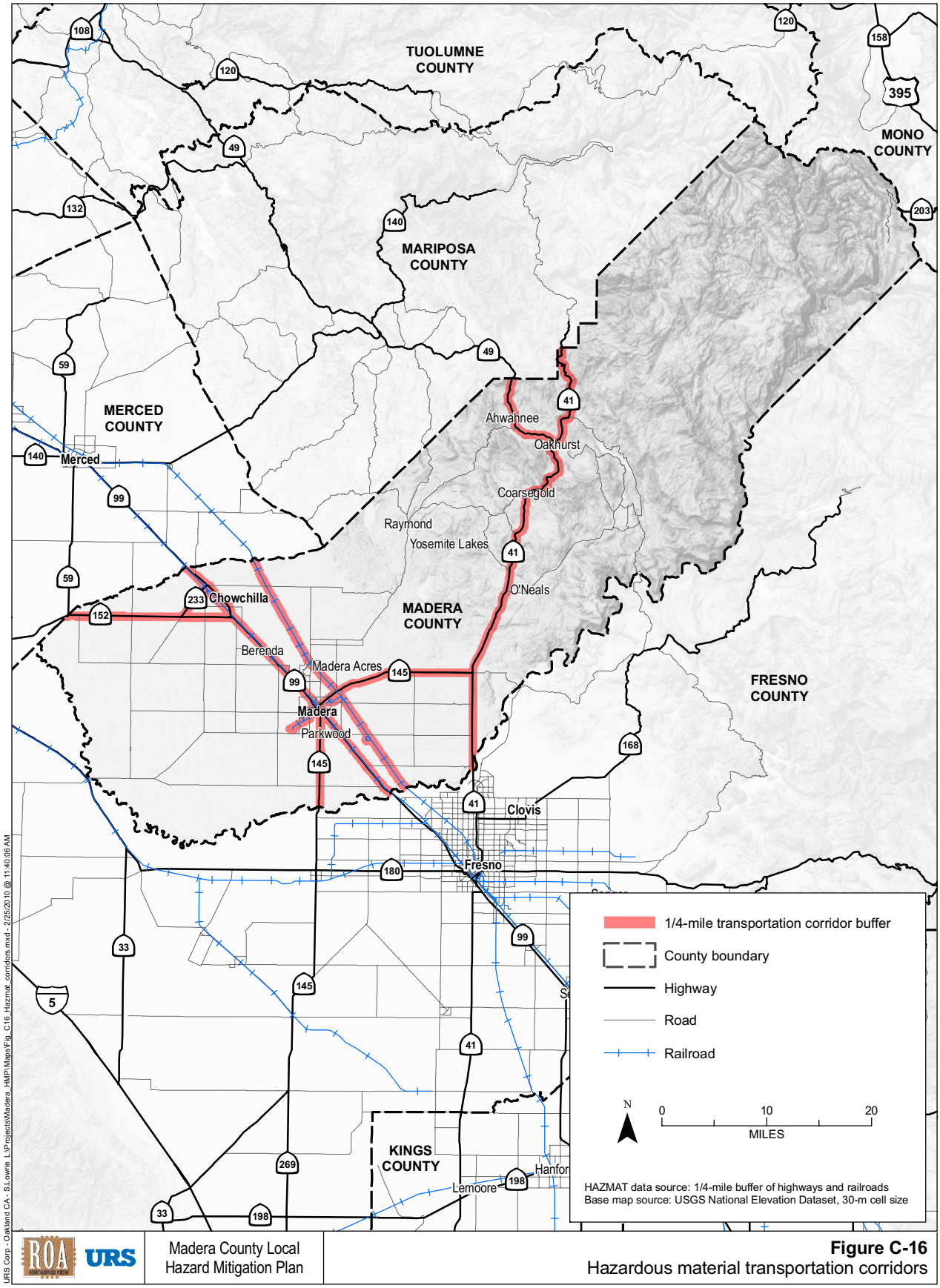


URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C15_Levee_zones.mxd - 2/25/2010 @ 11:44:45 AM

ROA URS

Madera County Local Hazard Mitigation Plan

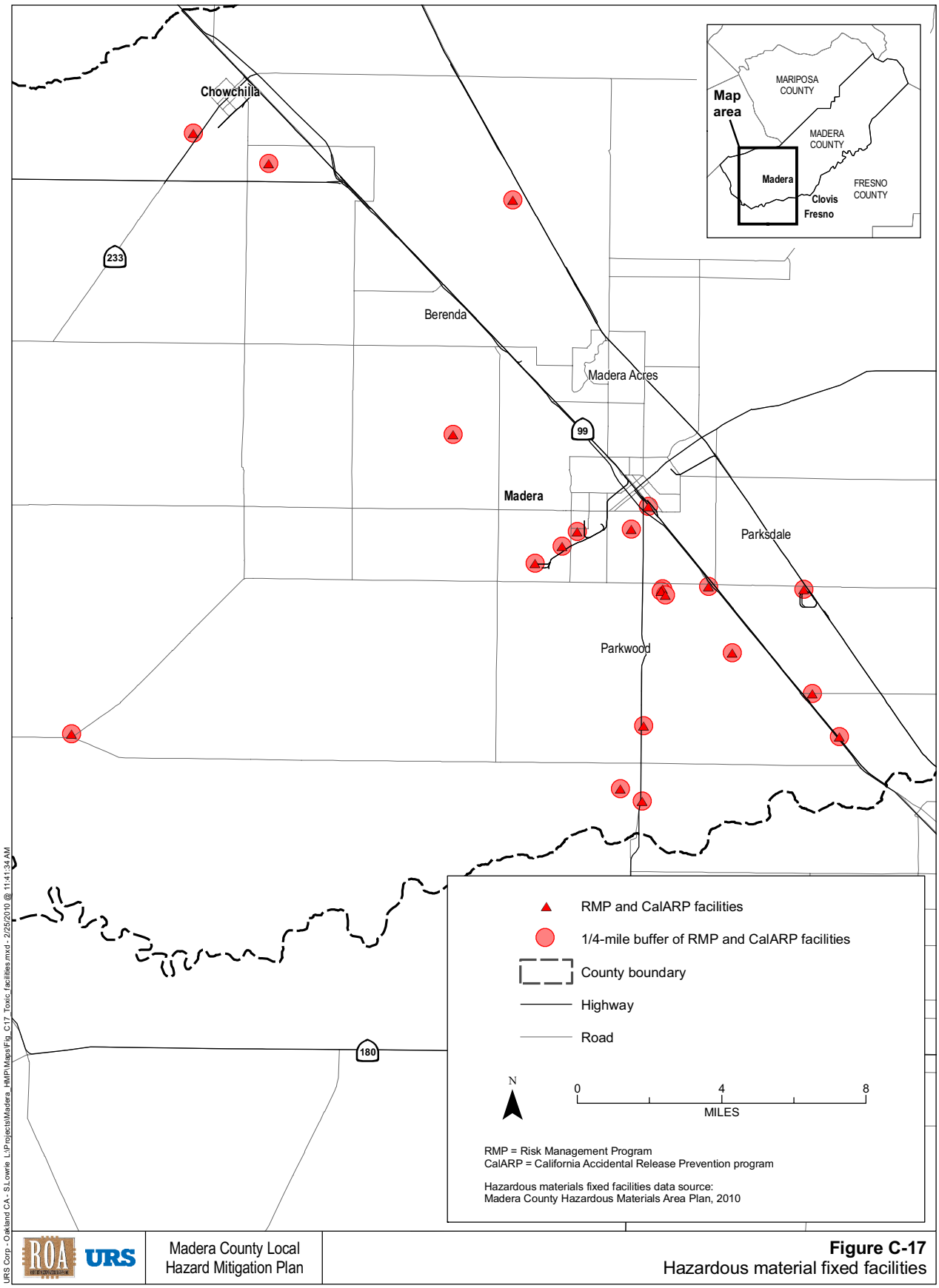
Figure C-15
Levee flood protection zones



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C16_Hazmat_corridors.mxd - 2/25/2010 @ 11:40:06 AM

Madera County Local Hazard Mitigation Plan

Figure C-16
Hazardous material transportation corridors



URS Corp - Oakland CA - SLowrie L:\Projects\Madera_HMP\Maps\Fig_C17_Toxic_facilities.mxd - 2/25/2010 @ 11:41:34 AM

Madera County Local Hazard Mitigation Plan

Figure C-17
Hazardous material fixed facilities

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Appendix D – Planning Committee Meetings

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HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Meeting #1
9:30am – 12:00pm
Thursday, August 27, 2009
Department of Social Services Conference Room
700 E. Yosemite Ave., Madera, CA 93638

AGENDA

9:30	**Registration**
9:45 – 10:00	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
10:00-10:30	**Hazard Mitigation Planning**
	Why Mitigation Planning?
	Disaster Management Act of 2000*
	Types of Funding & Eligible Projects*
10:30-11:00	**Plan Development**
	Plan Outline*
	Schedule*
11:00-11:15	**Break**
11:15-12:00	**Discussion**
	Hazard Identification & Selection*
	Public Involvement
	Questions & Answers

* Additional handout

HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Meeting #1
9:30am – 12:00pm
Thursday, August 27, 2009
Department of Social Services Conference Room
700 E. Yosemite Ave., Madera, CA 93638

MEETING NOTES

ATTENDEES

John Anderson, Madera County Sheriff

Lisa Anderson, Madera County Fire

Susan Arteaga, Madera County Department of Social Services

Chuck Banks, Madera County RACES

Carol Barney, Madera County Public Health

Ray Beach, Madera County RMA

Dennis Blessing, Madera County Veterans Services

Lonn Boyer, Madera County Human Resources

James Brotherton, National Weather Service

Matthew Bullis, City of Madera Public Works

Anna Davis, URS Corporation

Greg Farley, Madera County RMA Engineering

Eric Fleming, Madera County Administration

Steve Frazier, City of Madera Police Department

Bart Fortner, Central California Women's Facility

Brett Gray, Madera Irrigation District

Reggie Hill, Lower San Joaquin Levee District

Christi Hansard, North Fork Rancheria

Keith Helmuth, City of Madera Engineering

David Herman, Madera County Counsel

Johannes Hoevertsz, Madera County RMA Roads

John Holtz, City of Madera

Amy Jewel, URS Corporation

Deborah Keenan, Madera County Fire Marshall

Michael Kime, City of Madera Police Department

David Konno, AmeriCorps

Kimberley Linderholm, Madera County Office of Education

David Macias, Caltrans

HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Meeting #1
9:30am – 12:00pm
Thursday, August 27, 2009
Department of Social Services Conference Room
700 E. Yosemite Ave., Madera, CA 93638

Sharon Martinez, American Red Cross

Darin McCandless, Madera County of Administration

Christina McDonald, North Fork Rancheria

Maria Miranda, Madera County BOS

Kevin Nagata, Cal EMA Inland Region V

David Noblett, City of Chowchilla Police Department

Robert Olson, Robert Olson Associates

Michael Padilla, Madera County Information Technology

Opie Riar, Madera County Office of Education

Jose Rivera, Valley State Prison for Women

Robert Rolan, Madera County Ag Com/Weights & Measures

Tom Shepard, California Highway Patrol

Janet Stanovich, Madera County OES

Steve VonFlue, Madera County Central Garage

Kelly Woodard, Madera County Department of Social Services

AGENDA

9:30	**Registration**
9:45 – 10:00	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
10:00-10:30	**Hazard Mitigation Planning**
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	Types of Funding & Eligible Projects*
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	Plan Outline*
	Schedule*
11:00-11:15	**Break**

HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Meeting #1
9:30am – 12:00pm
Thursday, August 27, 2009
Department of Social Services Conference Room
700 E. Yosemite Ave., Madera, CA 93638

11:15-12:00 Discussion

Hazard Identification & Selection*

Public Involvement

Questions & Answers

* Additional handout

QUESTIONS & ANSWERS

Q1: Can Tribes participate in this plan?

A1: Yes. Tribes will have to address a few different regulations outlined in FEMA's Tribal Mitigation Planning Guidance.

Q2: Can school districts & special districts participate in this process?

A2: Yes. There are two ways in which school districts and special districts can participate. First option, they can participate by having their assets identified within the County's assets. This will ensure that the district's assets are analyzed for vulnerability. If the school districts and special districts participate under the County, they will still be eligible for FEMA grants, but the County must apply on behalf of them. Second option, school districts and special districts can participate as their own "participating jurisdiction." They will be addressed in the plan the same way that the County and cities are addressed – they will have their own asset inventory, vulnerability analysis, capability assessment, and mitigation strategy. If they choose this route, they must attend all Planning Committee meetings and also adopt the plan. By being a "participating jurisdiction" the school district or special district is eligible to apply for FEMA mitigation funding directly to the State (therefore, they do not have to go through the County).

Q3: What hazards should be included in this plan (in addition to those outlined on the Hazard Identification & Selection Sheet (dam failure, drought, fog, hazmat, heat, seismic (ground shaking, landslide, liquefaction, expansive soils), wildfire, winter storm (flood, freeze, wind)?

A3: Severe wind (including tornadoes), levee failure (in addition to dam failure), landslides (due to winter storms).

Q4: Can the hazards be regrouped into weather hazards?

A4: Yes. We could regroup them into the following:

Weather hazards (drought, fog, excessive rain /flood, freeze, severe wind)

Seismic hazards (ground shaking, landslide, liquefaction, expansive soils)

Fire hazards (wildfire)

Other hazards (dam failure, levee failure, hazmat)

Dam failure and levee failure would be considered "other hazards" as they could be caused by a weather hazard (excessive rain) or seismic hazard) ground shaking and liquefaction.

Hazard Mitigation Planning Committee
Meeting #1
9:30am – 12:00pm
Thursday, August 27, 2009
Department of Social Services Conference Room
700 E. Yosemite Ave., Madera, CA 93638

Q5: Could accidents along the highway/rail be considered a hazard?

A5: Possibly, but the measures that can "mitigate" the hazard are more preparedness (rather than mitigation in nature. It is probably easier to address accidents as an effect from a primary hazard, such as fog.

Q6: What is will be the level of involvement for Federal and State agencies and County departments?

A6: Probably more of an advisory role. We will most likely refer to these supporting agencies as "stakeholders." We will ask them to provide input as necessary, including reviewing the draft plan.

Q7: What will be the level of public involvement?

A7: In addition to press releases and posting information on the County's website, there will be 3 public meetings (location to be determined).

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Madera County Sheriff's Headquarters
14143 Road 28, Madera
9:30am – 11:30am
Thursday, November 19, 2009

AGENDA

9:15 – 9:30	**Registration**
9:30 – 9:45	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
9:45 – 10:30	**Hazard Mitigation Planning**
	Disaster Management Act of 2000*
	Local Mitigation Planning Requirements
	Eligible Participants (in addition to Tribes and Local Jurisdictions)*
10:30 – 10:45	**Plan Development**
	Plan Outline*
	Schedule*
10:45 – 11:15	**Section 5: Hazard Analysis**
	Hazard Identification & Selection*
	Hazard Profiles*
	Hazard Figures*
11:15 – 11:30	**Next Steps**
	Vulnerability Analysis*

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Madera County Sheriff's Headquarters
14143 Road 28, Madera
9:30am – 11:30am
Thursday, November 19, 2009

MEETING NOTES

ATTENDEES

John Anderson, Madera County Sheriff

Lisa Anderson, Madera County Fire

Anna Davis, URS Corporation

Amy Jewel, URS Corporation

Kimberley Linderholm, Madera County Office of Education

Robert Olson, Robert Olson Associates

Opie Riar, Madera County Office of Education

Janet Stanovich, Madera County OES

AGENDA

9:15 – 9:30 **Registration**

9:30 – 9:45 **Introductions**

Madera County Sheriff's Department

Hazard Mitigation Planning Committee

ROA/URS

9:45 – 10:30 **Hazard Mitigation Planning**

Disaster Management Act of 2000*

Local Mitigation Planning Requirements

Eligible Participants (in addition to Tribes and Local Jurisdictions)*

10:30 – 10:45 **Plan Development**

Plan Outline*

Schedule*

10:45 – 11:15 **Section 5: Hazard Analysis**

Hazard Identification & Selection*

Hazard Profiles*

Hazard Figures*

11:15 – 11:30 **Next Steps**

Vulnerability Analysis*

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT

Hazard Mitigation Planning Committee
Madera County Sheriff's Headquarters
14143 Road 28, Madera
9:30am – 11:30am
Thursday, November 19, 2009

NOTES

- The Sheriff gave an informal welcome and noted that one disaster in the past was a flood in Chowchilla that damaged county roads and other infrastructure. He noted the importance of this project.
- Reviewed the DMA of 2000 and purpose and requirements of the HMP.
- Reviewed Plan Outline and Schedule. Target completion date is August 2010.
- Reviewed what it means to be participant in the Madera County HMP and asked special districts and tribes to make a decision by the end of December.
    - At least one school district needs further meetings with their superintendent to discuss – they will get back to us.
- Discussed the vulnerability analysis
    - City of Chowchilla has their own plan and one tribe is updating their plan
    - The Madera HMP will reference these existing plans, but still need to get a list of assets and put together with hazards data
    - HAZIS is the software developed with help from Bob that contains an assets database, but it is not fully updated.
    - Assets data will come from the participants at the meeting.
- Janet received a call from Cal EMA asking for a commitment from the cities and districts that will be included in the County HMP.
    - Anna to work with Janet to respond to the Cal EMA request.
- Discussed the capability assessment and what data will be needed.
- Discussed the mitigation goals and actions
    - Target is to include 2-10 projects (FEMA requirement is one or more project for each participating jurisdiction)
- Discussed the results of the hazards analysis
    - Received question on why epidemic and pandemics are not included in the hazards analysis. Responded that these hazards should be referenced but it is very difficult to get mitigation funding for these hazards, so they won't be analyzed in the HMP in great detail.
    - Received question on levees. These can fail even if there is no flood. Need to add to hazards section.
    - Received comment on tornadoes: would like more information on these hazards, including data on historic incidences that have caused damage. Responded that tornado data will be added to the "severe wind" section.
    - Received question on snow; responded that snow is included in the "winter storm" category but a new map could be included showing average snowfall levels.
    - Received comment that more data on historic wildfires are needed.
    - Representative from Environmental Health Department suggested adding data from their office for the hazardous materials section. Bob to follow up and obtain the data so it can be added to the map.

- Comments on maps and the hazards section are due by December 15th.
- Lower San Joaquin Levee District is already included in the Fresno County HMP. Determined that the District does not need to be a participant in the Madera HMP.

SUMMARY OF ACTIONS

- Anna to work with Janet and Ricardo at Cal EMA to discuss what cities and districts will be participants in the Madera HMP.
- Anna and Amy to include data on the following in the hazards analysis:
  - Epidemics and pandemics (no map)
  - Levees (new map)
  - Tornadoes (new map) – Add to severe wind section
  - Snowfall (new map) – Add to the winter storm section
  - Historic wildfires (expand existing map) – Add to existing section
  - Hazardous materials (expand existing map) – Add to existing section.
- Bob to meet with EHS representatives to obtain data.
- Participants at meeting to provide comments by December 15th on hazards analysis and corresponding maps.
- Special districts and tribes to determine participation by December 31st.

MADERA COUNTY
LOCAL HAZARD MITIGATION PLANNING PROJECT

Local Hazard Mitigation Planning Committee Meeting
Madera County Sheriff's
Conference Room
14143 Road 28
Madera, CA 93638
Wednesday, February 10, 2010
9:30am – 11:30am

AGENDA

9:15 – 9:30	**Registration**
9:30 – 9:45	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
9:45 – 10:00	**Hazard Figures**
	Updated Figures
	New Figures
10:00 – 10:45	**Vulnerability Analysis**
	Assets
	Exposure Analysis
10:45 – 11:15	**Capability Assessment**
	Types (local, tribal, school district)
	Human and Technical Resources
	Financial Resources
	Legal and Regulatory Resources
	Current, Ongoing, and Completed Mitigation Projects
11:15 – 11:30	**Next Steps**
	Mitigation Strategy
	Public Meetings
	Next Mitigation Planning Committee Meeting

MADERA COUNTY
LOCAL HAZARD MITIGATION PLANNING PROJECT

Local Hazard Mitigation Planning Committee Meeting
Madera County Sheriff's
Conference Room
14143 Road 28
Madera, CA 93638
Wednesday, February 10, 2010
9:30am – 11:30am

MEETING NOTES

ATTENDEES

John Anderson, Madera County Sheriff

Matt Bullis, City of Madera

Chris Christopherson, Cal Fire/Madera County Fire

Anna Davis, URS Corporation

Jyl Duncan, Madera County Sheriff

Greg Farley, Madera County RMA Engineering

Jeannie Habben, Coarsegold/Fresno Watershed

Christi Hansard, North Fork Rancheria

Reggie Hill, Lower San Joaquin Levee District

Keith Helmuth, City of Madera Engineering

David Herman, Madera County Counsel

Phil Hudecek, Madera County Environmental Health

Deborah Keenan, Madera County Fire Marshal

Kimberley Linderholm, Madera County Office of Education

Darin McCandless, Madera County Administration

David Noblett, Chowchilla Police Department

Robert Olson, Robert Olson Associates

Michael Padilla, Madera County Information Technology

Bradley Philips, Madera County RMA Roads

Keith Quinlan, Madera County RMA Engineering

Opie Riar, Madera County Office of Education

Stephen Rodriguez, Madera County CAO

Mike Salvador

Jay Seslowe, Madera County Ag. Com/Wt. & Measures

Wendy Silva, City of Madera Human Resources

MADERA COUNTY
LOCAL HAZARD MITIGATION PLANNING PROJECT

Local Hazard Mitigation Planning Committee Meeting
Madera County Sheriff's
Conference Room
14143 Road 28
Madera, CA 93638
Wednesday, February 10, 2010
9:30am – 11:30am

Janet Stanovich, Madera County OES

Joanne Upton, City of Chowchilla

Jonathan Williams, Chowchilla Water District

AGENDA

9:15 – 9:30	**Registration**
9:30 – 9:45	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
9:45 – 10:00	**Hazard Figures**
	Updated Figures
	New Figures
10:00 – 10:45	**Vulnerability Analysis**
	Assets
	Exposure Analysis
10:45 – 11:15	**Capability Assessment**
	Types (local, tribal, school district)
	Human and Technical Resources
	Financial Resources
	Legal and Regulatory Resources
	Current, Ongoing, and Completed Mitigation Projects
11:15 – 11:30	**Next Steps**
	Mitigation Strategy
	Public Meetings
	Next Mitigation Planning Committee Meeting

MADERA COUNTY
LOCAL HAZARD MITIGATION PLANNING PROJECT

Local Hazard Mitigation Planning Committee Meeting
Madera County Sheriff's
Conference Room
14143 Road 28
Madera, CA 93638
Wednesday, February 10, 2010
9:30am – 11:30am

NOTES

- Briefly reviewed the DMA of 2000 and purpose and requirements of the HMP.
- Discussed progress made-to-date since last meeting. Updated hazard analysis section and hazard maps have been passed out on a CD.
- Reviewed updated maps as a group and discussed additional revisions to be made.
- Discussed the draft vulnerability analysis, including incomplete and incorrect data.
- Discussed the need for the "local participating jurisdictions" to sign commitment letters to Cal EMA.
- Discussed the draft capability assessments, including incomplete and incorrect information.
- Introduced the mitigation strategy, including types of eligible mitigation projects.

SUMMARY OF ACTIONS

- URS to work with Madera County EOS to finalize local jurisdiction participation forms needed by Cal EMA.
- URS to update the following hazard maps:
    - Levee – add DWR flood inundation information
    - Wildfires – add wildfires 1,000 – 5,000 acres
    - Hazardous material fixed facilities – create new map based on CalARP and RMP facilities received by MC Environmental Health
- ROA to obtain updated data on: MC Public Works facilities, MC fire stations, MC Sheriff's stations, and all North Fork Rancheria asset information.
- ROA to confirm with City of Madera that assets listed are correct.
- URS to work with MC Office of Education to revise school list.
- URS to obtain FHWA bridge dataset and include County-maintained bridge in asset list.
- ROA to work with Madera County to complete capability assessment and work with North Fork Rancheria to develop capability assessment.
- ROA to work with URS economist to determine why the Census block population information is lacking in certain known populated areas of the County.

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT
Hazard Mitigation Planning Committee
Madera County Office of Education
Conference Room A
28123 Avenue 14, Madera 93638
Wednesday, March 31, 2010

AGENDA

9:15 – 9:30	**Registration**
9:30 – 9:40	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
9:40 – 9:45	**Outstanding Items from February 10 Meeting**
	Hazard maps
	Asset data
9:45 – 10:00	**Updated Draft Vulnerability Analyses Review**
	Assets
	Analysis
	Summary Overview
10:00 – 10:15	**Updated Draft Capability Assessments Review (County of Madera, City of Madera, Public Schools, North Fork Rancheria)**
	Human and Technical Resources
	Financial Resources
	Legal and Regulatory Resources
	Current, Ongoing, and Completed Mitigation Projects
10:15 – 10:25	**Break**
10:25 – 11:20	**Mitigation Strategy Development**
	Overview
	FEMA Mitigation Grants
	FEMA Project Eligibility Requirements
	Draft Mitigation Goals
	Potential Mitigation Actions
	Overview of Evaluation and Prioritization Process
	Overview of Mitigation Action Plan
11:20 – 11:30	**Next Steps**
	Refine List of Potential Mitigation Actions
	Evaluate and Prioritize Mitigation Actions

Develop Mitigation Action Plan

Next Mitigation Planning Committee Meeting: Wednesday, May 12?

MEETING NOTES

ATTENDEES

John Anderson, Madera County Sheriff

Carol Barney, Madera County Public Health

Debbie Blankenship, Madera County Department of Social Services

Chris Christopherson, Cal Fire/Madera County Fire

Anna Davis, URS Corporation (via telephone)

Jyl Duncan, Madera County Sheriff

Christi Hansard, North Fork Rancheria

Bonnie Hendrickson, Madera County Assessors Office

Reggie Hill, Lower San Joaquin Levee District

Keith Helmuth, City of Madera Engineering

John Holtz, City of Madera

Deborah Keenan, Madera County Fire Marshal

Mike Kime, City of Madera Police Department

Mena Kuoch, Chukchansi Gold Resort & Casino

Kimberley Linderholm, Madera County Office of Education

Darin McCandless, Madera County Administration

Robert Olson, Robert Olson Associates

Michael Padilla, Madera County Information Technology

Keith Quinlan, Madera County RMA Engineering

Stephen Rodriguez, Madera County CAO

Jay Seslowe, Madera County Ag. Com/Wt. & Measures

Janet Stanovich, Madera County OES

Joanne Upton, City of Chowchilla

Jonathan Williams, Chowchilla Water District

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT
Hazard Mitigation Planning Committee
Madera County Office of Education
Conference Room A
28123 Avenue 14, Madera 93638
Wednesday, March 31, 2010

AGENDA

9:15 – 9:30	**Registration**
9:30 – 9:40	**Introductions**
	Madera County Sheriff's Department
	Hazard Mitigation Planning Committee
	ROA/URS
9:40 – 9:45	**Outstanding Items from February 10 Meeting**
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	Asset data
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	FEMA Mitigation Grants
	FEMA Project Eligibility Requirements
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	Potential Mitigation Actions
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	Overview of Mitigation Action Plan
11:20 – 11:30	**Next Steps**
	Refine List of Potential Mitigation Actions
	Evaluate and Prioritize Mitigation Actions

MADERA COUNTY
HAZARD MITIGATION PLANNING PROJECT
Hazard Mitigation Planning Committee
Madera County Office of Education
Conference Room A
28123 Avenue 14, Madera 93638
Wednesday, March 31, 2010

Develop Mitigation Action Plan

Next Mitigation Planning Committee Meeting: Wednesday, May 12?

NOTES

- Reviewed status of revised (nearly final) hazard maps and explained limits (e.g., 2000 Census data from poor or non-reporting tracts).
- Reviewed status of (nearly final) asset data; emphasized can correct data but now unable to add substantial amounts of new data; confirmed locations of Road Dept. maintenance yards.
- Reviewed status of vulnerability analyses; virtually complete with minor changes discussed or forthcoming.
- Reviewed nearly complete draft capability assessments; individual follow-ups to be made to get final information for each participating jurisdiction.
- Mitigation Strategy development discussed; last major item for the LHMP before going to draft; "workbook" items discussed; consensus reached on three goals; generally reviewed eligibility requirements and examples of previously funded mitigation projects and accompanying tables; focused discussion of Table 8-3, Potential Mitigation Actions, emphasizing "Other" actions to be developed ASAP by participating jurisdictions and Table 8-4, Evaluation and Prioritization Table, emphasizing evaluation of "Other" actions carried forward from Table 8-3, and discussed completion of Table 8-5, Mitigation Action Plan. Using vulnerability/exposure analyses, each participating jurisdiction to identify 1-5 potential mitigation actions that can be done realistically in five (5) years.
- Discussed schedule for individual meetings with participating jurisdictions to complete process.
- Future meetings and draft plan review process to be suggested by consultant. Possible method will be to provide participating jurisdictions with CDs of the draft LHMP; receive their comments and modify draft; meet jointly with the Planning Committee and all original stakeholders to review scope, process, and status prior to formal adoptions being taken.

SUMMARY OF ACTIONS

- ROA to meet with participating jurisdictions to finalize all earlier work (e.g., capability assessments) and especially define their mitigation actions for inclusion in the draft LHMP.
- ROA to suggest scope of remaining activities and a schedule that is intended to achieve the LHMP's adoption in time for the next PDM grant application period established by CalEMA.
- ROA to get "lead time" information from each participating jurisdiction about its schedule to get the LHMP on governing officials' decision agendas.
- ROA and URS to review all remaining activities and prepare an internal schedule for their completion.

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Appendix E – Public Outreach

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John P. Anderson, Sheriff-Coroner

Contact: Erica H. Stuart, P.I.O.
Phone: (559) 675-7976
Cell: (559) 232-8756
E-Mail: estuart@maderacounty.com

DATE **Thursday October 22, 2009**
TO **NEWS MEDIA**
RE: **MADERA COUNTY OES SET TO RELEASE "Local Hazard Mitigation Plan" 2010**

In an effort ensure the future safety of Madera County, Sheriff John Anderson announced the Office of Emergency Services (OES) is now in the final stages of drafting a loss prevention plan that will highlight a wide range of potential threats and how the county would respond to pending disasters.

Its current title, "Madera County Local Hazard Mitigation Plan Development," has been possible through a Federal Grant to study the county's vulnerabilities and potential natural and/or manmade hazards. The county-wide plan is expected to be completed by spring of 2010.

The plan encompasses all areas with Madera County – that includes the cities of Madera, Chowchilla, all unincorporated areas, and Native American Tribal Lands.

The mitigation plan, which is required by law, and once approved, by both (California Emergency Management Agency) Cal EMA and Federal Emergency Management Agency (FEMA), will make Madera County eligible to apply for and receive Federal Funding in the event of a disaster.

The Madera County Office of Emergency Services operates under the jurisdiction of Madera County Sheriff John Anderson.

Under the direction of OES a mitigation planning Task Force was created and includes county, cities, special districts, and tribal representatives, as well as representatives from state and federal agencies with facilities and responsibilities in Madera County.

During its first meeting this past August, the Task Force identified a number of potential threats some of which include: flooding, wildfires, earthquakes, landslides, hazardous materials events, droughts.

It is Sheriff Anderson's hope that a draft of the report will be made available by spring for the public. County-wide Workshops will be held for the public's input concerning ways we can effectively prevent disaster losses before they occur.

Dates for these public workshops are pending.

####

SHERIFF'S DEPARTMENT
MADERA COUNTY
14143 Road 28
Madera, CA 93638

John P. Anderson, Sheriff-Coroner

Contact: Erica H. Stuart, P.I.O.
Phone: (559) 675-7976
Cell: (559) 232-8756
E-Mail: estuart@maderacounty.com

DATE: **Tuesday February 23, 2010**
TO: **NEWS MEDIA**
RE: **SHERIFF JOHN ANDERSON TO HOLD COUNTY "Local Hazard Mitigation Plan" MEETINGS IN OAKHURST & MADERA**

Sheriff John Anderson has scheduled two public meetings to present to Madera County residents and business owners the first draft of Madera County's "Local Hazard Mitigation Plan."

First meeting:

DATE Tuesday, March 30, 2010

TIME 5:30 PM – 7:00 PM

PLACE Oakhurst Community Center (39800 Road 425B Oakhurst)

Second Meeting:

DATE Wednesday, March 31, 2010

TIME 5:30 PM – 7:00 PM

PLACE Madera County Sheriff's Department Headquarters (14143 Road 28, Madera)

A presentation of the draft will be presented to the public and immediately following that introduction the Office of Emergency Services will take questions and/or input concerning the county's vulnerabilities to multiple natural hazards.

BACKGROUND:

In October 2009 it was announced that the county would be designing a draft that dealt with disasters (be they natural or man made) and what steps should be put in place to mitigate future losses.

A federal grant made this project possible.

Areas covered in the mitigation plane include: cities of Madera, all unincorporated areas of Madera County as well as the North Fork Rancheria.

SHERIFF'S DEPARTMENT
MADERA COUNTY

14143 Road 28

Madera, CA 93638

The plan, required by a federal law, addresses flooding, wildfires, earthquakes, high winds, severe snowfalls, dam and levee failures, hazardous materials sites, tornadoes, and potential severe fog areas.

In addition to identifying Madera County's risks and vulnerabilities, this law requires the participants to have a plan approved by the Federal Emergency Management Agency (FEMA) to be eligible for various pre- and post-disaster funding programs.

Example projects include retrofitting earthquake dangerous buildings, replacing obsolete bridges on evacuation routes, strengthening dams and levees, protecting or relocating buildings in the floodplains, improving drainage for flood waters, and defining and helping implement a variety of fire-safe practices.

Results from these meetings could be used by the County to obtain future federal grant funds to complete designated projects and improve the safety of Madera County's residents.

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Appendix F – Plan Maintenance

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Annual Review Questionnaire				
LHMP Section	**Questions**	**Yes**	**No**	**Comments**
PLANNING PROCESS	Are there internal or external organizations and agencies that have been invaluable to the planning process or to mitigation action?			
	Are there procedures (e.g., meeting announcements, plan updates) that can be done differently or more efficiently?			
	Has the Planning Committee undertaken any public outreach activities regarding the LHMP or a mitigation project?			
HAZARD ANALYSIS	Has the natural and/or human-caused disaster occurred in this reporting period?			
	Are there natural and/or human-caused hazards that have not been addressed in this LHMP and should be?			
	Are additional maps or new hazard studies available? If so, what are they and what have they revealed?			
VULNERABILITY ANALYSIS	Do any new assets need to be added to the jurisdiction, tribal, or school district asset lists?			
	Have there been changes in development trends that could create additional risks?			
CAPABILITY ASSESSMENT	Are there different or additional resources (financial, technical, and human) that are now available for mitigation planning?			
MITIGATION STRATEGY	Should new mitigation actions be added? Should any existing mitigation actions be deleted?			

Mitigation Project Progress Report*			
Progress Report Period From (date):		**To (date):**	
Project Title:			
Project ID:			
Description of Project:			
Implementing Agency:			
Supporting Agencies:			
Contact Name:			
Contact E-mail:			
Contact Number:			
Grant/Finance Administrator:			
Total Project Cost:			
Anticipated Cost Overun/Underrun:			
Date of Project Approval:			
Project Start Date:			
Anticipated Completion Date:			
Summary of Progress of Project for this Reporting Period			
1. What was accomplished during this reporting period?			
2. What obstacles, problems, or delays did the project encounter, if any?			
3. How were the problems resolved?			

Appendix G – Madera County

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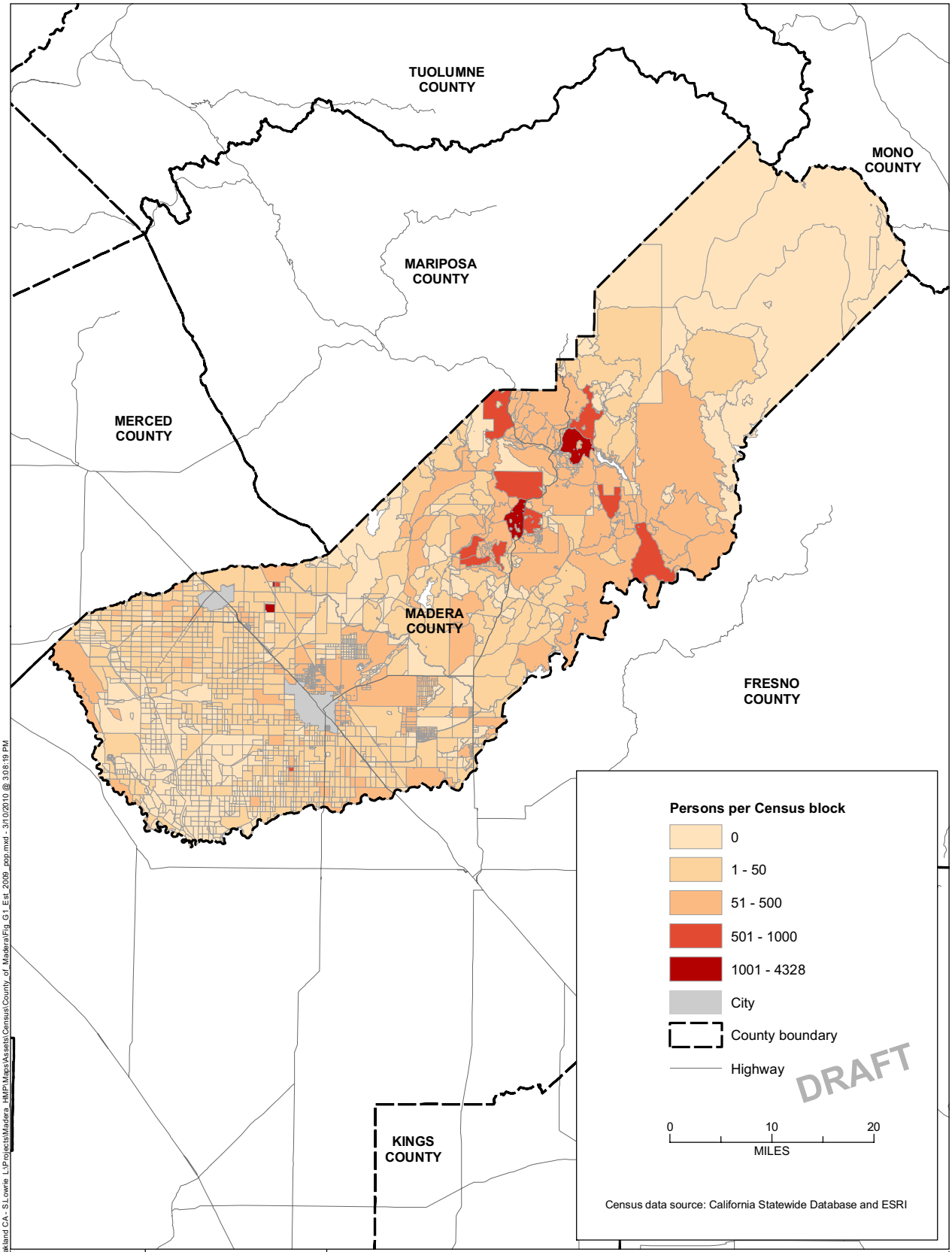

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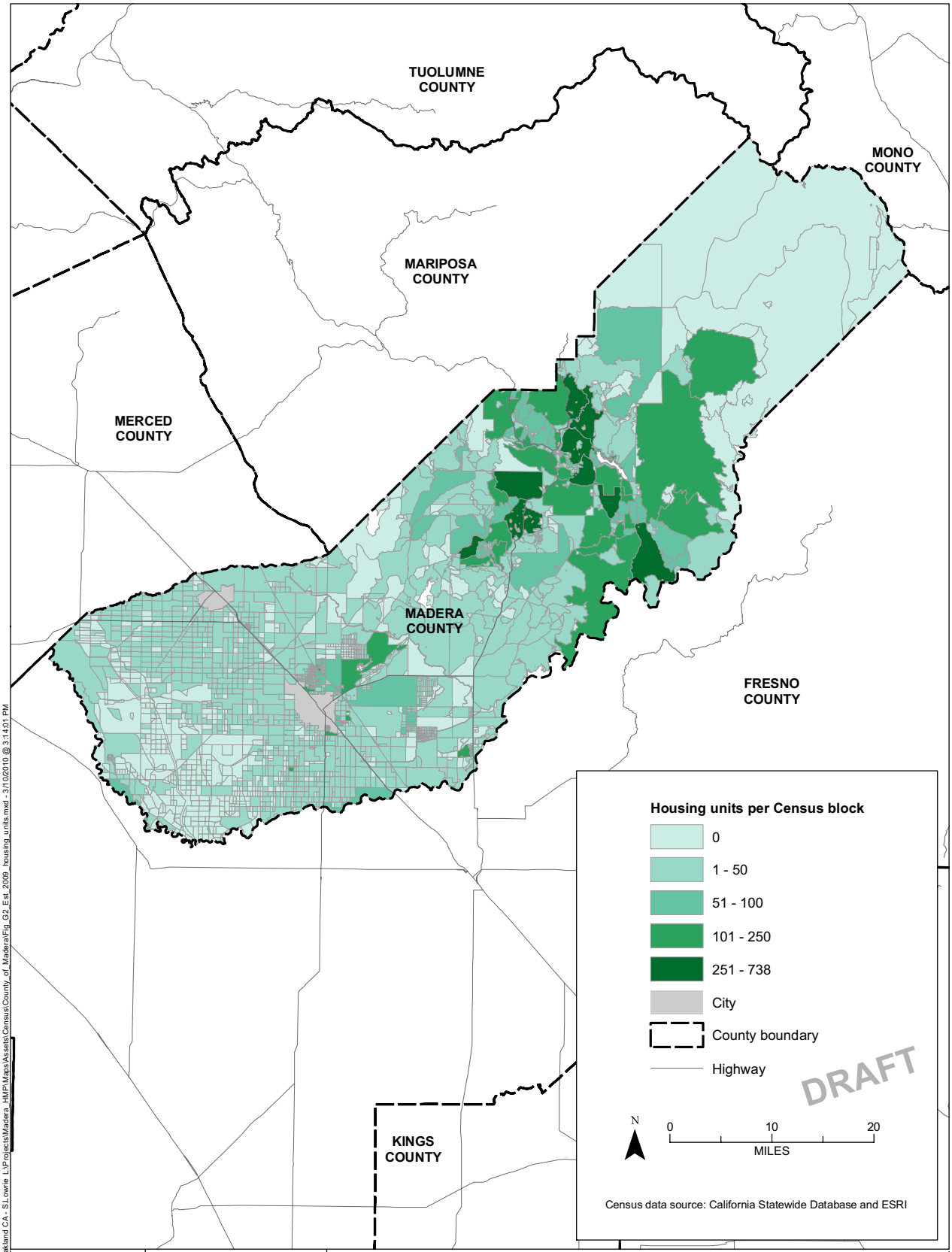
Madera County Local Hazard Mitigation Plan

Figure G-1
Madera County, estimated 2009 population for the unincorporated area



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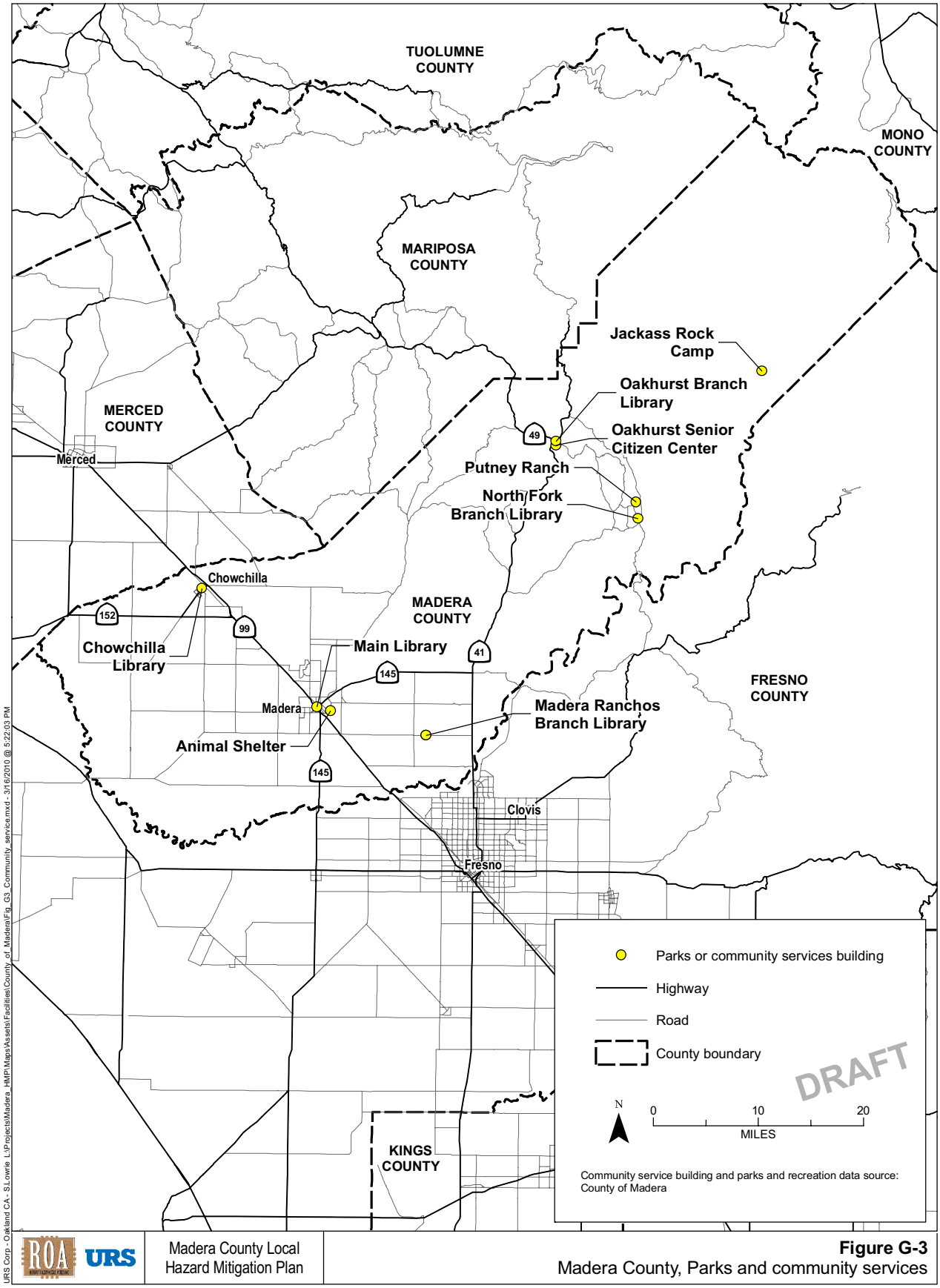
Madera County Local Hazard Mitigation Plan

Figure G-2
Madera County, estimated 2009 residential buildings for the unincorporated area



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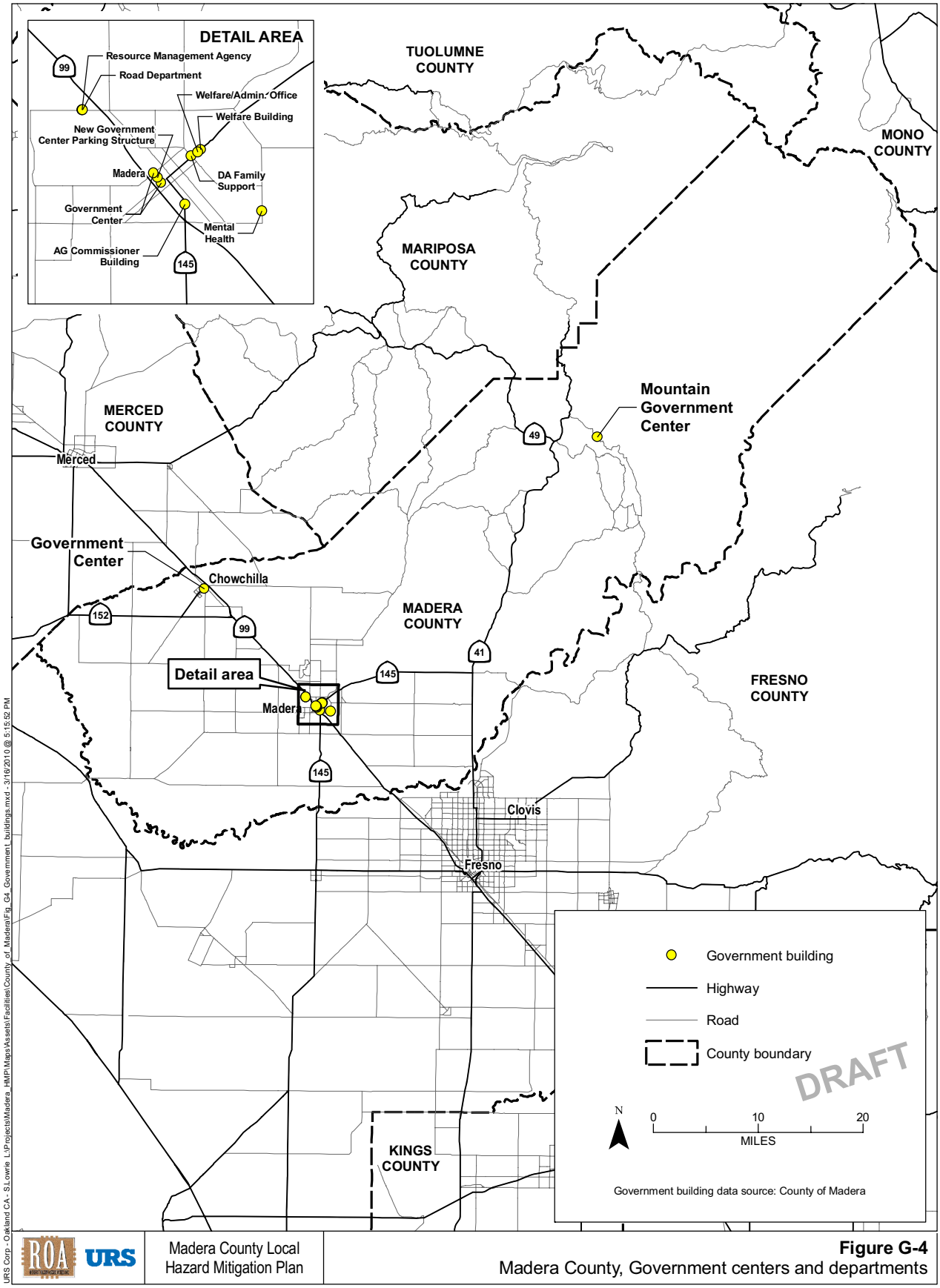
Madera County Local Hazard Mitigation Plan

Figure G-3
Madera County, Parks and community services



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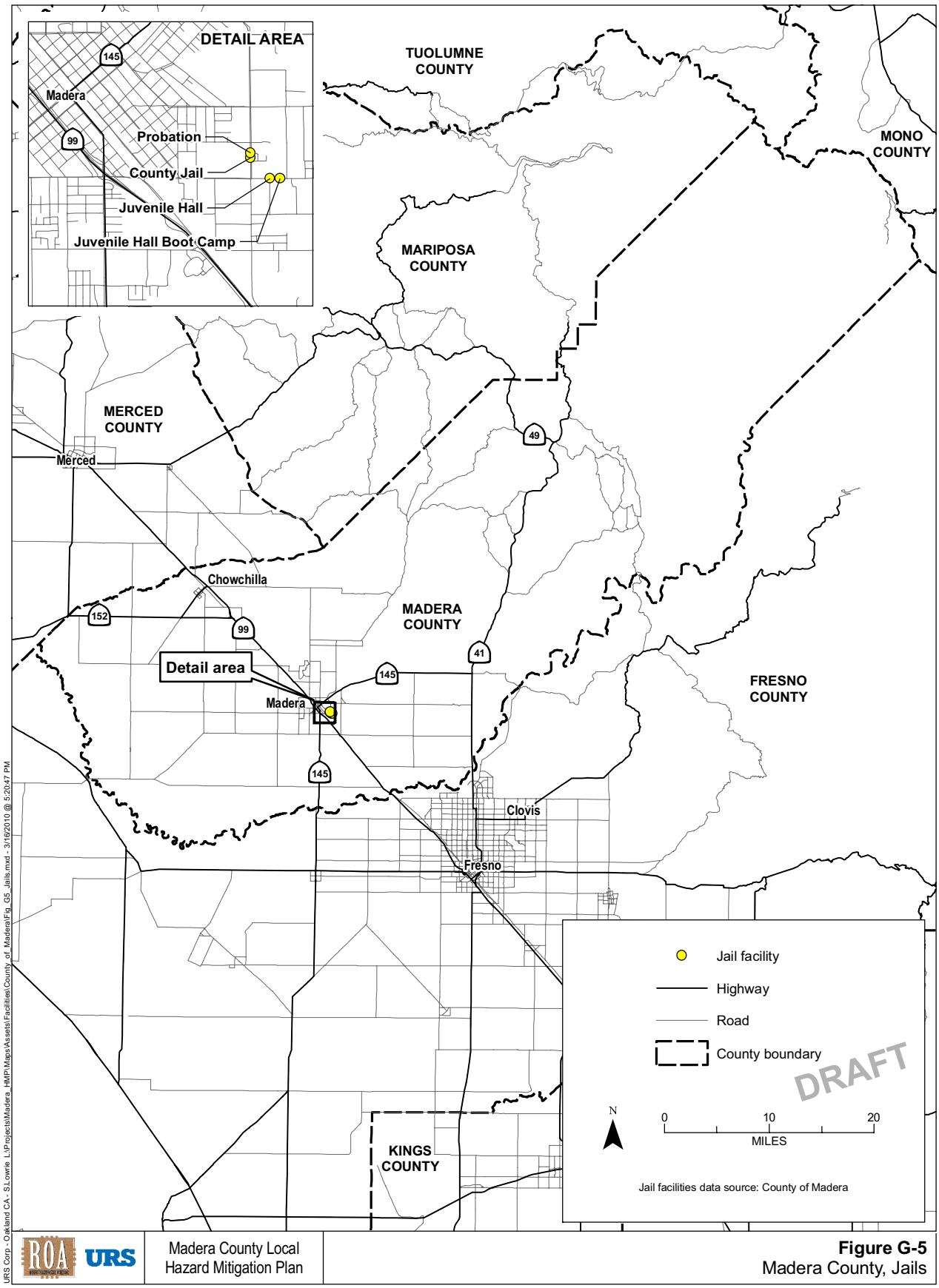
ROA URS

Madera County Local Hazard Mitigation Plan

Figure G-4
Madera County, Government centers and departments



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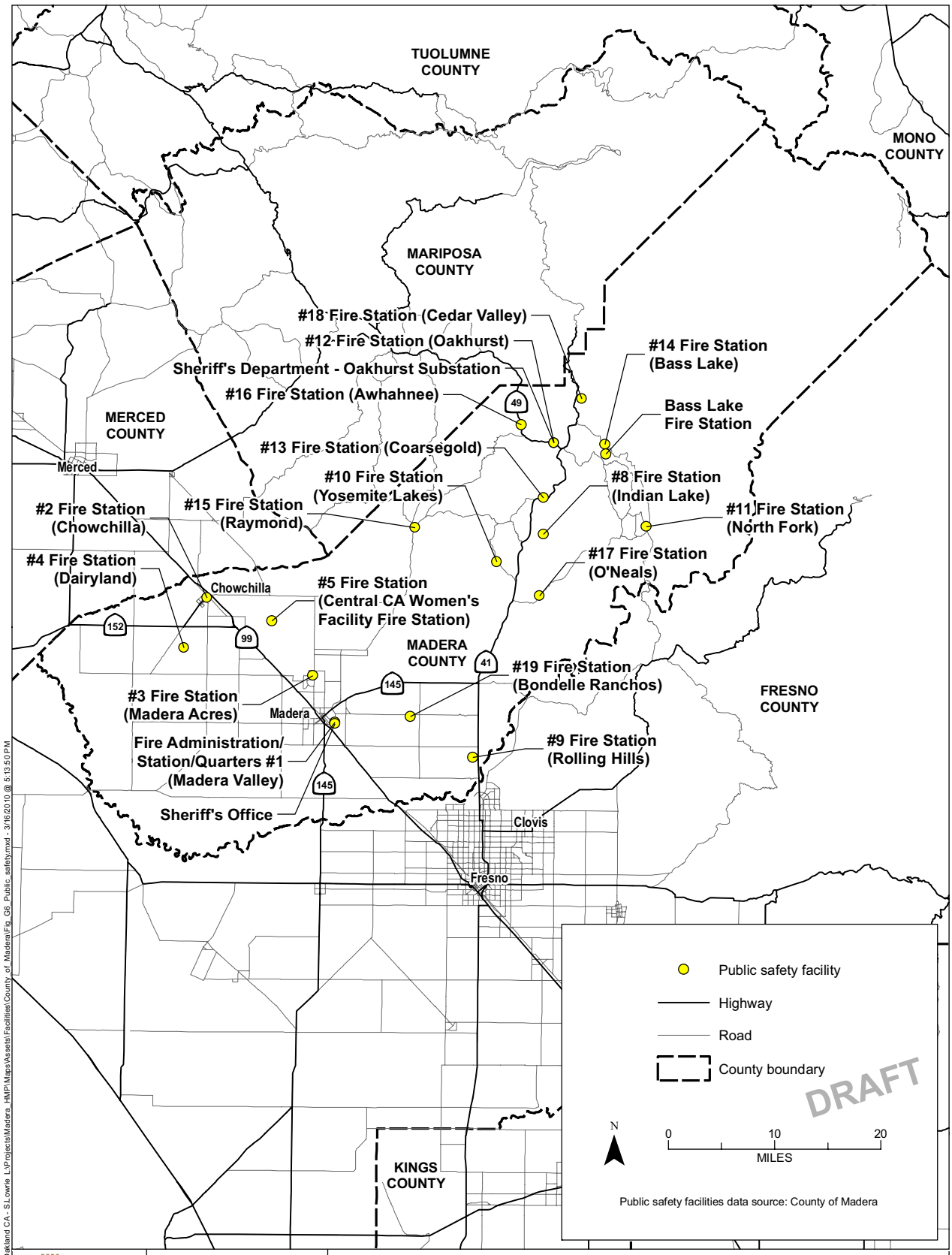
Madera County Local Hazard Mitigation Plan

Figure G-5
Madera County, Jails



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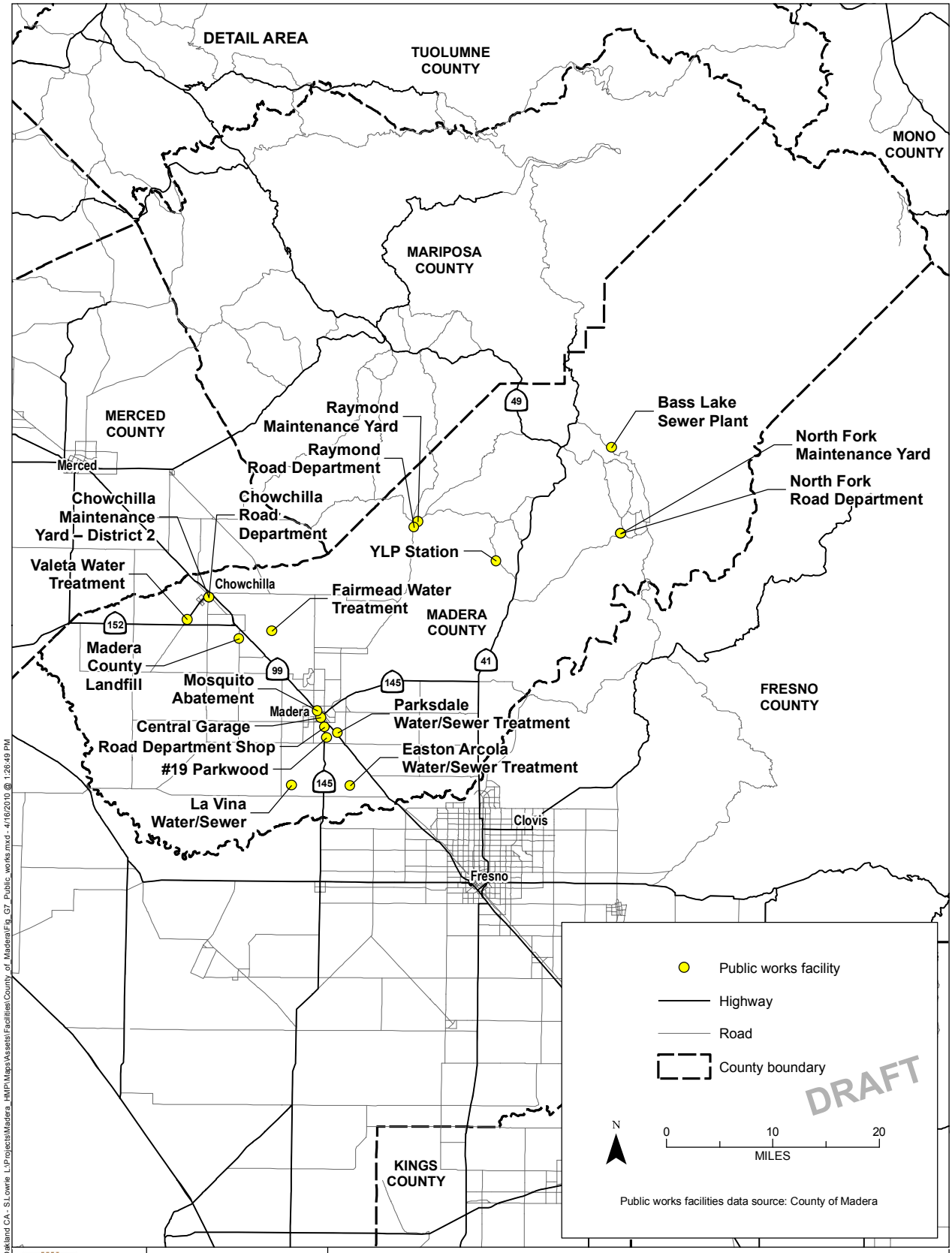
Madera County Local Hazard Mitigation Plan

Figure G-6
Madera County, Public safety



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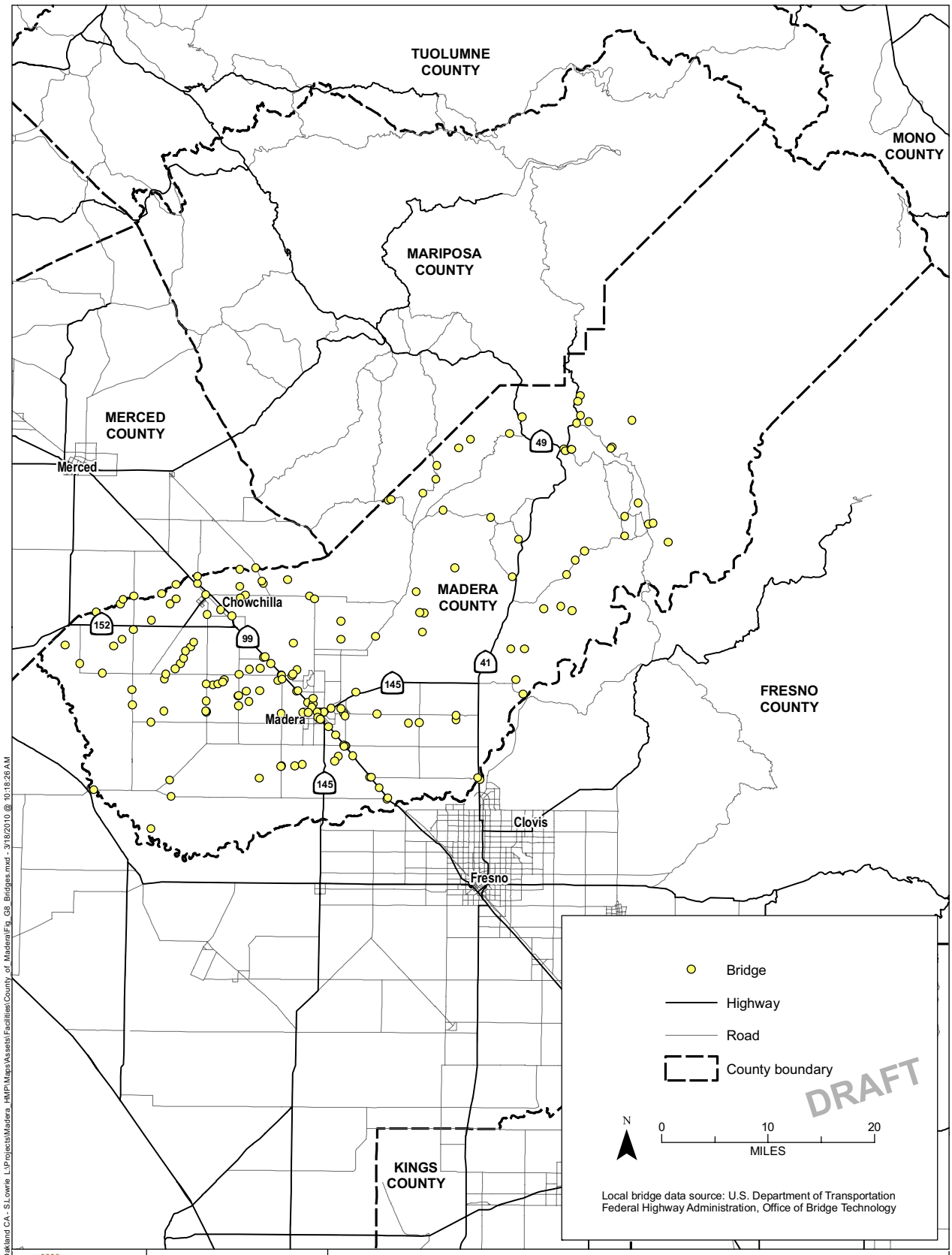
Madera County Local Hazard Mitigation Plan

Figure G-7
Madera County, Public works



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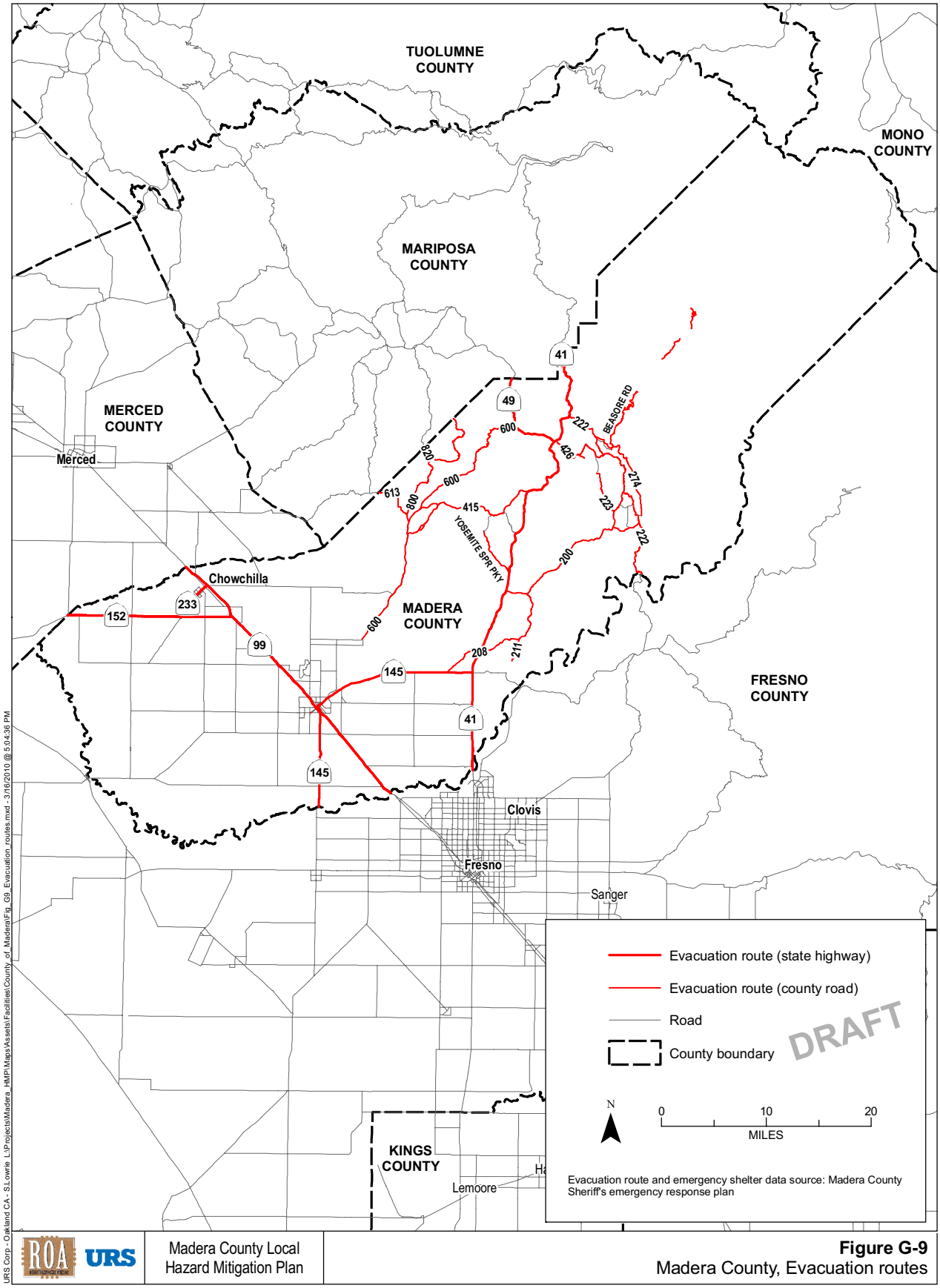
Madera County Local Hazard Mitigation Plan

Figure G-8
Madera County, County-maintained bridges



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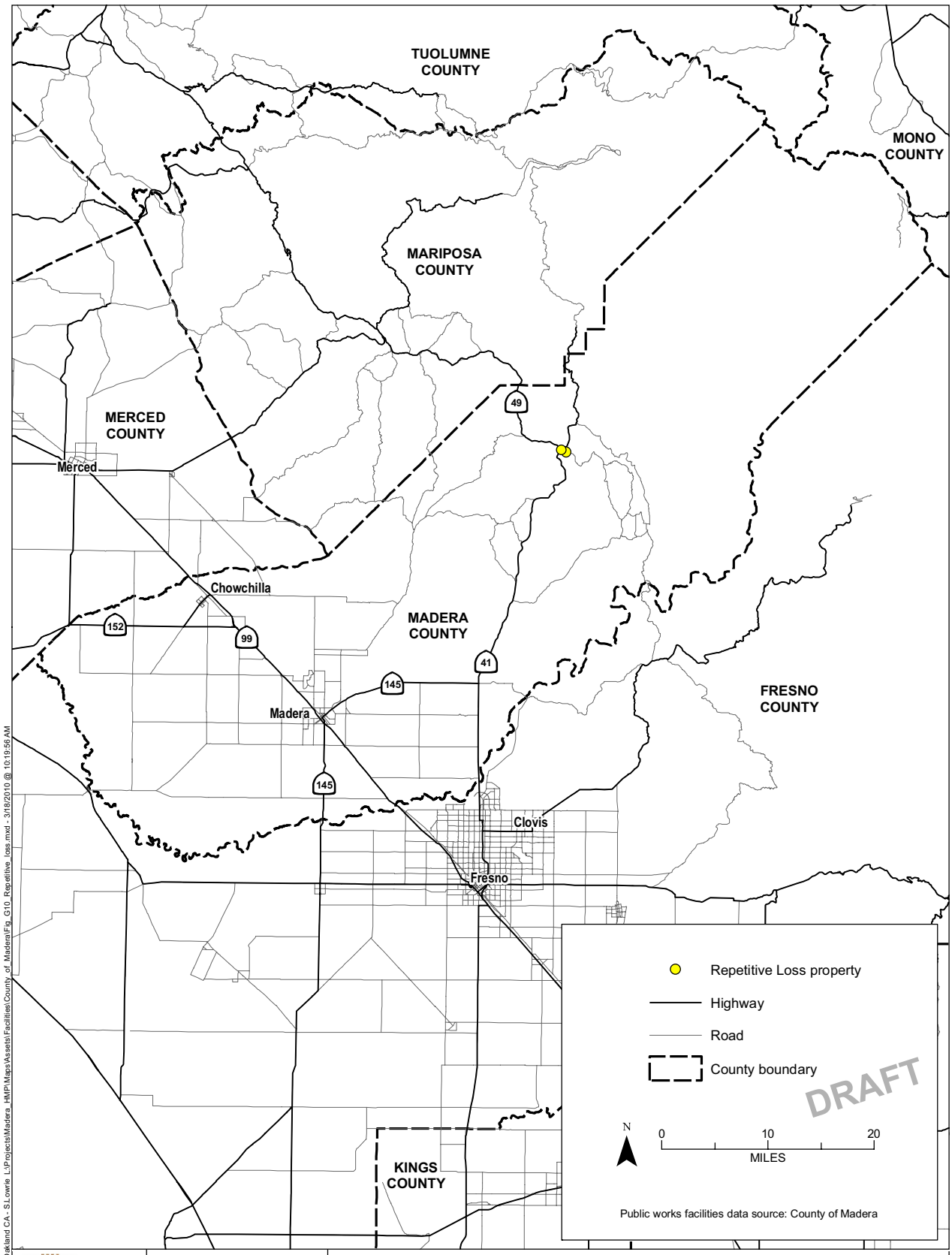
Madera County Local Hazard Mitigation Plan

Figure G-9
Madera County, Evacuation routes



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Madera County Local Hazard Mitigation Plan

Figure G-10
Madera County, Repetitive Loss properties

Table G-1. Madera County, Total Population, Residential Buildings, and Facility Assets

Type	Facility	Address	City	Structural Value ($)
Community Services and Parks	Animal Shelter	14269 Road 28	Madera	354,905
Community Services and Parks	Chowchilla Branch Library	300 King Street	Chowchilla	1,334,385
Community Services and Parks	County Library	121 North G. Street	Madera	3,441,505
Community Services and Parks	Oakhurst Senior Citizen Center	49111 Cinder Lane	Oakhurst	589,645
Community Services and Parks	Madera Ranchos Branch Library	37167 Ave. 12	Madera	1,181,004
Community Services and Parks	North Fork Branch Library	32908 Road 222	North Fork	Unknown
Community Services and Parks	Oakhurst Branch Library	49044 Civic Circle Drive	Oakhurst	Unknown
Community Services and Parks	Jackass Rock Camp	Not Available	North Fork	1,740,980
Community Services and Parks	Putney Ranch	56887 Shinn Cabin Lane	North Fork	859,743
Government Centers and Departments	AG Commissioner Bldg.	128 Highway 145	Madera	692,061
Government Centers and Departments	DA Family Support	120 N. Lake Street	Madera	756,715
Government Centers and Departments	Government Center	209 West Yosemite Ave	Madera	6,933,689
Government Centers and Departments	Government Center	200 W. 4th St.	Madera	30,387,926
Government Centers and Departments	Government Center	122 Trinity Rd.	Chowchilla	103,881
Government Centers and Departments	Mental Health	14227 Road 28	Madera	679,266
Government Centers and Departments	Mountain Government Center	40601 Rd. 274	Bass Lake	847,452
Government Centers and Departments	New Government Center Parking Structure	200 N. G St	Madera	6,016,531
Government Centers and Departments	Resource Management Agency	2037 W. Cleveland Ave.	Madera	4,532,952
Government Centers and Departments	Welfare Building	720 E. Yosemite Ave.	Madera	2,208,842
Government Centers and Departments	Welfare/Admin. Office	700 E. Yosemite Ave.	Madera	897,431
Government Centers and Departments	Road Department	2037 West Cleveland Ave.	Madera	Unknown
Jail	County Jail	14191 Road 28	Madera	29,899,901

Table G-1. Madera County, Total Population, Residential Buildings, and Facility Assets

Type	Facility	Address	City	Structural Value ($)
Jail	Juvenile Hall	28219 Ave 14	Madera	10,480,231
Jail	Juvenile Hall Boot Camp	28261 Avenue 14	Madera	2,917,330
Jail	Probation	14241 Road 28	Madera	655,794
Public Safety	#1 Station (Madera Valley)	14225 Road 28	Madera	719,287
Public Safety	#10 Fire Station (Yosemite Lakes)	29453 Glacier Drive	Coarsegold	62,382
Public Safety	#11 Fire Station (North Fork)	32908 Rd. 222	North Fork	798,529
Public Safety	#12 Fire Station (Oakhurst)	48355 Liberty Drive	Oakhurst	Unknown
Public Safety	#13 Fire Station (Coarsegold)	35600 Highway 41	Coarsegold	28,038
Public Safety	#14 Fire Station (Bass Lake)	40601 Rd. 274	Bass Lake	219,274
Public Safety	#15 Fire Station (Raymond)	32604 Road 600	Raymond	296,698
Public Safety	#16 Fire Station (Awhahnee)	42300 Highway 49	Ahwahnee	28,038
Public Safety	#17 Fire Station (O'Neals)	47200 Road 201	Oneals	28,038
Public Safety	#18 Fire Station (Cedar Valley)	44907 Lakehurst Drive	Oakhurst	Unknown
Public Safety	#19 Fire Station (Bonadelle Ranchos)	35144 Bonadelle	Madera	145,509
Public Safety	#2 Fire Station (Chowchilla)	112 Trinity Street	Chowchilla	Unknown
Public Safety	#3 Fire Station (Madera Acres)	25900 Ave. 18 ½	Madera	60,012
Public Safety	#4 Fire Station (Dairyland)	13802 Avenue 21	Chowchilla	Unknown
Public Safety	#5 Fire Station (Central CA Women's Facility Fire Station)	23320 Road 22	Chowchilla	Unknown
Public Safety	#8 Fire Station (Indian Lake)	47050 Road 417	Coarsegold	Unknown
Public Safety	#9 Fire Station (Rolling Hills)	41016 Avenue 11	Madera	Unknown
Public Safety	Sheriff's Department - Oakhurst Substation	48267 Liberty Drive	Oakhurst	Unknown

Table G-1. Madera County, Total Population, Residential Buildings, and Facility Assets

Type	Facility	Address	City	Structural Value ($)
Public Safety	Sheriff's Headquarters	14143 Road 28	Madera	1,128,932
Public Works	#19 Parkwood	Watt St. & Georgia Ave.	Madera	1,188,916
Public Works	Central Garage	221 South H. Street	Madera	308,116
Public Works	Easton Arcola Water/Sewer Treatment	Rd. 29 1/2 and Avenue 8	Madera	260,003
Public Works	Fairmead Water Treatment	Hwy. 99 & Ave. 22 1/2	Madera	827,908
Public Works	La Vina Water/Sewer	Ave. 8 and Rd. 24	Madera	1,323,335
Public Works	Parksdale Water and Sewer Treatment	Rd. 28 & Ave. 13	Madera	2,902,807
Public Works	Road Department Shop	201 Almond Ave	Madera	1,796,544
Public Works	Valeta Water Treatment	Robertson Blvd. at Ave. 23	Madera	413,214
Public Works	Mosquito Abatement	900 N. Gateway Dr.	Madera	Unknown
Public Works	Madera County Landfill	21739 Road 19	Chowchilla	Unknown
Public Works	Chowchilla Maintenance Yard District 2	11 Alameda Ave.	Chowchilla	Unknown
Public Works	Chowchilla Road Department	11 Alameda Ave.	Chowchilla	Unknown
Public Works	North Fork Maintenance Yard	32040 Road 221/200	North Fork	Unknown
Public Works	North Ford Road Department	32040 Rd. 221	North Fork	Unknown
Public Works	Raymond Road Department	32384 Rd. 600	Raymond	Unknown
Public Works	Raymond Maintenance Yard	32824 Road 600	Raymond	Unknown
Public Works	Bass Lake Sewer Plant	40601 Rd. 274	Bass Lake	Unknown
Population*	82,346			
Residential Buildings*	30,539			

* Population and residential buildings in the unincorporated area of Madera County.

Table G-2. Madera County, Total County-Maintained Bridges, Evacuation Routes, and RL Properties

Type	No.	Name/Location
County-Maintained Bridges	171	Not available.
Evacuation Routes	18 CR, 6 SR	Beasore Road; CR 222; CR 415; CR 426; CR 620; CR 632; CR 600; CR 606; CR 613; CR 426; CR 800; CR 200; CR 208; CR 211; CR 221; CR 223; CR 274; SR 41; SR 49; SR 99; SR 145; SR 152; and SR 233
RL Property (residential, single family)	2	Oakhurst

CR = County Road, SR = State Route

Table G-3. Madera County, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Community Services and Parks	Animal Shelter	354,905	Light
Community Services and Parks	Chowchilla Branch Library	1,334,385	Light
Community Services and Parks	County Library	3,441,505	Light
Community Services and Parks	Oakhurst Senior Citizen Center	589,645	Light
Community Services and Parks	Madera Ranchos Branch Library	1,181,004	Light
Community Services and Parks	North Fork Branch Library	Unknown	Light
Community Services and Parks	Oakhurst Branch Library	Unknown	Light
Community Services and Parks	Jackass Rock Camp	1,740,980	Light
Community Services and Parks	Putney Ranch	859,743	Light
Government Centers and Departments	AG Commissioner Bldg.	692,061	Light
Government Centers and Departments	DA Family Support	756,715	Light
Government Centers and Departments	Government Center	103,881	Light
Government Centers and Departments	Government Center	6,933,689	Light
Government Centers and Departments	Government Center	30,387,926	Light
Government Centers and Departments	Mental Health	679,266	Light
Government Centers and Departments	Mountain Government Center	847,452	Light

Table G-3. Madera County, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Government Centers and Departments	New Government Center Parking Structure	6,016,531	Light
Government Centers and Departments	Resource Management Agency	4,532,952	Light
Government Centers and Departments	Welfare Building	2,208,842	Light
Government Centers and Departments	Welfare/Admin. Office	897,431	Light
Government Centers and Departments	Road Department	Unknown	Light
Jail	County Jail	29,899,901	Light
Jail	Juvenile Hall	10,480,231	Light
Jail	Juvenile Hall Boot Camp	2,917,330	Light
Jail	Probation	655,794	Light
Public Safety	#1 Station (Madera Valley)	719,287	Light
Public Safety	#10 Fire Station (Yosemite Lakes)	62,382	Light
Public Safety	#11 Fire Station (North Fork)	798,529	Light
Public Safety	#12 Fire Station (Oakhurst)	Unknown	Light
Public Safety	#13 Fire Station (Coarsegold)	28,038	Light
Public Safety	#15 Fire Station (Raymond)	296,698	Light
Public Safety	#16 Fire Station (Awhahnee)	28,038	Light
Public Safety	#17 Fire Station (O'Neals)	28,038	Light
Public Safety	#18 Fire Station (Cedar Valley)	Unknown	Light
Public Safety	#19 Fire Station (Bondelle Ranchos)	145,509	Light
Public Safety	#2 Fire Station (Chowchilla)	Unknown	Light

Table G-3. Madera County, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Public Safety	#3 Fire Station (Madera Acres)	60,012	Light
Public Safety	#4 Fire Station (Dairyland)	Unknown	Light
Public Safety	#5 Fire Station (Central CA Women's Facility Fire Station)	Unknown	Light
Public Safety	#8 Fire Station (Indian Lake)	Unknown	Light
Public Safety	#9 Fire Station (Rolling Hills)	Unknown	Light
Public Safety	Sheriff's Department - Oakhurst Substation	Unknown	Light
Public Safety	Sheriff's Headquarters	1,128,932	Light
Public Works	#19 Parkwood	1,188,916	Light
Public Works	Central Garage	308,116	Light
Public Works	Easton Arcola Water/Sewer Treatment	260,003	Light
Public Works	Fairmead Water Treatment	827,908	Light
Public Works	La Vina Water/Sewer	1,323,335	Light
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Light
Public Works	Road Department Shop	1,796,544	Light
Public Works	Valeta Water Treatment	413,214	Light
Public Works	Mosquito Abatement	Unknown	Light
Public Works	Madera County Landfill	Unknown	Light
Public Works	Chowchilla Maintenance Yard District 2	Unknown	Light
Public Works	Chowchilla Road Department	Unknown	Light
Public Works	North Fork Maintenance Yard	Unknown	Light

Table G-3. Madera County, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Public Works	North Ford Road Department	Unknown	Light
Public Works	Raymond Road Department	Unknown	Light
Public Works	Raymond Maintenance Yard	Unknown	Light
Public Works	Bass Lake Sewer Plant	Unknown	Light
Population*	82,346		
Residential Buildings*	30,539		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-4. Madera County, Flood Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Special Flood Hazard Area
Community Services and Parks	Animal Shelter	354,905	500-Year Floodplain
Government Centers and Departments	DA Family Support	756,715	500-Year Floodplain
Government Centers and Departments	Mental Health	679,266	500-Year Floodplain
Government Centers and Departments	Welfare Building	2,208,842	500-Year Floodplain
Government Centers and Departments	Welfare/Admin. Office	897,431	500-Year Floodplain
Jail	County Jail	29,899,901	500-Year Floodplain
Jail	Juvenile Hall	10,480,231	500-Year Floodplain
Jail	Juvenile Hall Boot Camp	2,917,330	500-Year Floodplain
Jail	Probation	655,794	500-Year Floodplain
Public Safety	Fire Administration/Station/Quarters #1 (Madera Valley)	719,287	500-Year Floodplain
Public Safety	Sheriff's Office	1,128,932	500-Year Floodplain
Public Safety	Fire Station #4 (Dairyland)	Unknown	100-Year Floodplain
Public Works	Parksdale Water and Sewer Treatment	2,902,807	100-Year Floodplain
Public Works	#19 Parkwood	1,188,916	100-Year Floodplain
Population*	2,208 (500-Year Floodplain), 12,424 (100-Year Floodplain)		
Residential Buildings*	877 (500-Year Floodplain), 3,366 (100-Year Floodplain)		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-5. Madera County, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation < 656 ft.)
Community Services and Parks	Animal Shelter	354,905	Yes
Community Services and Parks	Chowchilla Branch Library	1,334,385	Yes
Community Services and Parks	County Library	3,441,505	Yes
Community Services and Parks	Madera Ranchos Branch Library	1,181,004	Yes
Government Centers and Departments	AG Commissioner Bldg.	692,061	Yes
Government Centers and Departments	DA Family Support	756,715	Yes
Government Centers and Departments	Government Center	103,881	Yes
Government Centers and Departments	Government Center	6,933,689	Yes
Government Centers and Departments	Government Center	6,933,689	Yes
Government Centers and Departments	Government Center	30,387,926	Yes
Government Centers and Departments	New Government Center Parking Structure	6,016,531	Yes
Government Centers and Departments	Resource Management Agency	4,532,952	Yes
Government Centers and Departments	Welfare Building	2,208,842	Yes
Government Centers and Departments	Welfare/Admin. Office	897,431	Yes
Jail	County Jail	29,899,901	Yes

Table G-5. Madera County, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation < 656 ft.)
Jail	Juvenile Hall	10,480,231	Yes
Jail	Juvenile Hall Boot Camp	2,917,330	Yes
Jail	Probation	655,794	Yes
Public Safety	#19 Fire Station (Bondelle Ranchos)	145,509	Yes
Public Safety	#2 Fire Station (Chowchilla)	Unknown	Yes
Public Safety	#3 Fire Station (Madera Acres)	60,012	Yes
Public Safety	#4 Fire Station (Dairyland)	Unknown	Yes
Public Safety	#5 Fire Station (Central CA Women's Facility Fire Station)	Unknown	Yes
Public Safety	#9 Fire Station (Rolling Hills)	Unknown	Yes
Public Safety	Fire Administration/Station/Quarters #1 (Madera Valley)	719,287	Yes
Public Safety	Sheriff's Office	1,128,932	Yes
Public Works	#19 Parkwood	1,188,916	Yes
Public Works	Central Garage	308,116	Yes
Public Works	Easton Arcola Water/Sewer Treatment	260,003	Yes
Public Works	Fairmead Water Treatment	827,908	Yes
Public Works	La Vina Water/Sewer	1,323,335	Yes
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Yes
Public Works	Road Department	Unknown	Yes
Public Works	Road Department Shop	1,796,544	Yes
Public Works	Valeta Water Treatment	413,214	Yes

Table G-5. Madera County, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation < 656 ft.)
Public Works	Mosquito Abatement	Unknown	Yes
Public Works	Madera County Landfill	Unknown	Yes
Public Works	Chowchilla Maintenance Yard û District 2	Unknown	Yes
Public Works	Chowchilla Road Department	Unknown	Yes
Population*	53,339		
Residential Buildings*	15,619		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-6. Madera County, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts > 50 MPH, Annual Mean Occurrence (days)
Community Services and Parks	Animal Shelter	354,905	19.5 - 30.4
Community Services and Parks	County Library	3,441,505	19.5 - 30.4
Community Services and Parks	Madera Ranchos Branch Library	1,181,004	19.5 - 30.4
Government Centers and Departments	AG Commissioner Bldg.	692,061	19.5 - 30.4
Government Centers and Departments	DA Family Support	756,715	19.5 - 30.4
Government Centers and Departments	Government Center	6,933,689	19.5 - 30.4
Government Centers and Departments	Government Center	30,387,926	19.5 - 30.4
Government Centers and Departments	Mental Health	679,266	19.5 - 30.4
Government Centers and Departments	New Government Center Parking Structure	6,016,531	19.5 - 30.4
Government Centers and Departments	Resource Management Agency	4,532,952	19.5 - 30.4
Government Centers and Departments	Road Department	Unknown	19.5 - 30.4
Government Centers and Departments	Welfare Building	2,208,842	19.5 - 30.4
Government Centers and Departments	Welfare/Admin. Office	897,431	19.5 - 30.4
Jail	County Jail	29,899,901	19.5 - 30.4

Table G-6. Madera County, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts > 50 MPH, Annual Mean Occurrence (days)
Jail	Juvenile Hall	10,480,231	19.5 - 30.4
Jail	Juvenile Hall Boot Camp	2,917,330	19.5 - 30.4
Jail	Probation	655,794	19.5 - 30.4
Public Safety	#19 Fire Station (Bondelle Ranchos)	145,509	19.5 - 30.4
Public Safety	#3 Fire Station (Madera Acres)	60,012	19.5 - 30.4
Public Safety	#9 Fire Station (Rolling Hills)	Unknown	19.5 - 30.4
Public Safety	Fire Administration/Station/Quarters #1 (Madera Valley)	719,287	19.5 - 30.4
Public Safety	Sheriff's Office	1,128,932	19.5 - 30.4
Public Works	#19 Parkwood	1,188,916	19.5 - 30.4
Public Works	Central Garage	308,116	19.5 - 30.4
Public Works	Easton Arcola Water/Sewer Treatment	260,003	19.5 - 30.4
Public Works	La Vina Water/Sewer	1,323,335	19.5 - 30.4
Public Works	Parksdale Water and Sewer Treatment	2,902,807	19.5 - 30.4
Public Works	Road Department Shop	1,796,544	19.5 - 30.4
Public Works	Mosquito Abatement	Unknown	19.5 – 30.4
Community Services and Parks	Chowchilla Branch Library	1,334,385	30.5 - 40.4
Community Services and Parks	Jackass Rock Camp	1,740,980	30.5 - 40.4
Community Services and Parks	North Fork Branch Library	Unknown	30.5 - 40.4
Community Services and Parks	Oakhurst Branch Library	Unknown	30.5 - 40.4
Community Services and Parks	Oakhurst Senior Citizen Center	589,645	30.5 - 40.4

Table G-6. Madera County, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts > 50 MPH, Annual Mean Occurrence (days)
Community Services and Parks	Putney Ranch	859,743	30.5 - 40.4
Government Centers and Departments	Government Center	103,881	30.5 - 40.4
Government Centers and Departments	Mountain Government Center	847,452	30.5 - 40.4
Public Safety	#10 Fire Station (Yosemite Lakes)	62,382	30.5 - 40.4
Public Safety	#11 Fire Station (North Fork)	798,529	30.5 - 40.4
Public Safety	#12 Fire Station (Oakhurst)	Unknown	30.5 - 40.4
Public Safety	#13 Fire Station (Coarsegold)	28,038	30.5 - 40.4
Public Safety	#14 Fire Station (Bass Lake)	219,274	30.5 - 40.4
Public Safety	#15 Fire Station (Raymond)	296,698	30.5 - 40.4
Public Safety	#16 Fire Station (Awhahnee)	28,038	30.5 - 40.4
Public Safety	#17 Fire Station (O'Neals)	28,038	30.5 - 40.4
Public Safety	#18 Fire Station (Cedar Valley)	Unknown	30.5 - 40.4
Public Safety	#2 Fire Station (Chowchilla)	Unknown	30.5 - 40.4
Public Safety	#4 Fire Station (Dairyland)	Unknown	30.5 - 40.4
Public Safety	#5 Fire Station (Central CA Women's Facility Fire Station)	Unknown	30.5 - 40.4
Public Safety	#8 Fire Station (Indian Lake)	Unknown	30.5 - 40.4
Public Safety	Sheriff's Department - Oakhurst Substation	Unknown	30.5 - 40.4
Public Works	Fairmead Water Treatment	827,908	30.5 - 40.4

Table G-6. Madera County, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts > 50 MPH, Annual Mean Occurrence (days)
Public Works	Valeta Water Treatment	413,214	30.5 - 40.4
Public Works	Madera County Landfill	Unknown	30.5 – 40.4
Public Works	Chowchilla Maintenance Yard û District 2	Unknown	30.5 – 40.4
Public Works	Chowchilla Road Department	Unknown	30.5 – 40.4
Public Works	North Fork Maintenance Yard	Unknown	30.5 – 40.4
Public Works	North Ford Road Department	Unknown	30.5 – 40.4
Public Works	Raymond Road Department	Unknown	30.5 – 40.4
Public Works	Raymond Maintenance Yard	Unknown	30.5 – 40.4
Public Works	Bass Lake Sewer Plant	Unknown	30.5 – 40.4
Population*	37,725 (19.5-30.4), 44,612 (30.5-40.5), 9 (40.5-50)		
Residential Buildings*	12,662 (19.5-30.4), 17,853 (30.5-40.5)		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-7. Madera County, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Community Services and Parks	Animal Shelter	354,905	Low: 0.00-23.99
Community Services and Parks	Chowchilla Branch Library	1,334,385	Low: 0.00-23.99
Community Services and Parks	County Library	3,441,505	Low: 0.00-23.99
Community Services and Parks	Madera Ranchos Branch Library	1,181,004	Low: 0.00-23.99
Community Services and Parks	North Fork Branch Library	Unknown	Low: 0.00-23.99
Community Services and Parks	Putney Ranch	859,743	Low: 0.00-23.99
Government Centers and Departments	AG Commissioner Bldg.	692,061	Low: 0.00-23.99
Government Centers and Departments	DA Family Support	756,715	Low: 0.00-23.99
Government Centers and Departments	Government Center	103,881	Low: 0.00-23.99
Government Centers and Departments	Government Center	6,933,689	Low: 0.00-23.99
Government Centers and Departments	Government Center	30,387,926	Low: 0.00-23.99
Government Centers and Departments	Mental Health	679,266	Low: 0.00-23.99
Government Centers and Departments	New Government Center Parking Structure	6,016,531	Low: 0.00-23.99
Government Centers and Departments	Resource Management Agency	4,532,952	Low: 0.00-23.99
Government Centers and Departments	Welfare Building	2,208,842	Low: 0.00-23.99
Government Centers and	Welfare/Admin. Office	897,431	Low: 0.00-23.99

Table G-7. Madera County, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Departments			
Jail	County Jail	29,899,901	Low: 0.00-23.99
Jail	Juvenile Hall	10,480,231	Low: 0.00-23.99
Jail	Juvenile Hall Boot Camp	2,917,330	Low: 0.00-23.99
Jail	Probation	655,794	Low: 0.00-23.99
Public Safety	#10 Fire Station (Yosemite Lakes)	62,382	Low: 0.00-23.99
Public Safety	#11 Fire Station (North Fork)	798,529	Low: 0.00-23.99
Public Safety	#13 Fire Station (Coarsegold)	28,038	Low: 0.00-23.99
Public Safety	#15 Fire Station (Raymond)	296,698	Low: 0.00-23.99
Public Safety	#16 Fire Station (Awhahnee)	28,038	Low: 0.00-23.99
Public Safety	#17 Fire Station (O'Neals)	28,038	Low: 0.00-23.99
Public Safety	#19 Fire Station (Bondelle Ranchos)	145,509	Low: 0.00-23.99
Public Safety	#2 Fire Station (Chowchilla)	Unknown	Low: 0.00-23.99
Public Safety	#3 Fire Station (Madera Acres)	60,012	Low: 0.00-23.99
Public Safety	#4 Fire Station (Dairyland)	Unknown	Low: 0.00-23.99
Public Safety	#5 Fire Station (Central CA Women's Facility Fire Station)	Unknown	Low: 0.00-23.99
Public Safety	#8 Fire Station (Indian Lake)	Unknown	Low: 0.00-23.99
Public Safety	#9 Fire Station (Rolling Hills)	Unknown	Low: 0.00-23.99
Public Safety	Fire Administration/Station/Quarters #1 (Madera Valley)	719,287	Low: 0.00-23.99
Public Safety	Sheriff's Office	1,128,932	Low: 0.00-23.99
Public Works	#19 Parkwood	1,188,916	Low: 0.00-23.99

Table G-7. Madera County, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Public Works	Central Garage	308,116	Low: 0.00-23.99
Public Works	Easton Arcola Water/Sewer Treatment	260,003	Low: 0.00-23.99
Public Works	Fairmead Water Treatment	827,908	Low: 0.00-23.99
Public Works	La Vina Water/Sewer	1,323,335	Low: 0.00-23.99
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Low: 0.00-23.99
Public Works	Road Department	Unknown	Low: 0.00-23.99
Public Works	Road Department Shop	1,796,544	Low: 0.00-23.99
Public Works	Valeta Water Treatment	413,214	Low: 0.00-23.99
Public Works	Mosquito Abatement	Unknown	Low: 0.00-23.99
Public Works	Madera County Landfill	Unknown	Low: 0.00-23.99
Public Works	Chowchilla Maintenance Yard û District 2	Unknown	Low: 0.00-23.99
Public Works	Chowchilla Road Department	Unknown	Low: 0.00-23.99
Public Works	North Fork Maintenance Yard	Unknown	Low: 0.00-23.99
Public Works	North Ford Road Department	Unknown	Low: 0.00-23.99
Public Works	Raymond Road Department	Unknown	Low: 0.00-23.99
Public Works	Raymond Maintenance Yard	Unknown	Low: 0.00-23.99
Community Services and Parks	Oakhurst Branch Library	Unknown	Medium: 24.00-47.99
Community Services and Parks	Oakhurst Senior Citizen Center	589,645	Medium: 24.00-47.99
Government Centers and Departments	Mountain Government Center	847,452	Medium: 24.00-47.99
Public Safety	#12 Fire Station (Oakhurst)	Unknown	Medium: 24.00-47.99

Table G-7. Madera County, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Public Safety	#14 Fire Station (Bass Lake)	219,274	Medium: 24.00-47.99
Public Safety	Sheriff's Department - Oakhurst Substation	Unknown	Medium: 24.00-47.99
Public Safety	Bass Lake Sewer Plant	Unknown	Medium: 24.00-47.99
Community Services and Parks	Jackass Rock Camp	1,740,980	High: 48.00-72.00
Public Safety	#18 Fire Station (Cedar Valley)	Unknown	High: 48.00-72.00
Population	71,834 (Low: 00.00-23.99); 9,437 (Medium: 24.00-47.99), 1,078 (High: 48.00-72.00)		
Residential Buildings	24,141 (Low: 00.00-23.99); 5,466 (Medium: 24.00-47.99), 932 (High: 48.00-72.00)		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-8. Madera County, Wildfire Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: LRA Fire Hazard Severity Zone
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Moderate
Community Services and Parks	Jackass Rock Camp	1,740,980	Very High
Public Works	Bass Lake Sewer Plant	Unknown	Very High
Population*	6,629 (Moderate); 717 (High); 2,799 (Very High)		
Residential Buildings*	2,276 (Moderate); 386 (High); 2,124 (Very High)		

LRA = Local Responsibility Area

* Population and residential buildings in the unincorporated area of Madera County.

Table G-9. Madera County, Wildfire Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: SRA Fire Hazard Severity Zone
Community Services and Parks	North Fork Branch Library	Unknown	Moderate
Community Services and Parks	Oakhurst Branch Library	Unknown	Moderate
Community Services and Parks	Oakhurst Senior Citizen Center	589,645	Moderate
Community Services and Parks	Putney Ranch	859,743	Moderate
Public Safety	#10 Fire Station (Yosemite Lakes)	62,382	Moderate
Public Safety	#11 Fire Station (North Fork)	798,529	Moderate
Public Safety	#12 Fire Station (Oakhurst)	Unknown	Moderate
Public Safety	#15 Fire Station (Raymond)	296,698	Moderate
Public Safety	#16 Fire Station (Awhahnee)	28,038	Moderate
Public Safety	#17 Fire Station (O'Neals)	28,038	Moderate
Public Safety	#8 Fire Station (Indian Lake)	Unknown	Moderate
Public Safety	Sheriff's Department - Oakhurst Substation	Unknown	Moderate
Public Works	North Fork Maintenance Yard	Unknown	Moderate
Public Works	North Ford Road Department	Unknown	Moderate
Public Works	Raymond Road Department	Unknown	Moderate
Public Works	Raymond Maintenance Yard	Unknown	Moderate
Public Safety	#13 Fire Station (Coarsegold)	28,038	High

Table G-9. Madera County, Wildfire Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: SRA Fire Hazard Severity Zone
Government Centers and Departments	Mountain Government Center	847,452	Very High
Public Safety	#14 Fire Station (Bass Lake)	219,274	Very High
Public Safety	#18 Fire Station (Cedar Valley)	Unknown	Very High
Population*	19,666 (Moderate); 3,829 (High); 2,196 (Very High)		
Residential Buildings*	8,970 (Moderate); 1,839 (High); 1,610 (Very High)		

SRA = State Responsibility Area

* Population and residential buildings in the unincorporated area of Madera County.

Table G-10. Madera County, Dam Failure Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Community Services and Parks	Chowchilla Branch Library	1,334,385	Buchanan Dam
Government Centers and Departments	Government Center	103,881	Buchanan Dam
Public Safety	#2 Fire Station (Chowchilla)	Unknown	Buchanan Dam
Public Works	Chowchilla Maintenance Yard District 2	Unknown	Buchanan Dam
Public Works	Chowchilla Road Department	Unknown	Buchanan Dam
Public Works	Easton Arcola Water/Sewer Treatment	260,003	Friant Dam
Community Services and Parks	Animal Shelter	354,905	Hidden Dam
Community Services and Parks	County Library	3,441,505	Hidden Dam
Government Centers and Departments	Mental Health	679,266	Hidden Dam
Government Centers and Departments	AG Commissioner Bldg.	692,061	Hidden Dam
Government Centers and Departments	DA Family Support	756,715	Hidden Dam
Government Centers and Departments	Welfare/Admin. Office	897,431	Hidden Dam
Government Centers and Departments	Welfare Building	2,208,842	Hidden Dam
Government Centers and Departments	Resource Management Agency	4,532,952	Hidden Dam
Government Centers and Departments	New Government Center Parking Structure	6,016,531	Hidden Dam

Table G-10. Madera County, Dam Failure Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Government Centers and Departments	Government Center	6,933,689	Hidden Dam
Government Centers and Departments	Government Center	30,387,926	Hidden Dam
Jail	Probation	655,794	Hidden Dam
Jail	Juvenile Hall Boot Camp	2,917,330	Hidden Dam
Jail	Juvenile Hall	10,480,231	Hidden Dam
Jail	County Jail	29,899,901	Hidden Dam
Public Safety	Fire Administration/Station/Quarters #1 (Madera Valley)	719,287	Hidden Dam
Public Safety	Sheriff's Office	1,128,932	Hidden Dam
Public Works	Central Garage	308,116	Hidden Dam
Public Works	#19 Parkwood	1,188,916	Hidden Dam
Public Works	La Vina Water/Sewer	1,323,335	Hidden Dam
Public Works	Road Department Shop	1,796,544	Hidden Dam
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Hidden Dam
Public Works	Road Department	Unknown	Hidden Dam
Public Works	Mosquito Abatement	Unknown	Hidden Dam
Population*	7,438 (Buchanan Dam); 3,018 (Friant Dam); 14,208 (Hidden Dam); 647 (Pine Flat Dam)		
Residential Buildings*	936 (Buchanan Dam); 996 (Friant Dam); 5,043 (Hidden Dam); 221 (Pine Flat Dam)		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-11. Madera County, Levee Break Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Levee Flood Protection Zones (ft.)
Population*	944 (depth unknown); 400 (≥ 3 feet)		
Residential Buildings*	300 (depth unknown); 153 (≥ 3 feet)		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-12. Madera County, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Transportation Corridor (1/4-mile buffer)
Community Services and Parks	Chowchilla Branch Library	1,334,385	Yes
Community Services and Parks	County Library	3,441,505	Yes
Community Services and Parks	Oakhurst Branch Library	Unknown	Yes
Government Centers and Departments	AG Commissioner Bldg.	692,061	Yes
Government Centers and Departments	DA Family Support	756,715	Yes
Government Centers and Departments	Government Center	103,881	Yes
Government Centers and Departments	Government Center	6,933,689	Yes
Government Centers and Departments	Government Center	30,387,926	Yes
Government Centers and Departments	New Government Center Parking Structure	6,016,531	Yes
Government Centers and Departments	Resource Management Agency	4,532,952	Yes
Government Centers and Departments	Welfare Building	2,208,842	Yes
Government Centers and Departments	Welfare/Admin. Office	897,431	Yes
Public Safety	#12 Fire Station (Oakhurst)	Unknown	Yes
Public Safety	#13 Fire Station (Coarsegold)	28,038	Yes
Public Safety	#16 Fire Station (Awhahnee)	28,038	Yes
Public Safety	#2 Fire Station (Chowchilla)	Unknown	Yes

Table G-12. Madera County, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Transportation Corridor (1/4-mile buffer)
Public Safety	#3 Fire Station (Madera Acres)	60,012	Yes
Public Safety	Sheriff's Department - Oakhurst Substation	Unknown	Yes
Public Works	Central Garage	308,116	Yes
Public Works	Parksdale Water and Sewer Treatment	2,902,807	Yes
Public Works	Road Department	Unknown	Yes
Public Works	Road Department Shop	1,796,544	Yes
Public Works	Valeta Water Treatment	413,214	Yes
Public Works	Mosquito Abatement	Unknown	Yes
Public Works	Chowchilla Maintenance Yard District 2	Unknown	Yes
Public works	Chowchilla Road Department	Unknown	Yes
Population*	10,499		
Residential Buildings*	4,771		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-13. Madera County, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Fixed Facilities (1/4-mile buffer)
Government Centers and Departments	AG Commissioner Bldg.	692,061	Yes
Population*	194		
Residential Buildings*	124		

* Population and residential buildings in the unincorporated area of Madera County.

Table G-14. Madera County, Overall Summary of Total Population, Residential Buildings, and Facilities at Risk

Hazard	Hazard Area	Population		Residential Buildings		Facilities	
		No.	%	No.	%	No.	%
Seismic	Light	82,346	100	30,539	100	63	100
Flood	500-year SFHA	2,208	3	877	3	11	17
	100-year SFHA	12,424	15	3,366	11	3	5
Fog	Potential Fog Area, (elevation ≤ 656 feet)	53,339	65	15,619	51	39	62
Severe Wind	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 19.5-30.4	37,725	46	12,662	41	29	46
	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 30.5-40.4	44,612	54	17,853	58	34	54
	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 40.5-50.0	9	<1	22	<1	0	0
Winter Storm	Mean Annual Snowfall (in.): Low (0.00-23.99)	9,437	11	24,141	79	53	84
	Mean Annual Snowfall (in.): Medium (24.00-47.99)	71,834	87	5,466	18	8	13
	Mean Annual Snowfall (in.): High (48.00-72.00)	1,078	1	932	3	2	3

Table G-14. Madera County, Overall Summary of Total Population, Residential Buildings, and Facilities at Risk

Hazard	Hazard Area	Population		Residential Buildings		Facilities	
		No.	%	No.	%	No.	%
Wildfire	LRA: Moderate	6,629	8	2,276	7	1	2
	LRA: High	717	<1	386	1	0	0
	LRA: Very High	2,799	3	2,124	7	3	5
	SRA: Moderate	19,666	24	8,970	29	17	27
	SRA: High	3,829	5	1,839	6	1	2
	SRA: Very High	2,196	3	1,610	5	3	5
Dam Failure	Buchanan Dam	7,438	9	936	3	4	6
	Friant Dam	3,018	4	996	3	1	2
	Hidden Dam	14,208	17	5,043	17	24	38
	Pine Flat Dam	647	<1	221	1	0	0
Levee Break	Depth Unknown	944	1	300	1	0	0
	Levee Flood Protection Zone $\geq$ 3 feet	400	<1	153	1	0	0
Hazardous Material Event	Transportation Corridor	10,499	13	4,771	16	26	41
	Fixed Facility	194	<1	124	<1	1	2

Table G-15. Madera County, Overall Summary of Total County-Maintained Bridges, Evacuation Routes, and RL Properties at Risk

Hazard	Hazard Area	County-Maintained Bridges		Evacuation Routes		RL Properties	
		No.	%	No.	%	No.	%
Seismic	Light	171	100	356	100	N/A	N/A
Flood	500-year SFHA	0	0	0	0	0	0
	100-year SFHA	97	57	19	5	2	0
Fog	Potential Fog Area, (elevation $\leq$ 656 feet)	133	78	162	46	N/A	N/A
Severe Wind	Peak Wind Gusts $\geq$ 50 MPH, Annual Mean Occurrence (days): 19.5-30.4	62	36	102	29	N/A	N/A
	Peak Wind Gusts $\geq$ 50 MPH, Annual Mean Occurrence (days): 30.5-40.4	109	64	252	71	N/A	N/A
	Peak Wind Gusts $\geq$ 50 MPH, Annual Mean Occurrence (days): 40.5-50.0	0	0	2	1	N/A	N/A
Winter Storm	Mean Annual Snowfall (in.): Low (0.00-23.99)	161	94	293	82	N/A	N/A
	Mean Annual Snowfall (in.): Medium (24.00-47.99)	10	6	43	12	N/A	N/A
	Mean Annual Snowfall (in.): High (48.00-72.00)	0	0	20	6	N/A	N/A

Table G-15. Madera County, Overall Summary of Total County-Maintained Bridges, Evacuation Routes, and RL Properties at Risk

Hazard	Hazard Area	County-Maintained Bridges		Evacuation Routes		RL Properties	
		No.	%	No.	%	No.	%
Wildfire	LRA: Moderate	23	13	28	8	N/A	N/A
	LRA: High	1	1	6	2		
	LRA: Very High	3	2	31	9	N/A	N/A
	SRA: Moderate	37	22	147	41	N/A	N/A
	SRA: High	1	1	22	6	N/A	N/A
	SRA: Very High	3	2	13	4	N/A	N/A
Dam Failure	Buchanan Dam	14	8	25	7	N/A	N/A
	Friant Dam	11	6	13	4	N/A	N/A
	Hidden Dam	35	20	25	7	N/A	N/A
	Pine Flat Dam	2	1	0	0	N/A	N/A
Levee Break	Levee Flood Protection Zone $\geq$ 3 feet	3	2	0	0	N/A	N/A
	Depth Unknown	4	2	3	1	N/A	N/A
Hazardous Material Event	Transportation Corridor	44	26	185	52	N/A	N/A
	Fixed Facility	3	2	4	1	N/A	N/A

N/A = Not applicable.

Table G-16. Madera County, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Planner(s), engineer(s) and technical staff with knowledge of land development, land management practices, and human-caused and natural hazards.	Resource Management Agency: Planning Department	The Department functions as the planning agency for the unincorporated area of Madera County, formulating and implementing the general plan and community plans, and coordinating land use considerations in accordance with the zoning ordinance. The department is responsible for processing conditional use permits, zoning permits, land divisions, and other entitlement applications, and for assisting the public in explaining zoning and planning matters. The planning department maintains an enforcement program and issues citations for violations of the land use and construction regulations. The department is also responsible for implementing a variety of programs adopted at the state level, including those dealing with environmental review of projects, agricultural land conservation, surface mining, affordable housing, and others.
Engineer(s), Building Inspectors/Code Enforcement Officers or other professional(s) and technical staff trained in construction requirements and practices related to existing and new buildings	Resource Management Agency: Department of Engineering and General Services/ Building Inspection Division	The primary responsibilities of this division involve the enforcement of current building codes, including life safety issues, and building construction inspection services within the County. The division's duties include processing and issuing permits for grading, demolition, residential and commercial construction, mechanical, plumbing and electrical installations. The division also performs building code enforcement including abatement procedures and notices of violation. Residential and commercial plan checks including engineering and energy calculations are also performed by this division.

Table G-16. Madera County, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Fire prevention inspectors and code enforcement staff.	Resource Management Agency: Department for Fire Prevention for Development (Fire Marshal)	The Madera County Fire Marshal's Office (Department of Fire Prevention for Development) provides plan review and inspection services to all unincorporated areas of Madera County in order to implement the fire and life safety regulations and building standards established and adopted by the State Fire Marshal and County Board of Supervisors. In addition, the department performs fire and life safety clearance inspections in State Licensed facilities and is charged with annual inspections of schools, motel/hotels and apartment buildings as well as regular inspections of public assembly buildings and facilities using or storing acutely hazardous materials. The Fire Marshal also serves as the appointed "County Fire Warden" and is responsible for ensuring that the regulations stipulated in the California Public Resources Code 4290 are applied to new development and structures in the State Responsibility Areas of Madera County.
Project manager(s), technical staff, equipment operators, and maintenance and construction staff.	Resource Management Agency: Road Department	The Madera County Road Department is responsible for the maintenance and construction of roads, culverts and bridges on the County's maintained mileage system excluding State Highways. It also performs maintenance on roads in Maintenance Districts and County Service Areas within the unincorporated areas of the County.
Engineers, technical staff, contracting specialists, and the County's Floodplain Administrator	Department of Engineering and General Services/Flood Control and Water Conservation Agency	This division provides for regular maintenance of certain natural water courses in the County. These responsibilities are delegated through contracts with the State and the Army Corps of Engineers to provide adequate carrying capacity for portions of the Fresno and Chowchilla Rivers, and Ash and Berenda Sloughs. The division also makes recommendations to the Board for various Public Works to prevent or minimize flooding. This division also administers water conservation and development of water recharge projects and the NFIP.

Table G-16. Madera County, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Emergency Services Coordinator	Sheriff's Department/Office of Emergency Services	The Madera County Sheriff's Office of Emergency Services each county serves under California law as an Operational Area. It is responsible for the administration of the County's disaster preparedness and response program. In addition, it is responsible for maintaining the County's Emergency Operations Center (EOC), as well as coordinating EOC activities during a disaster. The office maintains and updates the Emergency Operations Plan, Local Hazard Mitigation Plan (and other contingency) plans for the County.
Professional, technical, and support staff	Resource Management Agency: Department of Environmental Health	Environmental Health consists of those organized activities undertaken to protect and enhance the public's health through the control of potentially harmful materials, organisms, energies, and conditions in the environment.

Table G-17. Madera County, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Local	General Fund	Department-specific	Program operations and specific projects.	Variable.
	General Obligation (GO) Bonds	Administrative Office	GO Bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include, but are not limited to, libraries, hospitals, parks, Public Safety facilities, and cultural and educational facilities.	The Board of Supervisors holds a minimum of two public hearings(?) prior to placing a GO bond measure on the ballot. Prior to any issuance of any new money or refunding general obligation bonds, the Board will approve, by majority vote, a resolution authorizing such issuance. All new money GO bonds issued by the County will be approved by two-thirds of the voters voting in the election. Outstanding general obligation bonded indebtedness cannot exceed 3 percent of the Assessed Valuation of taxable property within County's jurisdictional area.
	Lease Revenue Bonds	Administrative Office	Lease revenue bonds are used to finance capital projects that (1) have an identified budgetary stream for repayment (e.g., specified fees, tax receipts, etc.), (2) generate project revenue but rely on a broader pledge of general fund revenues to reduce borrowing costs, or (3) finance the acquisition and installation of equipment for the County's general governmental purposes.	The Board of Supervisors holds a minimum of one public hearing(?) to place the lease revenue bond measure on the ballot. Subsequent to successful passage and prior to any issuance of new money or refunding lease revenue bonds, the Board will approve, by majority vote, a resolution authorizing such issuance. All new money lease revenue bonds will be approved by 50 percent plus one of the voters voting in the election. No statutory restriction exists on the amount of Lease Revenue Bonds that can be outstanding at any given time.

Table G-17. Madera County, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Local	Certificates of Participation (COPs)	Administrative Office	Used for acquisition of existing facilities and/or construction of new facilities that result, on a present value basis, in immediate or future savings in payments currently made or to be made by the County's general fund. For example, COPs may be used to provide funds to execute a lease purchase option for a facility whereby future savings accrue, on a net present value basis, to the general fund during the period for which the COPs and the obviated lease would be outstanding.	COPs may consist of lease financing agreements between the County and a for-profit lessor. All issuances of COPs shall be authorized by resolution of the Board by majority vote. COPs are not subject to voter approval.
	Public-Private Partnerships	Administrative Office and various County departments.	Includes the use of local professionals, business owners, residents, and civic groups and trade associations, generally for the study of issues and the development of guidance and recommendations.	Project-specific.
State	Bonds	Department of Water Resources	Help rebuild California's aging levee system and protect Californians from dangerous floods that could harm communities, agriculture and water supplies.	$5B in Proposition E1 funding.

Table G-17. Madera County, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Federal	Hazard Mitigation Grant Program (HMGP)	Federal Emergency Management Agency (FEMA)	Supports pre- and post-disaster mitigation plans and projects.	Available to California communities after a Presidentially declared disaster has occurred in California. Grant award based on specific projects as they are identified by eligible applicants.
	Pre-Disaster Mitigation (PDM) grant program	FEMA	Supports pre-disaster mitigation plans and projects.	Available on an annual basis as a nationally competitive grant. Grant award based on specific projects as they are identified (no more than $3M federal share for projects).
	Flood Mitigation Assistance (FMA) grant program	FEMA	Mitigates repetitively flooded structures and infrastructure.	Available on an annual basis, distributed to California communities by the California Emergency Management Agency (Cal EMA). Grant award based on specific projects as they are identified.
	Assistance to Firefighters Grant (AFG) Program	FEMA/USFA (U.S. Fire Administration)	Provides equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards.	Available to fire departments and nonaffiliated emergency medical services providers. Grant awards based on specific projects as they are identified.

Table G-17. Madera County, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Federal (cont)	Community Block Grant Program Entitlement Communities Grants	U.S. HUD (U.S. Department of Housing and Urban Development)	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.	Available to entitled local agencies including Grant award based on specific projects as they are identified.
	Community Action for a Renewed Environment (CARE)	U.S. Environmental Protection Agency (EPA)	Through financial and technical assistance offers an innovative way for a community to organize and take action to reduce toxic pollution (i.e., stormwater) in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them.	Competitive grant program. Grant award based on specific projects as they are identified.
	Clean Water State Revolving Fund (CWSRF)	EPA	The CWSRF is a loan program that provides low-cost financing to eligible entities within state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects.	CWSRF programs provided more than $5 billion annually to fund water quality protection projects for wastewater treatment, non-point source pollution control, and watershed and estuary management.
	Public Health Emergency Preparedness (PHEP) Cooperative Agreement.	Department of Health and Human Services' (HHS') Centers for Disease Control and Prevention (CDC)	Funds are intended to upgrade state and local public health jurisdictions' preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies.	Competitive grant program. Grant award based on specific projects as they are identified.

Table G-17. Madera County, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Federal (cont)	Homeland Security Preparedness Technical Assistance Program (HSPTAP)	FEMA/DHS	Build and sustain preparedness technical assistance activities in support of the four homeland security mission areas (prevention, protection, response, recovery) and homeland security program management.	Technical assistance services developed and delivered to state and local homeland security personnel. Grant award based on specific projects as they are identified.

Table G-18. Madera County, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Plans	County of Madera, General Plan Background Report (1995)	Describes various methods of reducing hazards including improvements in coordination among County programs and those of other agencies and organizations. Also reflects more specific policies, such as assuring that new construction meets current structural and life safety standards and building codes, fire protection services planning, flood hazard mitigation, and emergency operations planning.	Geologic Hazards (Seismic, Liquefaction, Subsidence), Hazardous Materials, Flooding, and Dam Inundation.	Mitigation & Preparedness	Yes
	County of Madera, Emergency Operations Plan (2009)	Describes what the County's actions will be during a response to an emergency. Includes annexes that describe in more detail the actions required of County departments/agencies. Further, this plan describes the role of the Emergency Operation Center (EOC) and the coordination that occurs between the EOC and Operational Area jurisdictions and other response agencies.	Multi	Response	No
	Master Drainage Plan (1984)	Describes the drainage basins and necessary improvements needed for Madera North and South and Bonadelle Ranchos.	Flood	Mitigation	Yes
	Madera County Community Wildfire Protection Plan (2008)	Develop a communitywide risk assessment and prioritize communities at risk; develop a realistic plan of action utilizing the priorities to mitigate wildfire threat; develop an assessment strategy to monitor results mitigation projects; develop public awareness of wildfire problems within the community	Wildfire	Mitigation & Preparedness	Yes

Table G-18. Madera County, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Policies	County Municipal Code	The purpose of this code is to establish the minimum requirements to assure effective administration of County government. It provides authorities, defines responsibilities, and contains procedures related to the operations of all County government agencies. Implementing ordinances deal with specific subjects. The principal sections for hazard mitigation purposes are Titles: 2 – Administration and Personnel, 7 – Health and Sanitation, 14 – Buildings and Construction, and 18 – Zoning.	Earthquake Fire	Mitigation, Preparedness, and Response	Yes
Programs	NFIP (Joined in 1987)	Makes affordable flood insurance available to homeowners, business owners, and renters in participating communities. In exchange, those communities must adopt and enforce minimum floodplain management regulations to reduce the risk of damage from future floods.	Flood	Mitigation	Yes

Table G-19. Madera County, Current, Ongoing, and Completed Hazard Mitigation Projects and Programs

Status	Critical Facilities, Major Utilities/Transportation Systems, Public Buildings, Levees	Description	Year(s)
Current	County-owned buildings	Maintenance Department has a -5 year program to anchor all nonstructural elements, such as bookcases, suspended ceilings, and other items.	2007-2012
Current	Community-wide buildings and infrastructure	Madera County Wildfire Protection Plan Priority Fuel Treatments - prioritized fuel reduction projects for communities at high risk to wildfires.	Since 2008
Ongoing	Levees	Regular maintenance along the Berenda Slough to assure operational capacity, and channel clearance activities in cooperation with irrigation and water districts.	Major improvements made since 1986
Ongoing	Flood control	NFIP – The NFIP Coordinator enforces minimum floodplain management regulations to reduce the risk of damage from future floods.	Since 1987
Completed and Ongoing	Levees	Levee rehabilitation projects for: Fresno River and Berenda Slough (SJ-24), Madera County, California; Lower San Joaquin Levee District, San Joaquin River basin, left bank of Fresno River, right bank of Chowchilla Canal bypass, right bank of San Joaquin River, Madera County; San Joaquin River basin (SJ-23), left bank of Ash Slough, Madera County, California.	1997-1999 (for projects listed), ongoing

Table G-20. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
1	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such levee break, high and/or very high wildfire areas.	**1**	**1**	**0**	**0**	**0**	**2**
2	Integrate the 2010 LHMP, in particular the hazard analysis and mitigation strategy sections, into Madera County and the City of Madera's General Plan's Element update process.	**1**	**1**	**1**	**0**	**0**	**3**
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	**1**	**1**	**1**	**1**	**0**	**4**
4	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	**0**	**1**	**0**	**1**	**0**	**2**
5	Acquire, relocate, or elevate residential structures, in particular those that have been identified as RL properties, within the 100-year floodplain.	**1**	**0**	**0**	**1**	**1**	**3**

Table G-20. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
6	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain, such as County Fire Station 4 (Dairyland)	**1**	**1**	**1**	**1**	**1**	**5**
7	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	**1**	**1**	**1**	**1**	**1**	**5**
8	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide DFIRM, Community Assessment Visits, and/or DWR.	**1**	**0**	**1**	**0**	**0**	**2**
9	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	**1**	**0**	**0**	**1**	**1**	**3**

Table G-20. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
10	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	**1**	**0**	**1**	**0**	**0**	**2**
11	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	**1**	**1**	**1**	**1**	**1**	**5**
12	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	**1**	**1**	**1**	**0**	**0**	**3**
13	Bolt down the roofs of critical facilities in order to prevent wind damage.	**0**	**0**	**1**	**1**	**0**	**2**
14	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	**1**	**0**	**0**	**1**	**0**	**2**

Table G-20. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
15	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	**1**	**1**	**1**	**1**	**1**	**5**
16	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	**0**	**1**	**0**	**1**	**1**	**3**
17	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes.	**0**	**0**	**1**	**1**	**1**	**3**
18	Work with DWR to determine dam inundation areas of unmapped dams within the county and neighboring counties that may affect Madera County.	**1**	**0**	**1**	**0**	**0**	**2**
19	Encourage property owners located in the levee break hazard areas to purchase voluntary flood insurance.	**0**	**0**	**1**	**1**	**0**	**2**

Table G-20. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
20	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths ≥ 3-feet.	**0**	**0**	**0**	**1**	**1**	**2**
21	Provide seismic retrofit to existing water tanks and systems or a new engineered water distribution system serving both fire suppression and domestic water needs. Manage vegetation in areas within and adjacent to the access routes to water tanks and distribution systems within SRA/WUI areas. Reduce the potential wildfire extension to these critical facilities.	1	1	1	**1**	**1**	**5**
22	Design and implement a multihazard public awareness/education/outreach program addressing mitigation actions for high risk hazards (e.g., flood, wildfire)	**1**	**1**	**1**	**0**	**1**	**4**

Table G-21. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
1.	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	Replace existing steel truss-bridges: a) Road 800 at the West Fork of the Chowchilla River b) Road 800, 300' east of Road 820, at the Chowchilla River	RMA Engineering/Roads	HMGP/PDM Grants	**4-5 years**
2.	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	Madera County Fire Station 4 (Dairyland)	County Fire Department	HMGP/PDM Grants	**3-5 years**
3.	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	Existing County ramps, bridges, and roads identified in the 100-year floodplain (See Appendix G-J for specific structural information). Build bridges over low water crossings: a) Ave. 13 at Cottonwood Creek b) Ave. 23 ½ at Berenda Slough c) Ave. 22 ½ at Berenda Slough d) Ave. 22 at Berenda Slough	RMA Engineering/Roads	HMGP/PDM Grants	**3-5 years**

Table G-21. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
4.	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	Existing critical facilities located in areas that experience 41 days plus of peak wind gusts > 50 MPH. (See Appendix G-J for specific structural information). Trim/remove trees and vegetation: a) Road 800 b) Road 400 c) Road 426 d) Road 274 e) Road 222 f) Road 211	RMA Engineering/Roads	HMGP/PDM Grants	2-5 years
5.	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	Existing County ramps, bridges, and roads identified in the hazardous material transportation corridor areas (See Appendix G-J for specific structural information). Replace Bridges: a) Road 810 & Road 800 one-lane bridge at the East Fork of the Chowchilla River b) Road 200 at Fine Gold Creek	RMA Engineering/Roads	HMGP/PDM Grants	3-5 years

Table G-21. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
6.	Provide seismic retrofitting to existing water tanks and systems or a new engineered water distribution system serving both fire suppression and domestic water needs. Manage vegetation in areas within and adjacent to the access routes to water tanks and distribution systems within SRA/WUI areas. Reduce the potential of wildfire extension to these critical facilities.	Teaford Meadows Water System, Miami Creek Knolls Water System, and Sierra Highlands Water System	RMA Special Districts	HMGP/PDM Grants	3-4 years
7.	Design and implement a multihazard public awareness/education/outreach program addressing mitigation actions for high risk hazards (e.g., flood, wildfire)	Madera County communities	County Operational Area Office of Emergency Services	HMGP/PDM Grants	2-3 years

Appendix H – City of Madera

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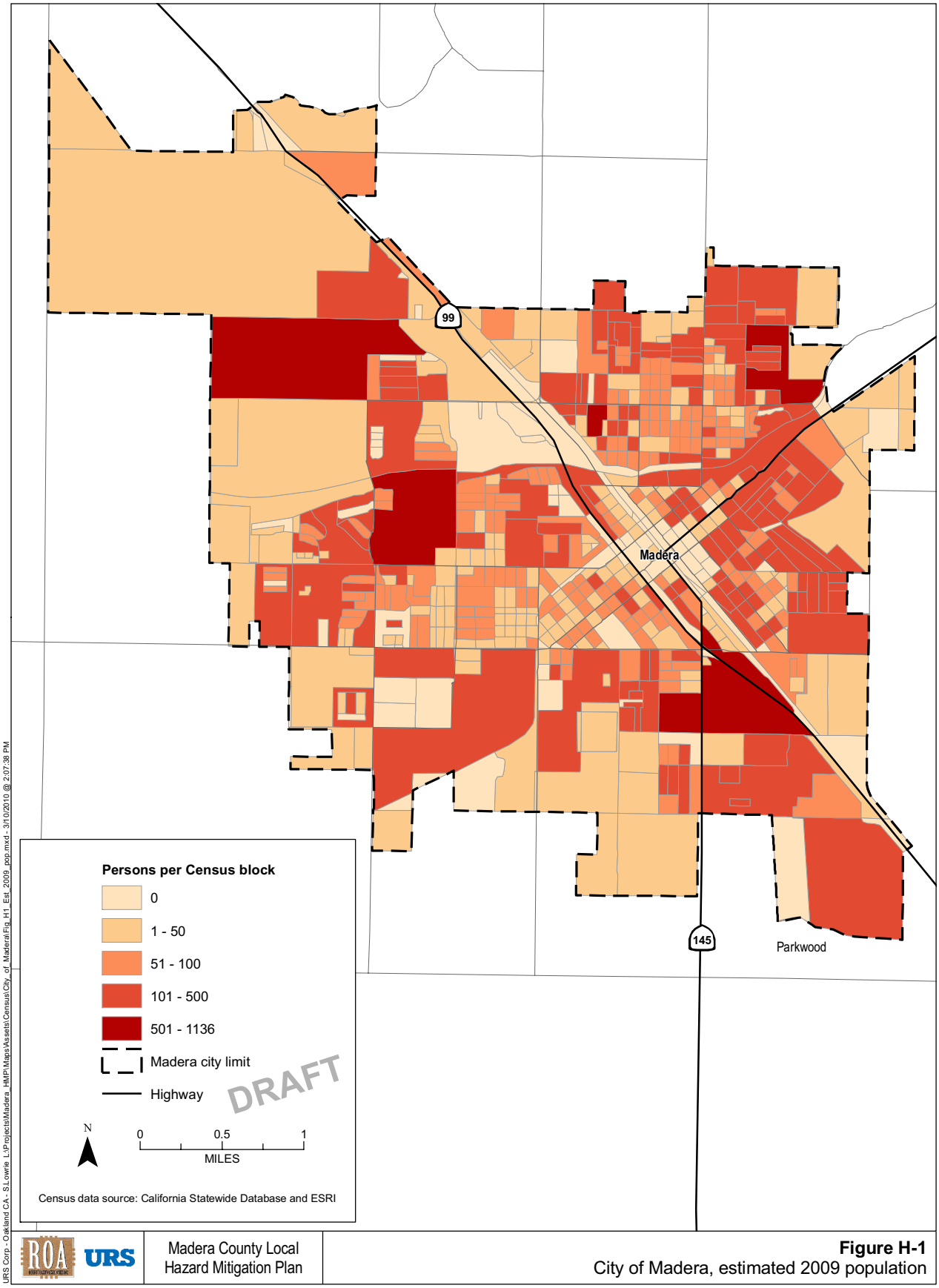

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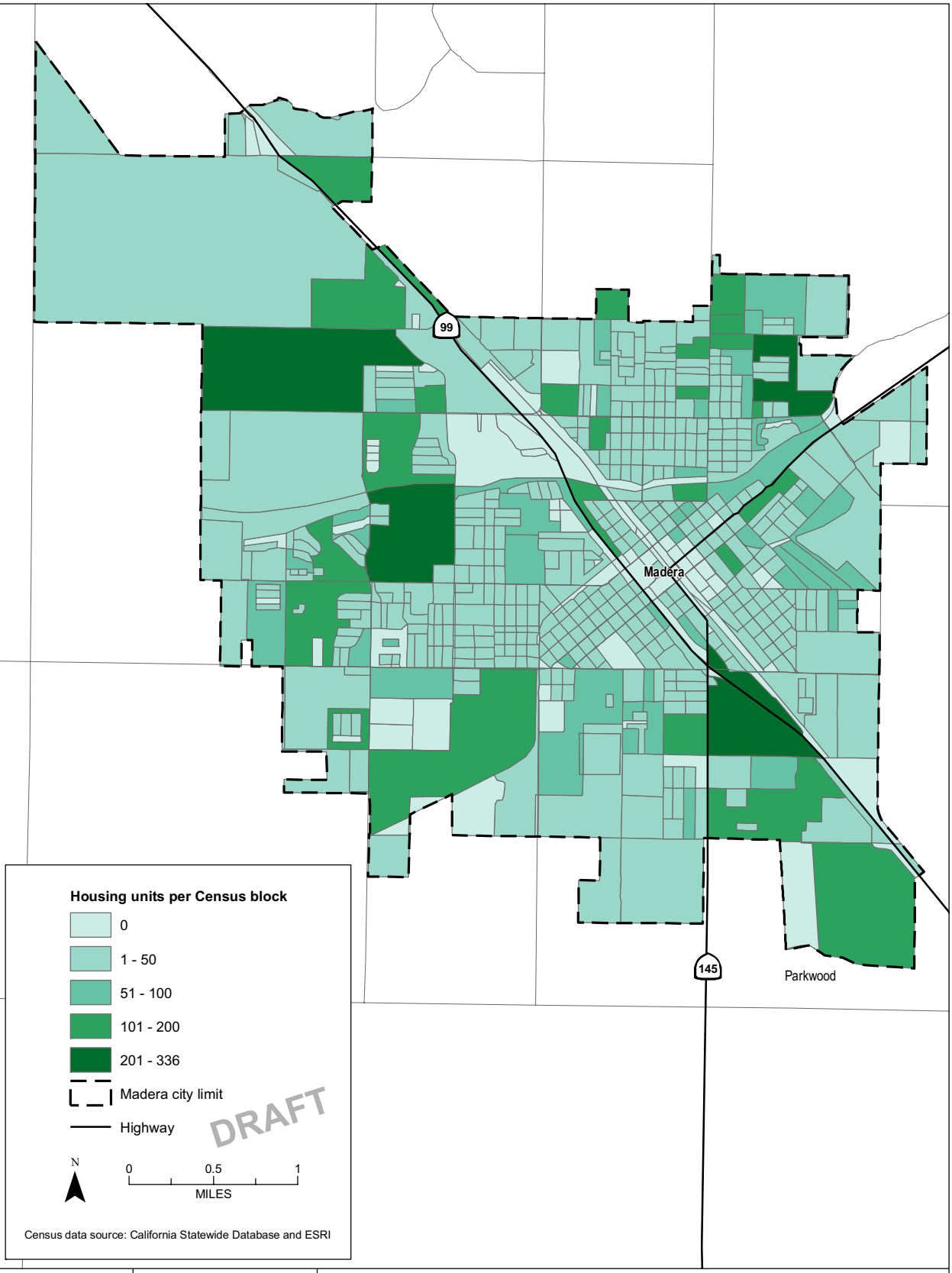
Madera County Local Hazard Mitigation Plan

Figure H-1
City of Madera, estimated 2009 population



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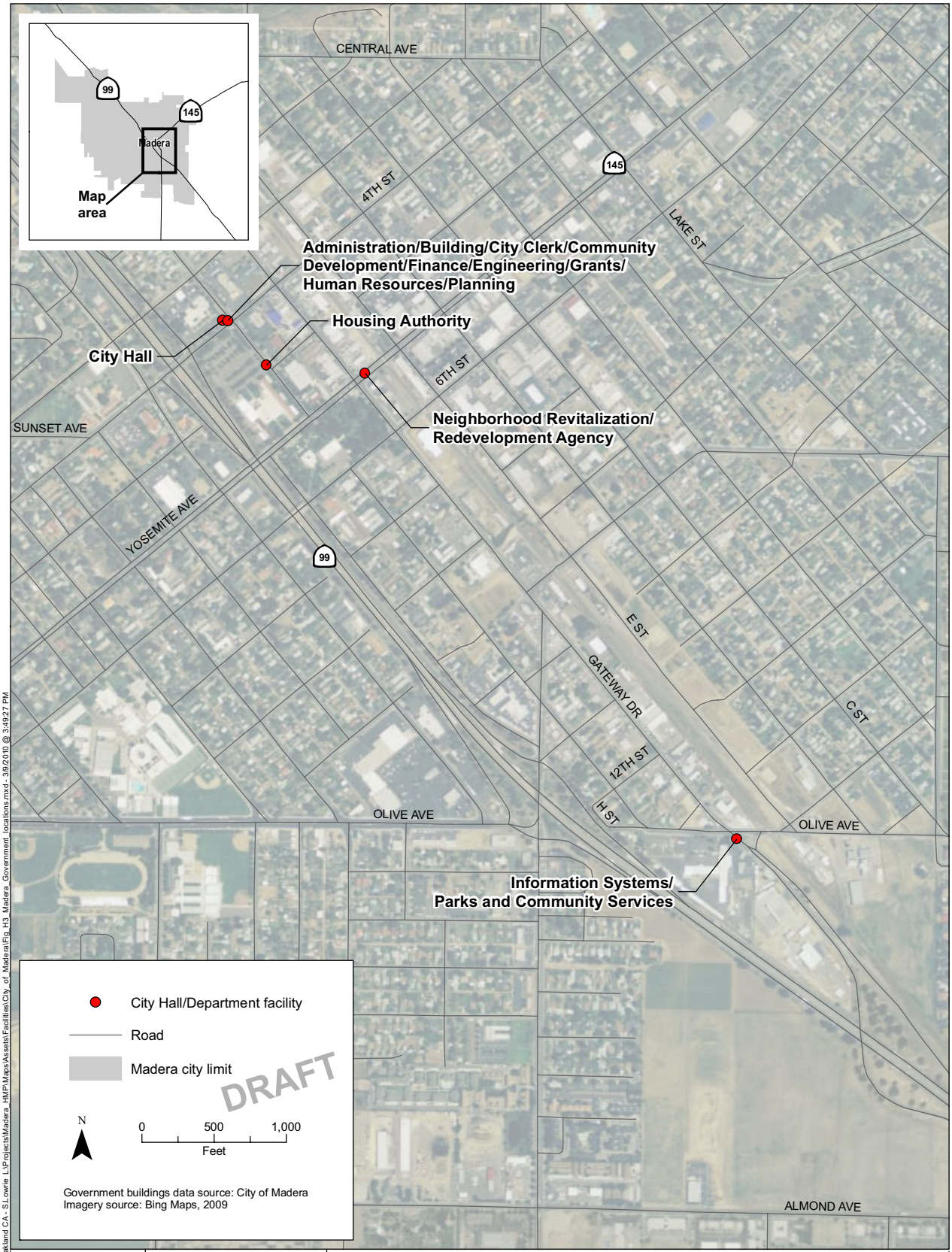
Madera County Local Hazard Mitigation Plan

Figure H-2
City of Madera, estimated 2009 residential buildings



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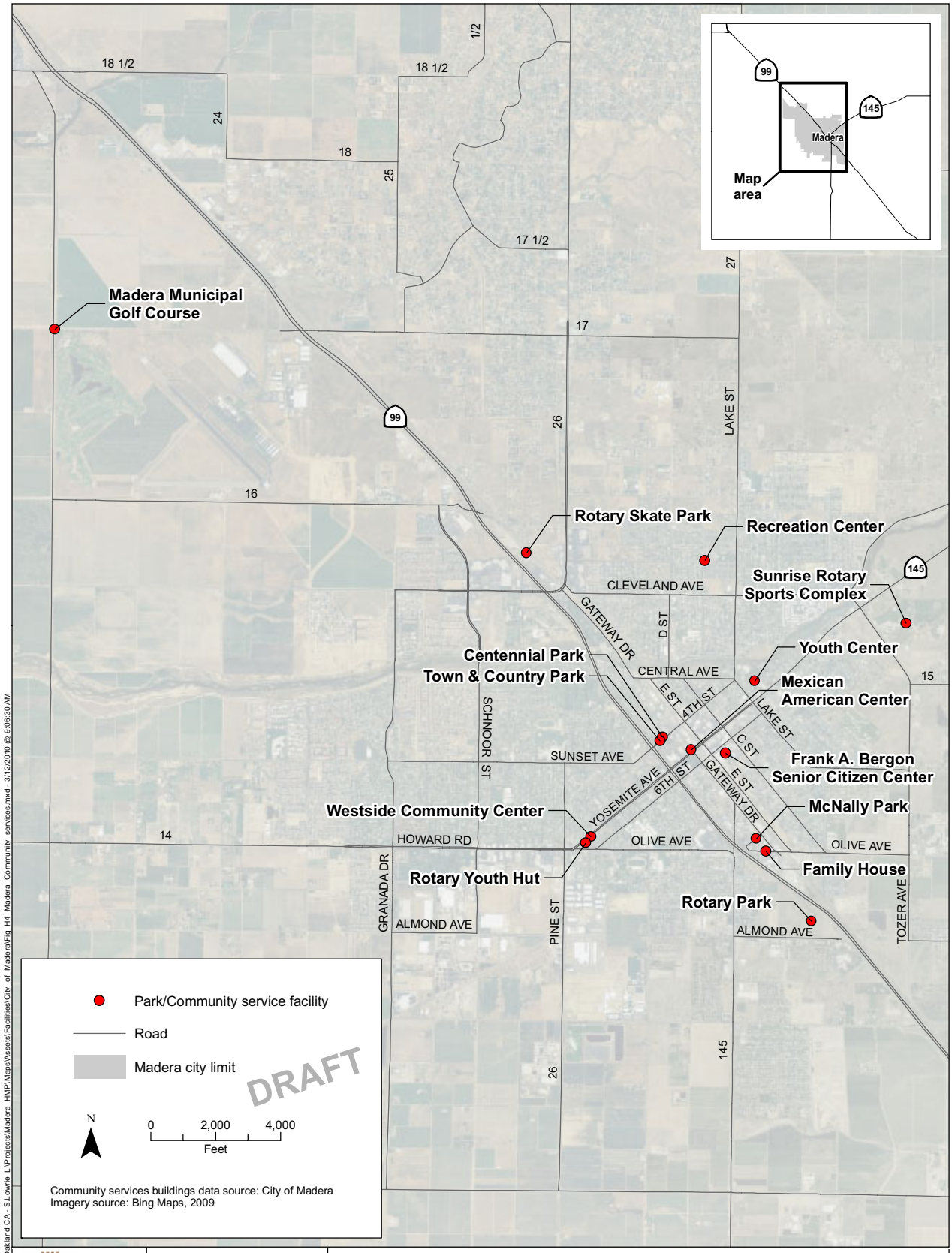
Madera County Local Hazard Mitigation Plan

Figure H-3
City of Madera, City Hall and departments



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Madera County Local Hazard Mitigation Plan

Figure H-4
City of Madera, Parks and community services

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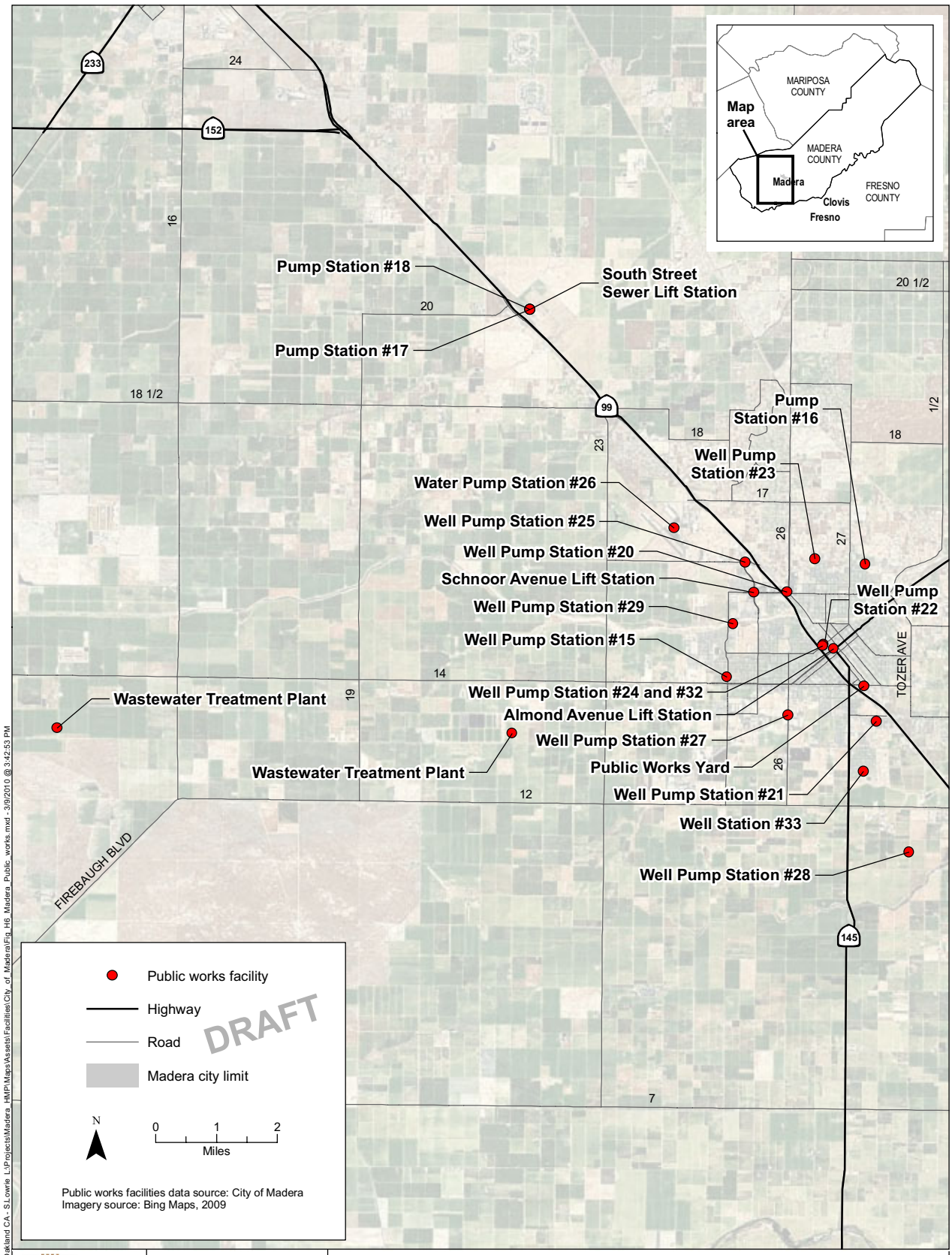
ROA URS	Madera County Local Hazard Mitigation Plan	**Figure H-5** City of Madera, Public safety



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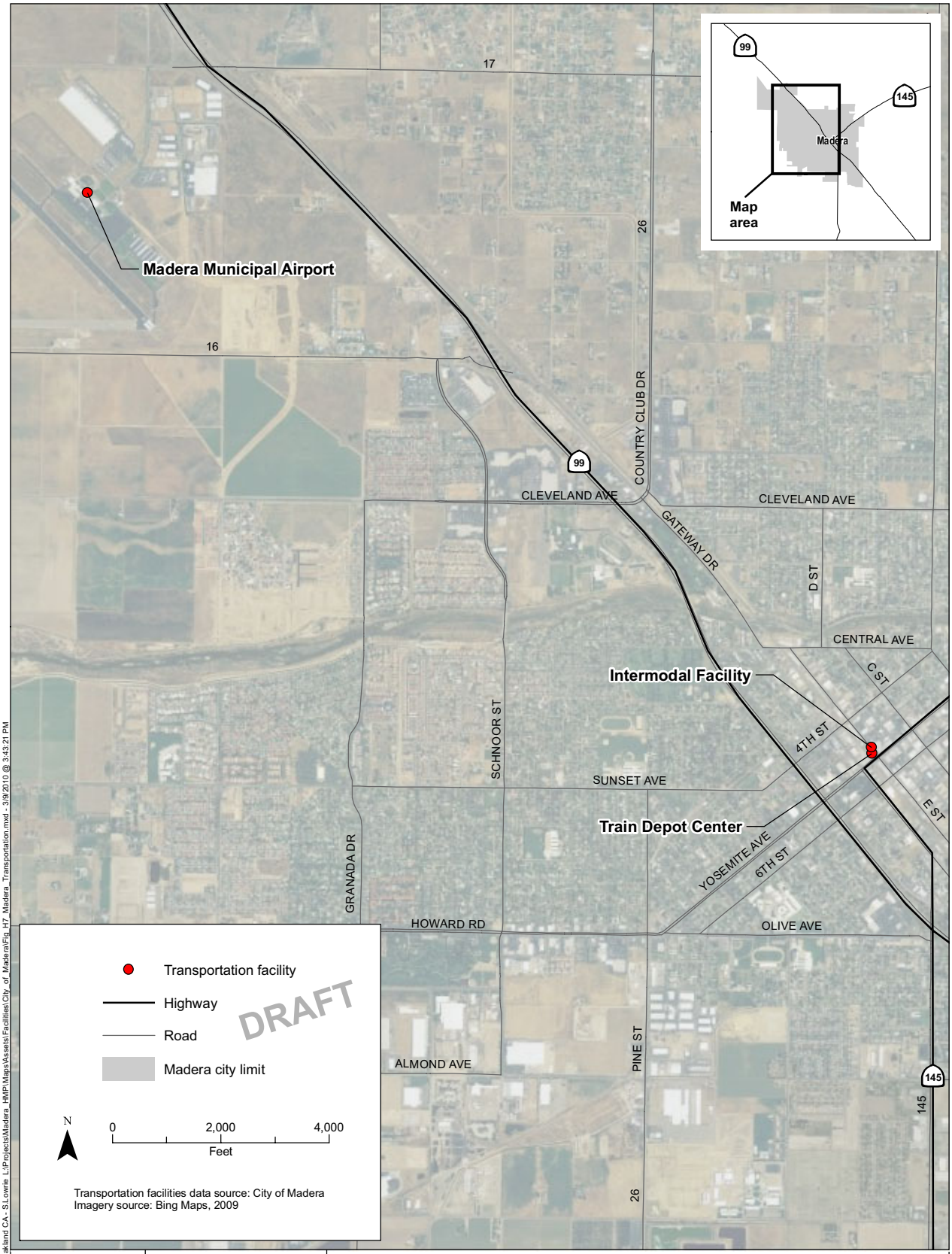
Madera County Local Hazard Mitigation Plan

Figure H-6
City of Madera, Public works



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Madera County Local Hazard Mitigation Plan

Figure H-7
City of Madera, Transportation

Table H-1. City of Madera, Total Assets

Type	Facility	Address	City	Structural Value ($)
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/ Engineering/Grants/Human Resources/Planning	205 West 4th Street	Madera	Unknown
City Hall and Departments	City Hall	203 West 4th Street	Madera	2,803,384
City Hall and Departments	Housing Authority	205 N. G St.	Madera	Unknown
City Hall and Departments	Information Systems/Parks & Community Services	1030 South Gateway Dr.	Madera	Unknown
City Hall and Departments	Neighborhood Revitalization/ Redevelopment Agency	5 East Yosemite Avenue	Madera	376,539
Parks and Community Services	Centennial Park	205 West 4th Street	Madera	219,338
Parks and Community Services	Family House	40 West Olive Street	Madera	124,618
Parks and Community Services	Frank A. Bergon Senior Center	238 South D Street	Madera	524,216
Parks and Community Services	Madera Municipal Golf Course	23200 Ave 17	Madera	1,882,669
Parks and Community Services	McNally Park	Roosevelt and 12th street	Madera	336,610
Parks and Community Services	Mexican American Center	716 Columbia Center	Madera	244,986
Parks and Community Services	Recreation Center	703 East Sherwood Way	Madera	3,437,623
Parks and Community Services	Rotary Park	Gateway Drive	Madera	604,037
Parks and Community	Rotary Skate Park	North Gateway Drive	Madera	947,945

Table H-1. City of Madera, Total Assets

Type	Facility	Address	City	Structural Value ($)
Services				
Parks and Community Services	Rotary Youth Hut	113 South Q Street	Madera	Unknown
Parks and Community Services	Sunrise Rotary Sports Complex	1901 Clinton Ave	Madera	216,606
Parks and Community Services	Town & Country Park	Howard Road and Schnoor Avenue	Madera	1,180,193
Parks and Community Services	Westside Community Center	1124 West Yosemite Avenue	Madera	958,939
Parks and Community Services	Youth Center	701 East 5th	Madera	Unknown
Public Safety	Division HQ Station #1	14225 Road 28	Madera	Unknown
Public Safety	Fire Station #6 (Madera City)	317 Lake Street	Madera	963,839
Public Safety	Fire Station #7 (Madera City)	200 Schnoor Avenue	Madera	879,878
Public Safety	Police Facility	330 South C Street	Madera	3,988,594
Public Works	Almond Avenue Lift Station	Almond and Highway 145	Madera	25,431
Public Works	Public Works Yard	1030 South Gateway Street	Madera	3,537,149
Public Works	Pump Station #16	Kennedy and Tulare	Madera	198,189
Public Works	Pump Station #17	Olive Street	Madera	130,017
Public Works	Pump Station #18	Gateway Drive	Madera	76,440
Public Works	Schnoor Avenue Lift Station	Schnoor at Cleveland	Madera	81,370
Public Works	South Street Sewer Lift Station	Columbia Center	Madera	791,199
Public Works	Wastewater Treatment Plant	13048 Road 21 1/2	Madera	18,350,280
Public Works	Wastewater Treatment Plant	13038 Road 215	Madera	6,316,520

Table H-1. City of Madera, Total Assets

Type	Facility	Address	City	Structural Value ($)
Public Works	Water Pump Station #26	Airport and Aviation Drive	Madera	31,368
Public Works	Water Pump Station #32	Sunset and Via Ceroni	Madera	156,840
Public Works	Well Pump Station #15	212 Granada Street	Madera	107,386
Public Works	Well Pump Station #20	Gateway and Cleveland	Madera	107,386
Public Works	Well Pump Station #21	Barnett Way	Madera	107,386
Public Works	Well Pump Station #22	203 West 4th Street	Madera	105,586
Public Works	Well Pump Station #23	Adell and Sonora	Madera	107,386
Public Works	Well Pump Station #24	Tulare and Dalton	Madera	107,386
Public Works	Well Pump Station #25	Avenue 16 and Granada Street	Madera	107,386
Public Works	Well Pump Station #27	Almond and Pine	Madera	246,168
Public Works	Well Pump Station #28	Story Road and Road 28	Madera	107,386
Public Works	Well Pump Station #29	2400 Riverview Drive	Madera	118,772
Public Works	Well Station #33	San Bruno Ave (approx)	Madera	160,288
Transportation	Intermodal Facility	123 North E Street	Madera	130,152
Transportation	Madera Municipal Airport	4150 Aviation Drive	Madera	6,047,596
Transportation	Train Depot Center	120 North E Street	Madera	744,954
Population	58,249			
Residential Buildings	17,670			

Table H-2. City of Madera, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	Light
City Hall and Departments	City Hall	2,803,384	Light
City Hall and Departments	Housing Authority	Unknown	Light
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Light
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	Light
Parks and Community Services	Centennial Park	219,338	Light
Parks and Community Services	Family House	124,618	Light
Parks and Community Services	Frank A. Bergon Senior Center	524,216	Light
Parks and Community Services	Madera Municipal Golf Course	1,882,669	Light
Parks and Community Services	McNally Park	336,610	Light
Parks and Community Services	Mexican American Center	244,986	Light
Parks and Community Services	Recreation Center	3,437,623	Light
Parks and Community Services	Rotary Park	604,037	Light
Parks and Community Services	Rotary Skate Park	947,945	Light
Parks and Community Services	Rotary Youth Hut	Unknown	Light
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	Light
Parks and Community Services	Town & Country Park	1,180,193	Light
Parks and Community Services	Westside Community Center	958,939	Light

Table H-2. City of Madera, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Parks and Community Services	Youth Center	Unknown	Light
Public Safety	Division HQ Station #1	Unknown	Light
Public Safety	Fire Station #6 (Madera City)	963,839	Light
Public Safety	Fire Station #7 (Madera City)	879,878	Light
Public Safety	Police Facility	3,988,594	Light
Public Works	Almond Avenue Lift Station	25,431	Light
Public Works	Public Works Yard	3,537,149	Light
Public Works	Pump Station #16	198,189	Light
Public Works	Pump Station #17	130,017	Light
Public Works	Pump Station #18	76,440	Light
Public Works	Schnoor Avenue Lift Station	81,370	Light
Public Works	South Street Sewer Lift Station	791,199	Light
Public Works	Wastewater Treatment Plant	18,350,280	Light
Public Works	Wastewater Treatment Plant	6,316,520	Light
Public Works	Water Pump Station #26	31,368	Light
Public Works	Water Pump Station #32	156,840	Light
Public Works	Well Pump Station #15	107,386	Light
Public Works	Well Pump Station #20	107,386	Light
Public Works	Well Pump Station #21	107,386	Light
Public Works	Well Pump Station #22	105,586	Light
Public Works	Well Pump Station #23	107,386	Light
Public Works	Well Pump Station #24	107,386	Light
Public Works	Well Pump Station #25	107,386	Light

Table H-2. City of Madera, Seismic Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Public Works	Well Pump Station #27	246,168	Light
Public Works	Well Pump Station #28	107,386	Light
Public Works	Well Pump Station #29	118,772	Light
Public Works	Well Station #33	160,288	Light
Transportation	Intermodal Facility	130,152	Light
Transportation	Madera Municipal Airport	6,047,596	Light
Transportation	Train Depot Center	744,954	Light
Population	58,249		
Residential Buildings	17,670		

Table H-3. City of Madera, Flood Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Special Flood Hazard Area
Parks and Community Services	Frank A. Bergon Senior Center	524,216	500-Year Floodplain
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	500-Year Floodplain
Public Safety	Division HQ Station #1	Unknown	500-Year Floodplain
Public Safety	Police Facility	3,988,594	500-Year Floodplain
Transportation	Intermodal Facility	130,152	500-Year Floodplain
Transportation	Train Depot Center	744,954	500-Year Floodplain
Public Works	Wastewater Treatment Plant	6,316,520	100-Year Floodplain
Public Works	Well Station #33	160,288	100-Year Floodplain
Population	11,114 (500-Year Floodplain); 872 (100-Year Floodplain)		
Residential Buildings	2,559 (500-Year Floodplain); 385 (100-Year Floodplain)		

Table H-4. City of Madera, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	Yes
City Hall and Departments	City Hall	2,803,384	Yes
City Hall and Departments	Housing Authority	Unknown	Yes
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Yes
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	Yes
Parks and Community Services	Centennial Park	219,338	Yes
Parks and Community Services	Family House	124,618	Yes
Parks and Community Services	Frank A. Bergon Senior Center	524,216	Yes
Parks and Community Services	Madera Municipal Golf Course	1,882,669	Yes
Parks and Community Services	McNally Park	336,610	Yes
Parks and Community Services	Mexican American Center	244,986	Yes
Parks and Community Services	Recreation Center	3,437,623	Yes
Parks and Community Services	Rotary Park	604,037	Yes
Parks and Community Services	Rotary Skate Park	947,945	Yes
Parks and Community Services	Rotary Youth Hut	Unknown	Yes
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	Yes
Parks and Community Services	Town & Country Park	1,180,193	Yes

Table H-4. City of Madera, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
Parks and Community Services	Westside Community Center	958,939	Yes
Parks and Community Services	Youth Center	Unknown	Yes
Public Safety	Division HQ Station #1	Unknown	Yes
Public Safety	Fire Station #6 (Madera City)	963,839	Yes
Public Safety	Fire Station #7 (Madera City)	879,878	Yes
Public Safety	Police Facility	3,988,594	Yes
Public Works	Almond Avenue Lift Station	25,431	Yes
Public Works	Public Works Yard	3,537,149	Yes
Public Works	Pump Station #16	198,189	Yes
Public Works	Pump Station #17	130,017	Yes
Public Works	Pump Station #18	76,440	Yes
Public Works	Schnoor Avenue Lift Station	81,370	Yes
Public Works	South Street Sewer Lift Station	791,199	Yes
Public Works	Wastewater Treatment Plant	18,350,280	Yes
Public Works	Wastewater Treatment Plant	6,316,520	Yes
Public Works	Water Pump Station #26	31,368	Yes
Public Works	Water Pump Station #32	156,840	Yes
Public Works	Well Pump Station #15	107,386	Yes
Public Works	Well Pump Station #20	107,386	Yes
Public Works	Well Pump Station #21	107,386	Yes
Public Works	Well Pump Station #22	105,586	Yes
Public Works	Well Pump Station #23	107,386	Yes

Table H-4. City of Madera, Fog Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
Public Works	Well Pump Station #24	107,386	Yes
Public Works	Well Pump Station #25	107,386	Yes
Public Works	Well Pump Station #27	246,168	Yes
Public Works	Well Pump Station #28	107,386	Yes
Public Works	Well Pump Station #29	118,772	Yes
Public Works	Well Station #33	160,288	Yes
Transportation	Intermodal Facility	130,152	Yes
Transportation	Madera Municipal Airport	6,047,596	Yes
Transportation	Train Depot Center	744,954	Yes
Population	58,249		
Residential Buildings	17,670		

Table H-5. City of Madera, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	19.5 - 30.4
City Hall and Departments	City Hall	2,803,384	19.5 - 30.4
City Hall and Departments	Housing Authority	Unknown	19.5 - 30.4
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	19.5 - 30.4
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	19.5 - 30.4
Parks and Community Services	Centennial Park	219,338	19.5 - 30.4
Parks and Community Services	Family House	124,618	19.5 - 30.4
Parks and Community Services	Frank A. Bergon Senior Center	524,216	19.5 - 30.4
Parks and Community Services	Madera Municipal Golf Course	1,882,669	19.5 - 30.4
Parks and Community Services	McNally Park	336,610	19.5 - 30.4
Parks and Community Services	Mexican American Center	244,986	19.5 - 30.4
Parks and Community Services	Recreation Center	3,437,623	19.5 - 30.4
Parks and Community Services	Rotary Park	604,037	19.5 - 30.4
Parks and Community Services	Rotary Skate Park	947,945	19.5 - 30.4
Parks and Community Services	Rotary Youth Hut	Unknown	19.5 - 30.4
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	19.5 - 30.4
Parks and Community Services	Town & Country Park	1,180,193	19.5 - 30.4

Table H-5. City of Madera, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Parks and Community Services	Westside Community Center	958,939	19.5 - 30.4
Parks and Community Services	Youth Center	Unknown	19.5 - 30.4
Public Safety	Division HQ Station #1	Unknown	19.5 - 30.4
Public Safety	Fire Station #6 (Madera City)	963,839	19.5 - 30.4
Public Safety	Fire Station #7 (Madera City)	879,878	19.5 - 30.4
Public Safety	Police Facility	3,988,594	19.5 - 30.4
Public Works	Almond Avenue Lift Station	25,431	19.5 - 30.4
Public Works	Public Works Yard	3,537,149	19.5 - 30.4
Public Works	Pump Station #16	198,189	19.5 - 30.4
Public Works	Schnoor Avenue Lift Station	81,370	19.5 - 30.4
Public Works	Wastewater Treatment Plant	18,350,280	19.5 - 30.4
Public Works	Water Pump Station #26	31,368	19.5 - 30.4
Public Works	Water Pump Station #32	156,840	19.5 - 30.4
Public Works	Well Pump Station #15	107,386	19.5 - 30.4
Public Works	Well Pump Station #20	107,386	19.5 - 30.4
Public Works	Well Pump Station #21	107,386	19.5 - 30.4
Public Works	Well Pump Station #22	105,586	19.5 - 30.4
Public Works	Well Pump Station #23	107,386	19.5 - 30.4
Public Works	Well Pump Station #24	107,386	19.5 - 30.4
Public Works	Well Pump Station #25	107,386	19.5 - 30.4
Public Works	Well Pump Station #27	246,168	19.5 - 30.4

Table H-5. City of Madera, Severe Wind Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Public Works	Well Pump Station #28	107,386	19.5 - 30.4
Public Works	Well Pump Station #29	118,772	19.5 - 30.4
Public Works	Well Station #33	160,288	19.5 - 30.4
Transportation	Intermodal Facility	130,152	19.5 - 30.4
Transportation	Madera Municipal Airport	6,047,596	19.5 - 30.4
Transportation	Train Depot Center	744,954	19.5 - 30.4
Public Works	Pump Station #17	130,017	30.5 - 40.4
Public Works	Pump Station #18	76,440	30.5 - 40.4
Public Works	South Street Sewer Lift Station	791,199	30.5 - 40.4
Public Works	Wastewater Treatment Plant	6,316,520	30.5 - 40.4
Population	58,249 (19.5 - 30.4)		
Residential Buildings	17,670 (19.5 - 30.4)		

Table H-6. City of Madera, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	Low: 0.00-23.99
City Hall and Departments	City Hall	2,803,384	Low: 0.00-23.99
City Hall and Departments	Housing Authority	Unknown	Low: 0.00-23.99
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Low: 0.00-23.99
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	Low: 0.00-23.99
Parks and Community Services	Centennial Park	219,338	Low: 0.00-23.99
Parks and Community Services	Family House	124,618	Low: 0.00-23.99
Parks and Community Services	Frank A. Bergon Senior Center	524,216	Low: 0.00-23.99
Parks and Community Services	Madera Municipal Golf Course	1,882,669	Low: 0.00-23.99
Parks and Community Services	McNally Park	336,610	Low: 0.00-23.99
Parks and Community Services	Mexican American Center	244,986	Low: 0.00-23.99
Parks and Community Services	Recreation Center	3,437,623	Low: 0.00-23.99
Parks and Community Services	Rotary Park	604,037	Low: 0.00-23.99
Parks and Community Services	Rotary Skate Park	947,945	Low: 0.00-23.99
Parks and Community Services	Rotary Youth Hut	Unknown	Low: 0.00-23.99
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	Low: 0.00-23.99
Parks and Community Services	Town & Country Park	1,180,193	Low: 0.00-23.99

Table H-6. City of Madera, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Parks and Community Services	Westside Community Center	958,939	Low: 0.00-23.99
Parks and Community Services	Youth Center	Unknown	Low: 0.00-23.99
Public Safety	Division HQ Station #1	Unknown	Low: 0.00-23.99
Public Safety	Fire Station #6 (Madera City)	963,839	Low: 0.00-23.99
Public Safety	Fire Station #7 (Madera City)	879,878	Low: 0.00-23.99
Public Safety	Police Facility	3,988,594	Low: 0.00-23.99
Public Works	Almond Avenue Lift Station	25,431	Low: 0.00-23.99
Public Works	Public Works Yard	3,537,149	Low: 0.00-23.99
Public Works	Pump Station #16	198,189	Low: 0.00-23.99
Public Works	Pump Station #17	130,017	Low: 0.00-23.99
Public Works	Pump Station #18	76,440	Low: 0.00-23.99
Public Works	Schnoor Avenue Lift Station	81,370	Low: 0.00-23.99
Public Works	South Street Sewer Lift Station	791,199	Low: 0.00-23.99
Public Works	Wastewater Treatment Plant	18,350,280	Low: 0.00-23.99
Public Works	Wastewater Treatment Plant	6,316,520	Low: 0.00-23.99
Public Works	Water Pump Station #26	31,368	Low: 0.00-23.99
Public Works	Water Pump Station #32	156,840	Low: 0.00-23.99
Public Works	Well Pump Station #15	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #20	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #21	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #22	105,586	Low: 0.00-23.99
Public Works	Well Pump Station #23	107,386	Low: 0.00-23.99

Table H-6. City of Madera, Winter Storm Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Public Works	Well Pump Station #24	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #25	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #27	246,168	Low: 0.00-23.99
Public Works	Well Pump Station #28	107,386	Low: 0.00-23.99
Public Works	Well Pump Station #29	118,772	Low: 0.00-23.99
Public Works	Well Station #33	160,288	Low: 0.00-23.99
Transportation	Intermodal Facility	130,152	Low: 0.00-23.99
Transportation	Madera Municipal Airport	6,047,596	Low: 0.00-23.99
Transportation	Train Depot Center	744,954	Low: 0.00-23.99
Population	58,249		
Residential Buildings	17,670		

Table H-7. City of Madera, Wildfire Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: LRA Fire Hazard Severity Zone
Public Works	Well Pump Station #29	118,772	Moderate
Population	1,111		
Residential Buildings	537		

LRA = Local Responsibility Area

Table H-8. City of Madera, Dam Failure Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	Hidden
City Hall and Departments	City Hall	2,803,384	Hidden
City Hall and Departments	Housing Authority	Unknown	Hidden
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Hidden
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	Hidden
Parks and Community Services	Centennial Park	219,338	Hidden
Parks and Community Services	Family House	124,618	Hidden
Parks and Community Services	Frank A. Bergon Senior Center	524,216	Hidden
Parks and Community Services	McNally Park	336,610	Hidden
Parks and Community Services	Mexican American Center	244,986	Hidden
Parks and Community Services	Recreation Center	3,437,623	Hidden
Parks and Community Services	Rotary Park	604,037	Hidden
Parks and Community Services	Rotary Skate Park	947,945	Hidden
Parks and Community Services	Rotary Youth Hut	Unknown	Hidden
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	Hidden
Parks and Community Services	Town & Country Park	1,180,193	Hidden
Parks and Community Services	Westside Community Center	958,939	Hidden

Table H-8. City of Madera, Dam Failure Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Parks and Community Services	Youth Center	Unknown	Hidden
Public Safety	Division HQ Station #1	Unknown	Hidden
Public Safety	Fire Station #6 (Madera City)	963,839	Hidden
Public Safety	Fire Station #7 (Madera City)	879,878	Hidden
Public Safety	Police Facility	3,988,594	Hidden
Public Works	Almond Avenue Lift Station	25,431	Hidden
Public Works	Public Works Yard	3,537,149	Hidden
Public Works	Pump Station #16	198,189	Hidden
Public Works	Schnoor Avenue Lift Station	81,370	Hidden
Public Works	Wastewater Treatment Plant	18,350,280	Hidden
Public Works	Water Pump Station #26	31,368	Hidden
Public Works	Water Pump Station #32	156,840	Hidden
Public Works	Well Pump Station #15	107,386	Hidden
Public Works	Well Pump Station #20	107,386	Hidden
Public Works	Well Pump Station #21	107,386	Hidden
Public Works	Well Pump Station #22	105,586	Hidden
Public Works	Well Pump Station #23	107,386	Hidden
Public Works	Well Pump Station #24	107,386	Hidden
Public Works	Well Pump Station #25	107,386	Hidden
Public Works	Well Pump Station #27	246,168	Hidden
Public Works	Well Pump Station #28	107,386	Hidden

Table H-8. City of Madera, Dam Failure Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Public Works	Well Pump Station #29	118,772	Hidden
Public Works	Well Station #33	160,288	Hidden
Transportation	Intermodal Facility	130,152	Hidden
Transportation	Madera Municipal Airport	6,047,596	Hidden
Transportation	Train Depot Center	744,954	Hidden
Population	58,148		
Residential Buildings	17,537		

LRA = Local Responsibility Area

Table H-8. City of Madera, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Transportation Corridor (1/4-mile buffer)
City Hall and Departments	Admin/Building/City Clerk/Community Development/Finance/Engineering/ Grants/Human Resources/Planning	Unknown	Yes
City Hall and Departments	City Hall	2,803,384	Yes
City Hall and Departments	Housing Authority	Unknown	Yes
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Yes
City Hall and Departments	Neighborhood Revitalization/Redevelopment Agency	376,539	Yes
Parks and Community Services	Centennial Park	219,338	Yes
Parks and Community Services	Family House	124,618	Yes
Parks and Community Services	Frank A. Bergon Senior Center	524,216	Yes
Parks and Community Services	McNally Park	336,610	Yes
Parks and Community Services	Mexican American Center	244,986	Yes
Parks and Community Services	Rotary Park	604,037	Yes
Parks and Community Services	Rotary Skate Park	947,945	Yes
Parks and Community Services	Rotary Youth Hut	Unknown	Yes
Parks and Community Services	Sunrise Rotary Sports Complex	216,606	Yes
Parks and Community Services	Town & Country Park	1,180,193	Yes
Parks and Community Services	Westside Community Center	958,939	Yes
Parks and Community Services	Youth Center	Unknown	Yes

Table H-8. City of Madera, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Transportation Corridor (1/4-mile buffer)
Public Safety	Fire Station #6 (Madera City)	963,839	Yes
Public Safety	Police Facility	3,988,594	Yes
Public Works	Almond Avenue Lift Station	25,431	Yes
Public Works	Public Works Yard	3,537,149	Yes
Public Works	Pump Station #17	130,017	Yes
Public Works	Pump Station #18	76,440	Yes
Public Works	South Street Sewer Lift Station	791,199	Yes
Public Works	Water Pump Station #32	156,840	Yes
Public Works	Well Pump Station #20	107,386	Yes
Public Works	Well Pump Station #21	107,386	Yes
Public Works	Well Pump Station #22	105,586	Yes
Public Works	Well Pump Station #24	107,386	Yes
Public Works	Well Pump Station #25	107,386	Yes
Public Works	Well Pump Station #27	246,168	Yes
Transportation	Intermodal Facility	130,152	Yes
Transportation	Train Depot Center	744,954	Yes
Population	24,412		
Residential Buildings	7,283		

Table H-9. City of Madera, Hazardous Material Hazard Vulnerability Analysis

Type	Facility	Structural Value ($)	Hazard Area: Fixed Facilities (1/4-mile buffer)
City Hall and Departments	Information Systems/Parks & Community Services	Unknown	Yes
Parks and Community Services	Family House	124,618	Yes
Parks and Community Services	McNally Park	336,610	Yes
Public Works	Public Works Yard	3,537,149	Yes
Population	3,116		
Residential Buildings	801		

Table H-10. City of Madera, Overall Summary of Total Assets at Risk

Hazard	Hazard Area	Population		Residential Buildings		Facilities	
		No.	%	No.	%	No.	%
Seismic	Light	58,249	100	17,670	100	48	100
Flood	500-Year Floodplain	11,114	19	2,559	14	6	13
	100-Year Floodplain	872	15	385	2	2	4
Fog	Potential Fog Area, (elevation $\leq$ 656 feet)	58,249	100	17,670	100	48	100
Severe Wind	Peak Wind Gusts $\geq$ 50 MPH, Annual Mean Occurrence (days): 19.5-30.4	58,249	100	17,670	100	44	92
	Peak Wind Gusts $\geq$ 50 MPH, Annual Mean Occurrence (days): 30.5-40.4	0	0	0	0	4	8
Winter Storm	Mean Annual Snowfall (in.): Low (0.00-23.99)	58,249	100	17,670	100	48	100
Wildfire	LRA: Moderate	1,111	2	537	3	1	2
Dam Failure	Hidden	58,148	99	17,537	99	43	90
Hazardous Material Event	Transportation Corridor	24,412	42	7,283	41	33	69
	Fixed Facility	3,116	5	801	5	4	8

Table H-11. City of Madera, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Planner(s), engineer(s) and technical staff with knowledge of land development, land management practices, and human-caused and natural hazards.	Community Development Division: Planning Department	Develops and maintains the General Plan, including the Safety Element. Latest revision adopted by City Council on October 7, 2009. (Ref: Municipal Code, Title X: Planning and Zoning) Develops area plans based on the General Plan, to provide more specific guidance for the development of more specific areas. Reviews private development projects and proposed capital improvements projects and other physical projects involving property for consistency and conformity with the General Plan. Anticipates and acts on the need for new plans, policies, and Code changes. Applies the approved plans, policies, code provisions, and other regulations to proposed land uses.
Engineer(s), Building Inspectors/Code Enforcement Officers or other professional(s) and technical staff trained in construction requirements and practices related to existing and new buildings.	Community Development Division: Building Department/Code Enforcement Division	The Building Department/Code Enforcement Division oversees the effective, efficient, fair, and safe enforcement of the City's Building, Housing, Plumbing, Electrical, Mechanical, and Disability Access Codes. (Ref: Municipal Code, Title IX: Building Regulations.)
Engineers, construction project managers, and supporting technical staff.	Community Development Division: City Engineering Department	The City Engineering Department provides direct or contract civil, structural, and mechanical engineering services, including contract, project, and construction management.
Engineer(s), project manager(s), technical staff, equipment operators, and maintenance and construction staff.	Community Development Division: Public Works Department	The Public Works Department is responsible for the maintenance and operation of a wide range of City equipment and facilities as well as providing assistance to members of the public. These include providing sufficient clean fresh water, reliable sewer services, street maintenance, storm drainage systems, street cleaning, street lights and traffic signals.

Table H-11. City of Madera, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Floodplain Administrator	City Engineer	Acting as the designated Floodplain Administrator, the City Engineer is responsible for reviewing and ensuring that new development proposals do not increase flood risk, and that new developments are not located below the 100 year flood level. In addition, the Floodplain Administrator is responsible for planning and managing flood risk reduction projects throughout the City.
Emergency Manager	Administrative Services Division: Human Resources Department	Maintains and updates the Emergency Operations Plan for the City. In addition, coordinates local response and relief activities within the Emergency Operation Center, and works closely with County, state, and federal partners to support planning and training and to provide information and coordinate assistance.
Procurement Services Manager	Administrative Services Division: Procurement Services	Provides a full range of municipal financial services, administers several licensing measures, and functions as the City's Procurement Services Manager. Utilizes three principal types of municipal debt obligations to finance long-term capital projects and the acquisition of select equipment.

Table H-12. City of Madera, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Local	General Fund	Department-specific	Program operations and specific projects.	Variable.
	General Obligation (GO) Bonds	Administrative Services Division: Finance Department	GO Bonds are appropriately used for the construction and/or acquisition of improvements to real property broadly available to residents and visitors. Such facilities include, but are not limited to, libraries, hospitals, parks, public safety facilities, and cultural and educational facilities.	The City Council holds a minimum of two public hearings prior to placing a GO bond measure on the ballot. Prior to any issuance of any new money or refunding general obligation bonds, the Council will approve, by majority vote, a resolution authorizing such issuance. All new money GO bonds issued by the City will be approved by two-thirds of the voters voting in the election. Outstanding general obligation bonded indebtedness cannot exceed 3 percent of the Assessed Valuation of taxable property within City's jurisdictional area.
	Lease Revenue Bonds	Administrative Services Division: Finance Department	Lease revenue bonds are used to finance capital projects that (1) have an identified budgetary stream for repayment (e.g., specified fees, tax receipts, etc.), (2) generate project revenue but rely on a broader pledge of general fund revenues to reduce borrowing costs, or (3) finance the acquisition and installation of equipment for the City's general governmental purposes.	The City Council holds a minimum of one public hearing to place the lease revenue bond measure on the ballot. Subsequent to successful passage and prior to any issuance of new money or refunding lease revenue bonds, the Council will approve, by majority vote, a resolution authorizing such issuance. All new money lease revenue bonds will be approved by 50 percent plus one of the voters voting in the election. No statutory restriction exists on the amount of Lease Revenue Bonds that can be outstanding at any given time.

Table H-12. City of Madera, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Local (cont)	Certificates of Participation (COPs)	Administrative Services Division: Finance Department	Used for acquisition of existing facilities and/or construction of new facilities that result, on a present value basis, in immediate or future savings in payments currently made or to be made by the City's general fund. For example, COPs may be used to provide funds to execute a lease purchase option for a facility whereby future savings accrue, on a net present value basis, to the general fund during the period for which the COPs and the obviated lease would be outstanding.	COPs may consist of lease financing agreements between the City and a for-profit lessor. All issuances of COPs shall be authorized by resolution of the City Council by majority vote. COPs are not subject to voter approval.
	Public-Private Partnerships	Various Departments, City Administrator	Includes the use of local professionals, business owners, residents, and civic groups and trade associations, generally for the study of issues and the development of guidance and recommendations.	Project-specific.
Federal	Hazard Mitigation Grant Program (HMGP)	Federal Emergency Management Agency (FEMA)	Supports pre- and post-disaster mitigation plans and projects.	Available to California communities after a Presidentially declared disaster has occurred in California. Grant award based on specific projects as they are identified by eligible applicants.
	Pre-Disaster Mitigation (PDM) grant program	FEMA	Supports pre-disaster mitigation plans and projects.	Available on an annual basis as a nationally competitive grant. Grant award based on specific projects as they are identified (no more than $3M federal share for projects).
	Flood Mitigation Assistance (FMA) grant program	FEMA	Mitigates repetitively flooded structures and infrastructure.	Available on an annual basis, distributed to California communities by the California Emergency Management Agency (Cal EMA). Grant award based on specific projects as they are identified.

Table H-12. City of Madera, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Federal (cont)	Assistance to Firefighters Grant (AFG) Program	FEMA/USFA (U.S. Fire Administration)	Provides equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards.	Available to fire departments and nonaffiliated emergency medical services providers. Grant awards based on specific projects as they are identified.
	Community Block Grant Program Entitlement Communities Grants	U.S. HUD (U.S. Department of Housing and Urban Development)	Acquisition of real property, relocation and demolition, rehabilitation of residential and non-residential structures, construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.	Available to entitled cities. Grant award based on specific projects as they are identified.
	Community Action for a Renewed Environment (CARE)	U.S. Environmental Protection Agency (EPA)	Through financial and technical assistance offers an innovative way for a community to organize and take action to reduce toxic pollution (i.e., stormwater) in its local environment. Through CARE, a community creates a partnership that implements solutions to reduce releases of toxic pollutants and minimize people's exposure to them.	Competitive grant program. Grant award based on specific projects as they are identified.
	Clean Water State Revolving Fund (CWSRF)	EPA	The CWSRF is a loan program that provides low-cost financing to eligible entities within state and tribal lands for water quality projects, including all types of non-point source, watershed protection or restoration, estuary management projects, and more traditional municipal wastewater treatment projects.	CWSRF programs provided more than $5 billion annually to fund water quality protection projects for wastewater treatment, non-point source pollution control, and watershed and estuary management.

Table H-12. City of Madera, Financial Resources for Hazard Mitigation

Type	Subtype	Administrator	Purpose	Amount/Availability
Federal (cont)	Public Health Emergency Preparedness (PHEP) Cooperative Agreement.	Department of Health and Human Services' (HHS') Centers for Disease Control and Prevention (CDC)	Funds are intended to upgrade state and local public health jurisdictions' preparedness and response to bioterrorism, outbreaks of infectious diseases, and other public health threats and emergencies.	Competitive grant program. Grant award based on specific projects as they are identified. Madera would participate through the County's Public Health Department.
	Homeland Security Preparedness Technical Assistance Program (HSPTAP)	FEMA/DHS	Build and sustain preparedness technical assistance activities in support of the four homeland security mission areas (prevention, protection, response, recovery) and homeland security program management.	Technical assistance services developed and delivered to state and local homeland security personnel. Grant award based on specific projects as they are identified.

Table H-13. City of Madera, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Plans	City of Madera, General Plan: Safety Element (2009)	Ref: Code of Ordinances, Title IX: Planning and Zoning.	Geologic Hazards (Seismic, Liquefaction, Subsidence), Hazardous Materials, Flooding, and Dam Inundation.	Mitigation & Preparedness	Yes
	City of Madera, Emergency Response Plan (updating 2010)	Describes what the City's actions will be during a response to an emergency. Includes annexes that describe in more detail the actions required of City's departments/agencies. Further, this plan describes the role of the Emergency Operation Center (EOC) and the coordination that occurs between the EOC and City's departments and other response agencies. Finally, this plan describes how the EOC serves as the focal point among local, state, and federal governments in times of disaster.	Same as above plus any emergency incidents demanding response.	Response	No
	Stormwater Quality Management Program (SWQMP) (2004)	Describes measures that the City will take to minimize stormwater pollution. The SWQMP is required by the National Pollutant Discharge Elimination System Phase II regulations, which became effective in March 2003.	Stormwater	Mitigation & Preparedness	Yes

Table H-13. City of Madera, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Policies	City Code of Ordinances	The purpose of this code is to establish the minimum requirements to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation and energy conservation, and safety to life and property from fire and other hazards attributed to the built environment; to regulate and control the demolition of all buildings and structures, and for related purposes. The principal Titles include: III: Public Safety (Emergency Services, Floodplain Management); VII: Public Works; IX: Building Regulations; and X: Planning and Zoning.	Seismic, Fire, Flood	Mitigation, Preparedness, and Response	Yes

Table H-14. City of Madera, Current, Ongoing, and Completed Hazard Mitigation Projects and Programs

Status	Critical Facilities, Major Utilities/Transportation Systems, Private Buildings	Description	Year(s)
Completed	Storm drain pipeline in Olive Ave. /Las Palmas basin excavation.	Install storm drainage pipe and excavate basin to reduce flooding in portions of downtown Madera.	2009

Table H-14. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
1	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such levee break, high and/or very high wildfire areas.	0	0	1	0	0	1
2	Integrate the 2010 LHMP, in particular the hazard analysis and mitigation strategy sections, into Madera County and the City of Madera's General Plan's Element update process.	1	1	0	0	0	2
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	0	0	1	1	0	2
4	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	0	0	1	1	0	2
5	Acquire, relocate, or elevate residential structures, in particular those that have been identified as RL properties, within the 100-year floodplain.	1	0	0	1	1	3

Table H-14. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
6	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	1	0	0	1	1	3
7	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.						
8	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide DFIRM, Community Assessment Visits, and/or DWR. (See #23)	1	1	1	0	0	3
9	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	1	0	0	1	1	3

Table H-14. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
10	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	0	0	1	0	0	1
11	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	0	0	1	0	0	1
12	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	0	0	1	1	0	2
13	Bolt down the roofs of critical facilities in order to prevent wind damage.	0	0	1	1	0	2
14	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	0	0	1	0	0	1

Table H-14. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
15	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	0	0	1	1	0	2
16	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	0	0	1	1	0	2
17	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes.	1	0	1	1	0	3
18	Work with DWR to determine dam inundation areas of unmapped dams within the county and neighboring counties that may affect Madera County.	1	0	1	1	0	3
19	Encourage property owners located in the levee break hazard areas to purchase voluntary flood insurance.	1	0	1	0	0	2

Table H-14. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
20	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths ≥ 3-feet.	0	0	0	1	0	1
21	Purchase land and create a drainage basin for the Southeast Madera Plan (SMP) area for expected 1,000 homes in 100-year floodplain.	1	1	1	1	1	5
22	Provide stormwater drainage improvements to reduce frequent flooding, such as downtown stormwater drains, basins, trunk lines, auxiliary pipes, and interconnections.	1	1	1	1	1	5
23	Using "HECRAZ," analyses, update 100-year floodplain for Fresno River per earlier FEMA recommendation.	1	1	1	1	1	5
24	Mitigate potential damage to two bridges crossing the Fresno River due to scouring of piles and piers, leaving them exposed.	1	1	1	1	1	5

Table H-15. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
1	Purchase land and create a drainage basin for the Southeast Madera Plan (SMP) area for expected 1,000 homes in 100-year floodplain.	Large planned development	City Engineer and Public Works	PDM/HMGP	2 years
2	Provide stormwater drainage improvements to reduce frequent flooding, such as downtown stormwater drains, basins, trunk lines, auxiliary pipes, and interconnections.	Downtown commercial area and various older neighborhoods	City Engineer and Public Works	PDM/HMGP	3-5 years
3	Using "HECRAZ," analyses, update 100-year floodplain for Fresno River per earlier FEMA recommendation.	All within 100 year floodplain	City Engineer and Public Works	PDM/HMGP	1-2 years
4	Mitigate potential damage to two bridges crossing the Fresno River due to scouring of piles and piers, leaving them exposed.	Bridges at North Schnoor Avenue and Granada Drive.	City Engineer and Public Works	PDM/HMGP	2-3 years

Appendix I – North Fork Rancheria

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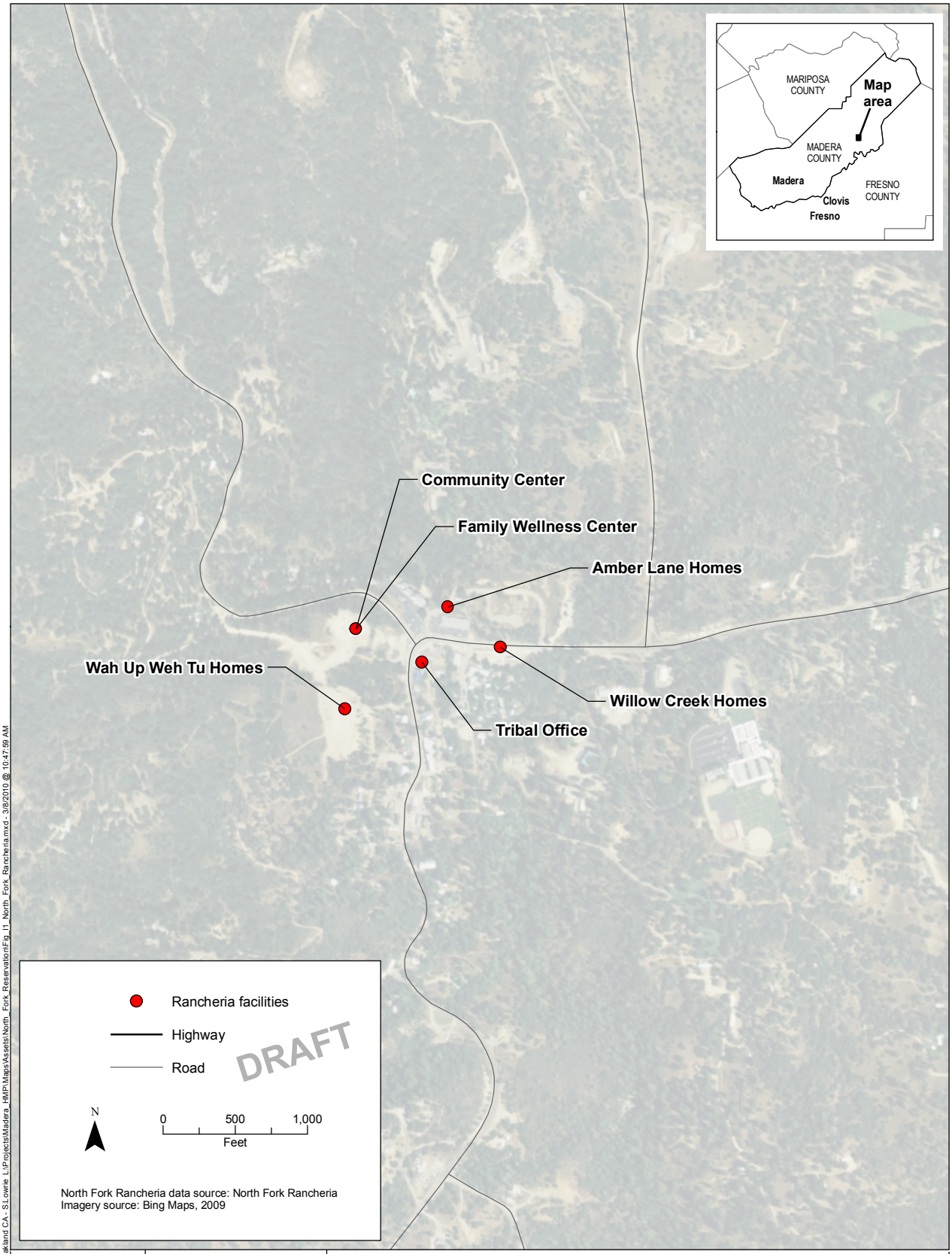

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Madera County Local Hazard Mitigation Plan

Figure I-1
North Fork Rancheria of Mono Indians

Table I-1. North Fork Rancheria, Total Assets

Facility	Address	City	Structural Value ($)
Tribal Office	33143 Road 222	North Fork	1,128,701
Community Center	56094 Kunugib Rd.	North Fork	620,266
Family Wellness Center	56094 Kunugib Rd.	North Fork	600,000
Amber Lane Homes	57030 and 57031 Amber Lane	North Fork	280,884
Willow Creek Homes	57128 Road 225	North Fork	400,000
Wah Up Weh Tu Homes	32890 and 32899 Wah Up Way	North Fork	750,000

Table I-2. North Fork Rancheria, Seismic Hazard Vulnerability Analysis

Facility	Structural Value	Hazard Area: Perceived Shaking
Tribal Office	$1,128,701	Light
Community Center	$620,266	Light
Family Wellness Center	$600,000	Light
Amber Lane Homes	$280,884	Light
Willow Creek Homes	$400,000	Light
Wah Up Weh Tu Homes	$750,000	Light

Table I-3. North Fork Rancheria, Severe Wind Hazard Vulnerability Analysis

Facility	Structural Value	Hazard Area: Peak Wind Gusts > 50 MPH, Annual Mean Occurrence (days)
Tribal Office	$1,128,701	31-40
Community Center	$620,266	31-40
Family Wellness Center	$600,000	31-40
Amber Lane Homes	$280,884	31-40
Willow Creek Homes	$400,000	31-40
Wah Up Weh Tu Homes	$750,000	31-40

MPH = miles per hour

Table I-4. North Fork Rancheria, Winter Storm Hazard Vulnerability Analysis

Facility	Structural Value	Hazard Area: Mean Annual Snowfall
Tribal Office	$1,128,701	Low: 1.00-23.99
Community Center	$620,266	Low: 1.00-23.99
Family Wellness Center	$600,000	Low: 1.00-23.99
Amber Lane Homes	$280,884	Low: 1.00-23.99
Willow Creek Homes	$400,000	Low: 1.00-23.99
Wah Up Weh Tu Homes	$750,000	Low: 1.00-23.99

Table I-5. North Fork Rancheria, Wildfire Hazard Vulnerability Analysis

Facility	Structural Value	Hazard Area: SRA Fire Hazard Severity Zone
Tribal Office	$1,128,701	Moderate
Community Center	$620,266	Moderate
Family Wellness Center	$600,000	Moderate
Amber Lane Homes	$280,884	Moderate
Willow Creek Homes	$400,000	Moderate
Wah Up Weh Tu Homes	$750,000	Moderate

SRA = State Responsibility Area

Table I-6. North Fork Rancheria, Overall Summary of Total Assets at Risk

Hazard	Hazard Area	No. of Facilities	% of Facilities	Total Structural Value ($)
Seismic Hazard	Perceived Shaking: Light	6	100	3,779,851
Severe Wind Hazard	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 31-40	6	100	3,779,851
Winter Storm Hazard	Mean Annual Snowfall (in.): Low (1.00-23.99)	6	100	3,779,851
Wildfire Hazard	SRA Fire Hazard Severity Zone: Moderate	6	100	3,779,851

Table I-7. North Fork Rancheria, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Planner	Tribal Council	Oversees land development, land management practices, and all programs related to human-caused and natural hazards
Housing Manager	Indian Housing Authority	Manages construction and repair of Tribal homes and infrastructure
Environmental Manager	Environmental Protection Department	Manages all natural resources within the Reservation
Police Officer	Tribal Council/Tribal Administrator	Implements response and recovery efforts after the occurrence of human-caused and natural hazards
Grants Officer	Tribal Chairperson	Manages grant applications and project budgets for all Tribal programs
Public Information Officer	Tribal Council/Tribal Administrator	Maintain contacts with Tribal members and the public on all issues related to human-caused and natural hazards
Public Works Officer	Tribal Council	Repairs and maintains Tribal infrastructure and facilities

Table I-8. North Fork Rancheria, Financial Resources for Hazard Mitigation

Type	Sub-Type	Administrator	Purpose	Amount/Availability
Tribal	General Fund	Department specific	Program operations and specific projects	Limited to no availability
Federal	Hazard Mitigation Grant Program	Federal Emergency Management Agency (FEMA)	Support pre- and post-disaster mitigation plans and projects.	Grant award based on specific projects as they are identified.
	Assistance to Firefighters Grant Program	FEMA/U.S. Fire Administration	Provide equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards.	Available to fire departments and non-affiliated emergency medical services. Grant award based on specific projects as they are identified.
	Community Block Grant Program Entitlement Communities Grants	U.S. Department of Housing and Urban Development (USHUD)	Acquisition of real property, relocation/demolition, rehabilitation of residential and non-residential structures, construction of public facilities, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.	Available to entitled communities. Grant award based on specific projects as they are identified.
	Indian Community Development Block Grant Program	USHUD	Provide critical housing and community development resources to aid disaster recovery.	Available to entitled tribes. Grant award based on specific projects as they are identified.
	Imminent Threat, Indian Community Development Block Grant Program	USHUD	Alleviate or remove imminent threats to health or safety (e.g., drought).	Available to entitled tribes. Grant award based on specific projects as they are identified.
	Indian Reservation Roads Transportation Funding	Federal Highway Administration	Construct and improve roads, bridges, and transit facilities leading to, and within, Indian reservations or other Indian lands to provide safe access through hazard-prone areas.	Available to entitled tribes. Grant award based on specific projects as they are identified.

Table I-8. North Fork Rancheria, Financial Resources for Hazard Mitigation

Type	Sub-Type	Administrator	Purpose	Amount/Availability
Federal (cont)	Administration for Native Americans Grant Programs	U.S. Department of Health and Human Services	Fund a variety of environmental management programs, including the identification and assessment of human-caused and natural hazards and their associated risks and the development and implementation of plans, policies, and ordinances.	Available to entitled tribes. Grant award based on specific projects as they are identified.
	Clean Water State Revolving Fund	U.S. Environmental Protection Agency (EPA)	Fund water quality projects, including all types of nonpoint source projects, watershed protection or restoration projects, estuary management projects, and more traditional municipal wastewater treatment projects.	Available to entitled communities. Grant award based on specific projects as they are identified. Provides more than $5 billion annually.
	Aid to Tribal Governments	Bureau of Indian Affairs (BIA)	Support general Tribal government operations, maintain up-to-date Tribal enrollment, conduct Tribal elections, and develop appropriate Tribal policies, legislation, and regulations.	Available to entitled tribes. Grant award based on specific projects as they are identified.
	Community Action for a Renewed Environment	EPA	Fund the removal or reduction of toxic pollution (e.g., storm water).	Competitive grant program. Grant award based on specific projects as they are identified.
Private	Lindbergh Grants Program	Lindbergh Foundation	Balance the advance of technology and the preservation of the natural/human environment. Can be used for conservation of natural resources (e.g., sustainable development codes) and public outreach/education projects.	Available to entitled communities. Grant award of $10,580 is allocated to specific projects as they are identified.

Table I-9. North Fork Rancheria, Legal and Regulatory Resources for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Plans	(None for Tribe)[1]				
	California State Enhanced Hazard Mitigation Plan	Profiles human-caused and natural hazards throughout California, assesses the risk posed by each hazard, and outlines potential mitigation actions	All	Mitigation	No
Policies	Bureau of Indian Affairs Housing Codes	Requires Tribal housing to comply with certain standards regarding seismic stability and ability to withstand flooding	Flood, Earthquake	All	Yes
Programs	Madera County building, fire and life safety codes	Tribe follows prevailing county codes, including on-site inspection, for new construction (e.g., housing, community center).	All	Mitigation	Yes

[1] Tribal Government is new within last several years. The mitigation planning process is one of the first such projects in which the Tribe has participated.

Table I-10. North Fork Rancheria, Current, Ongoing, and Completed Hazard Mitigation Projects and Programs

Status	Critical Facilities, Major Utilities/Transportation Systems, Private Buildings	Description	Year(s)
Current	New housing	Planning completed; next phase includes drainage, infrastructure, and road improvements, paying particular attention to potential erosion problems.	2008-12
Completed	Community Center	Conformed to prevailing county fire and life safety codes and inspections	2005

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
1	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such levee break, high and/or very high wildfire areas.	**0**	**0**	**1**	**1**	**1**	**3**
2	Integrate the 2010 LHMP, in particular the hazard analysis and mitigation strategy sections, into Madera County and the City of Madera's General Plan's Element update process.	**0**	**0**	**1**	**1**	**1**	**3**
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	**1**	**0**	**0**	**1**	**0**	**2**
4	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	**1**	**1**	**1**	**1**	**0**	**4**
5	Acquire, relocate, or elevate residential structures, in particular those that have been identified as RL properties, within the 100-year floodplain.	**0**	**0**	**1**	**1**	**1**	**3**

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
6	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	**0**	**0**	**0**	**1**	**1**	**2**
7	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	**0**	**0**	**1**	**1**	**1**	**3**
8	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide DFIRM, Community Assessment Visits, and/or DWR.	**0**	**0**	**1**	**1**	**1**	**3**
9	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	**0**	**0**	**1**	**1**	**1**	**3**
10	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	**1**	**0**	**1**	**0**	**1**	**3**

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
11	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	**0**	**0**	**1**	**1**	**1**	**3**
12	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	**1**	**1**	**1**	**1**	**1**	**5**
13	Bolt down the roofs of critical facilities in order to prevent wind damage.	**0**	**0**	**1**	**1**	**1**	**3**
14	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	**0**	**0**	**0**	**1**	**1**	**2**
15	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	**0**	**0**	**0**	**1**	**0**	**1**

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
16	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	**1**	**1**	**1**	**1**	**1**	**5**
17	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes.	**1**	**1**	**1**	**1**	**1**	**5**
18	Work with DWR to determine dam inundation areas of unmapped dams within the county and neighboring counties that may affect Madera County.	**0**	**0**	**1**	**1**	**0**	**2**
19	Encourage property owners located in the levee break hazard areas to purchase voluntary flood insurance.	**1**	**0**	**1**	**1**	**0**	**3**
20	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths $\geq$ 3-feet.	**0**	**0**	**1**	**1**	**1**	**3**

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
21	Provide seismic retrofit to existing water tanks and systems or a new engineered water system serving both fire suppression and domestic water needs. Manage vegetation in areas within and adjacent to the access routes to water tanks and distribution systems within SRA/WUI areas. Reduce potential wildfire extension to these critical facilities.	**1**	**0**	**0**	**1**	**1**	**3**
22	Design and implement a multihazard public awareness/education/outreach program addressing mitigation actions for high risk hazards (e.g., flood, wildfire)	**1**	**1**	**1**	**0**	**0**	**3**
22	In cooperation with other organizations, complete a fire break around the foothills communities and tribal lands.	**1**	**1**	**1**	**1**	**1**	**5**
23	Given limited access to the North Fork area, prepare and distribute an evacuation plan and supporting instructions to tribal and foothill residents.	**1**	**1**	**1**	**0**	**0**	**3**

Table I-11. Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
24	Using the LHMP's data and in cooperation with other organizations, help produce and disseminate a series of "What Next-What If" pamphlets throughout the county, including tribal citizens, that emphasizes mitigation measures, resources, and contacts.	**1**	**1**	**1**	**1**	**1**	**5**

Table I-12. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
1	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	Existing and future dwellings and other structures on tribal lands	Tribal Council	LHMP/PDM	2-5 years
2	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	Many dwellings and other structures on tribal lands	Tribal Council	LHMP/PDM	1-2 years
3	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone on tribal lands.	Many dwellings and other structures on tribal lands	Tribal Council	LHMP/PDM	1-3 years
4	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes on tribal lands	Many dwellings and other structures on tribal lands	Tribal Council	LHMP/PDM	1-3 years

Table I-12. Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
5	In cooperation with other organizations, complete a fire break around the foothills communities and tribal lands.	Communities, tribal lands, commercial and residential structures, including tourist facilities	Tribal Council	HMGP/PDM	5 years
6	Using the LHMP's data and in cooperation with other organizations, help produce and disseminate a series of "What Next-What If" pamphlets throughout the county, including tribal citizens, that emphasizes mitigation measures, resources, and contacts.	Self-help oriented, and for use throughout the county, this could result in numerous mitigation actions	Tribal Council	HMGP/PDM	2-3 years

Appendix J – Madera County Office of Education

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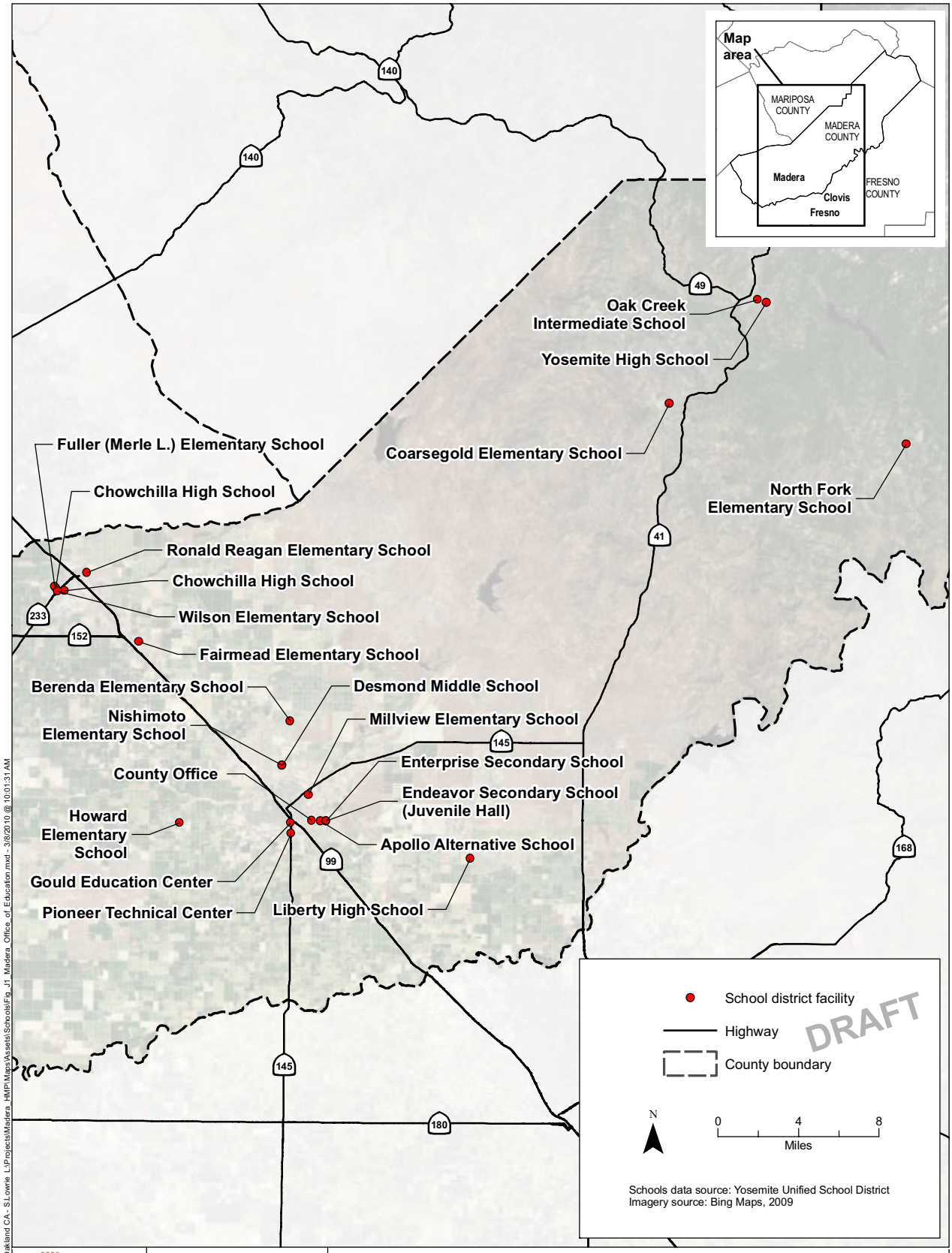

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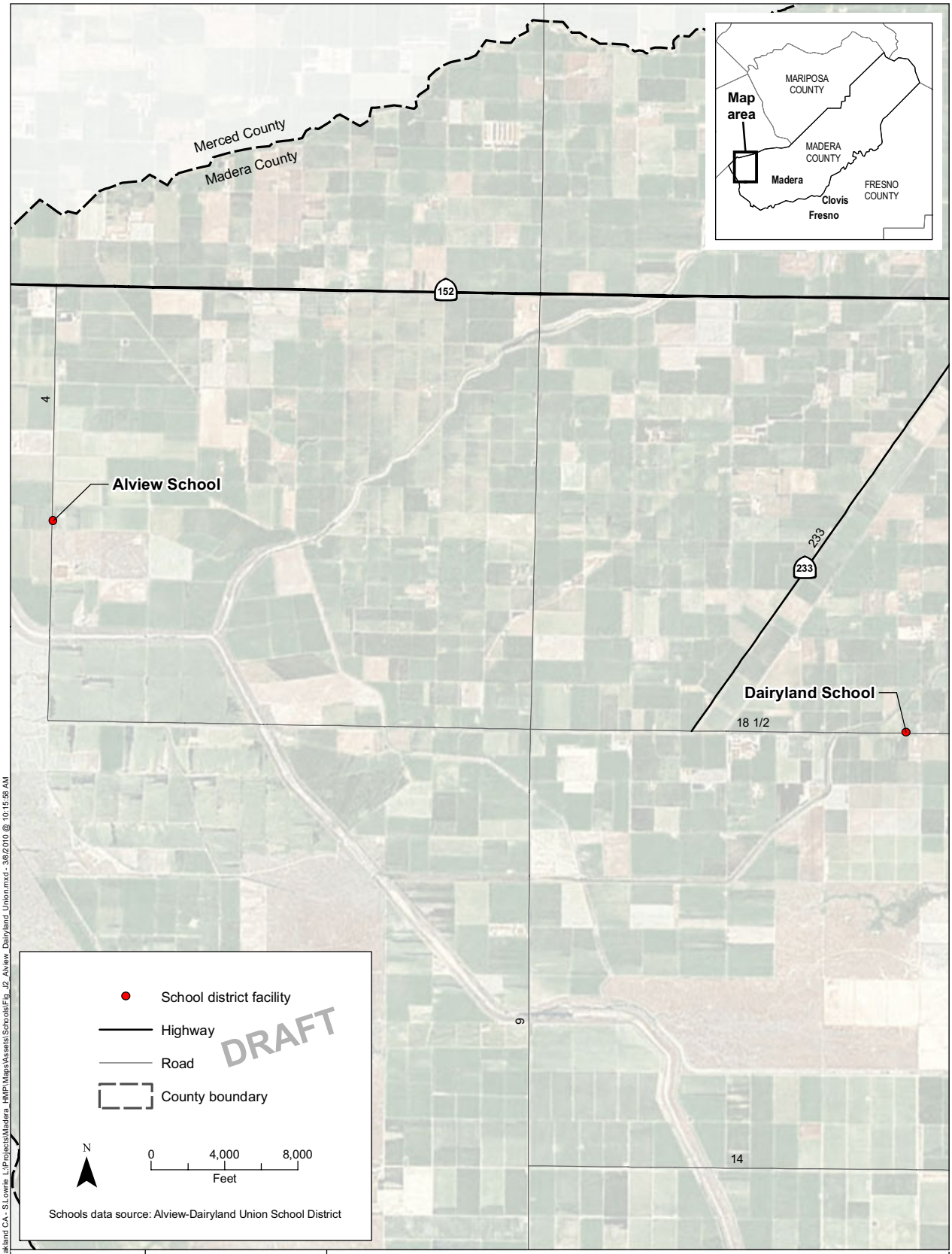
Madera County Local Hazard Mitigation Plan

Figure J-1
Madera County Office of Education



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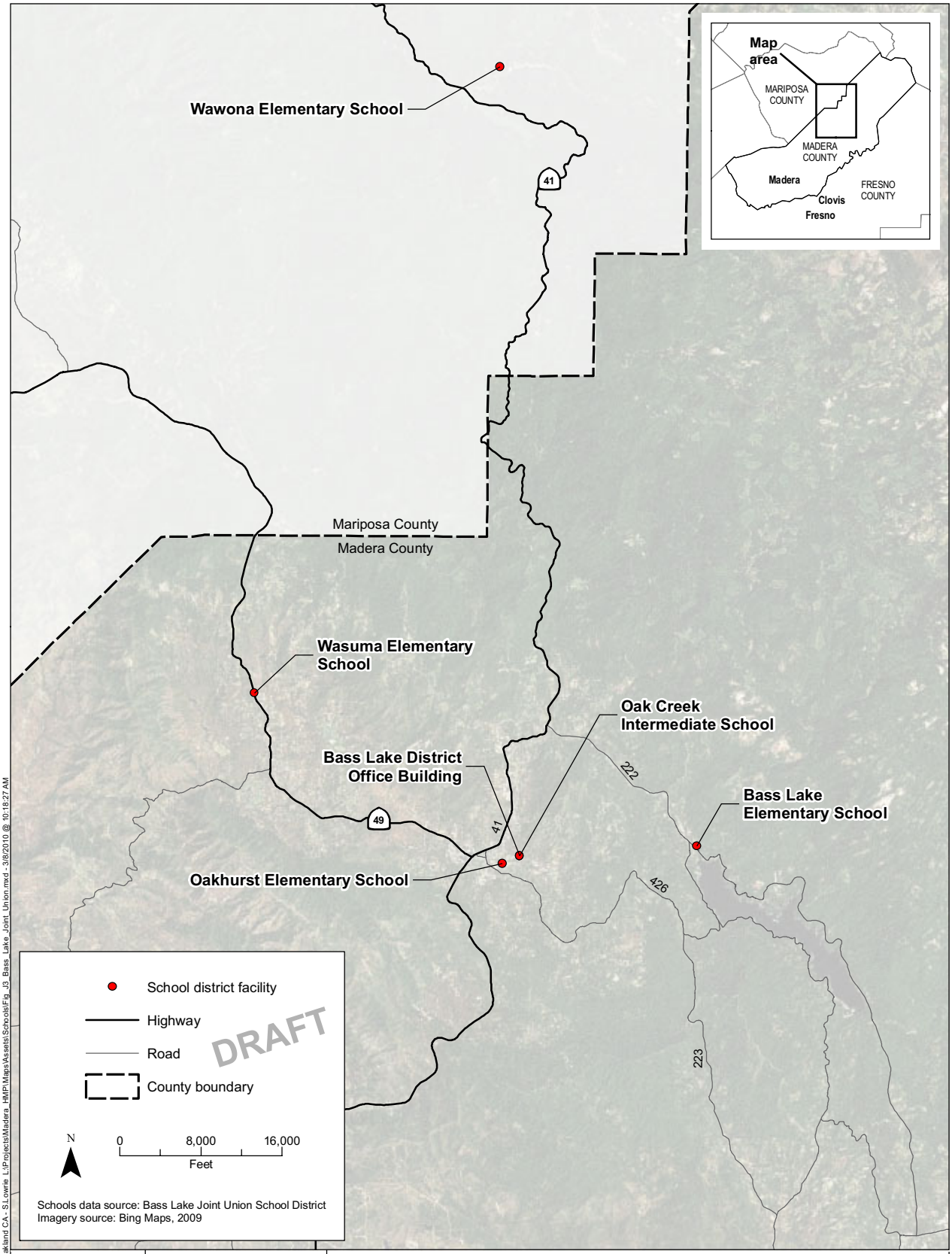
Madera County Local Hazard Mitigation Plan

Figure J-2
Alview-Dairyland Union School District



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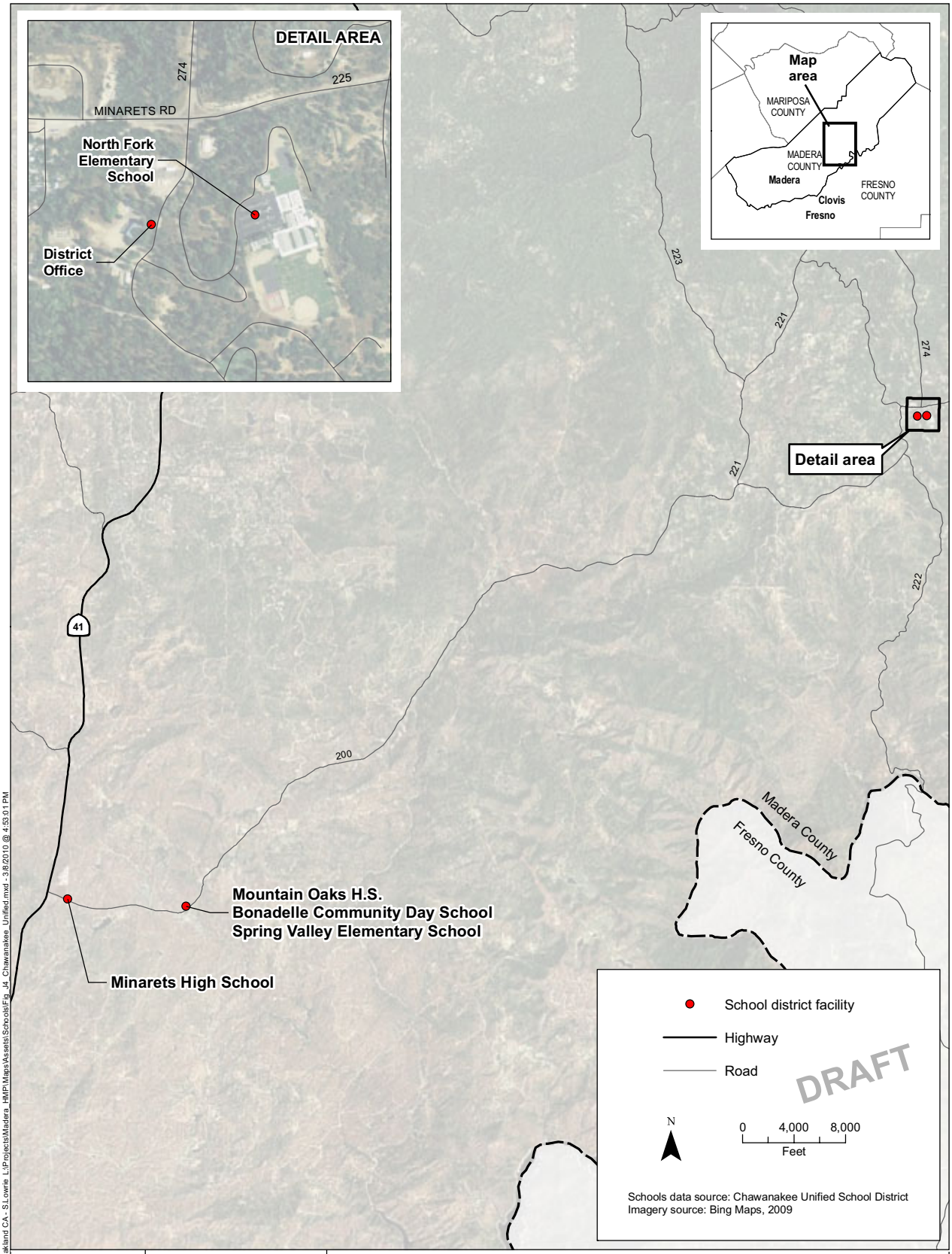
Madera County Local Hazard Mitigation Plan

Figure J-3
Bass Lake Joint Union Elementary School District



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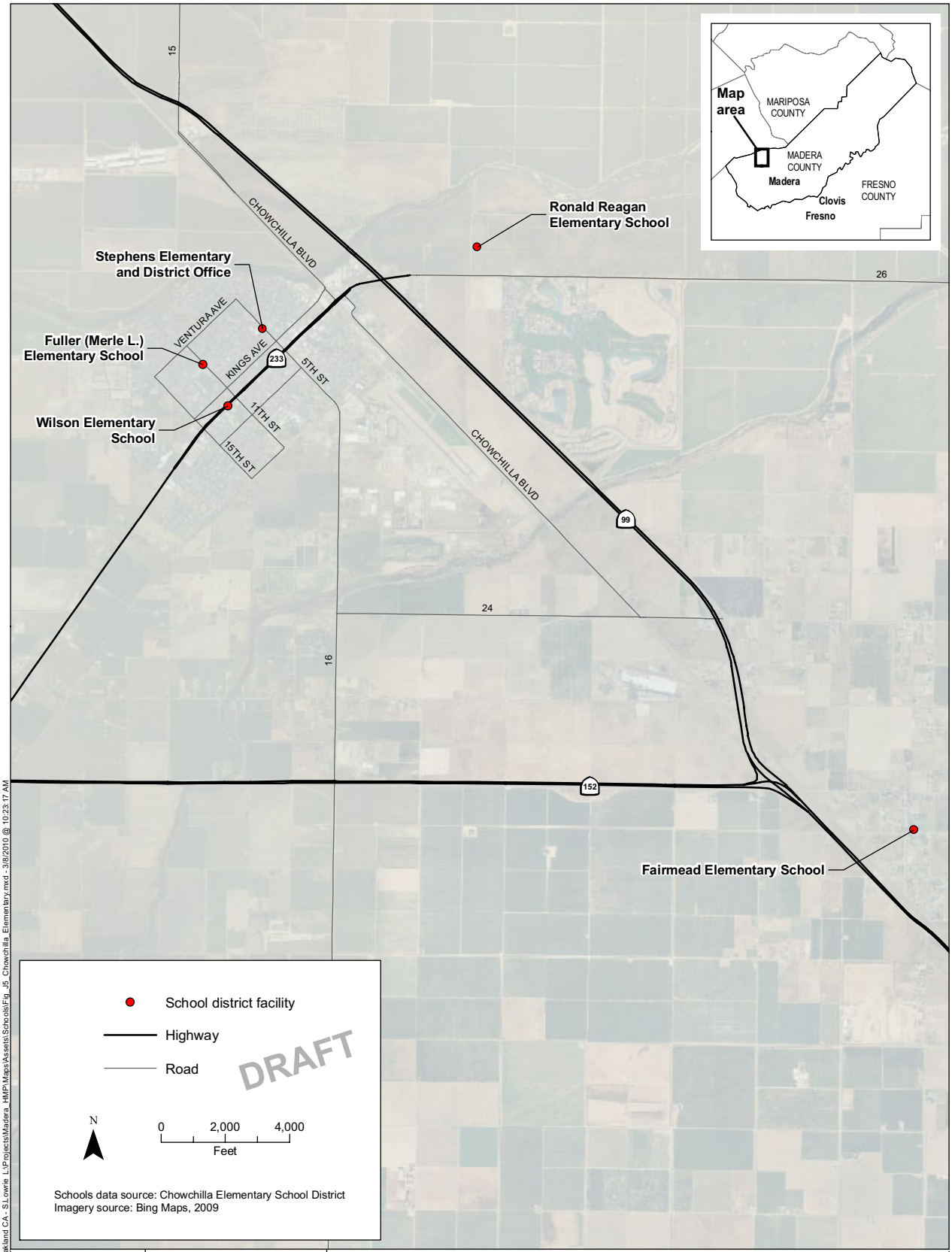
Madera County Local Hazard Mitigation Plan

Figure J-4
Chawanakee Unified School District



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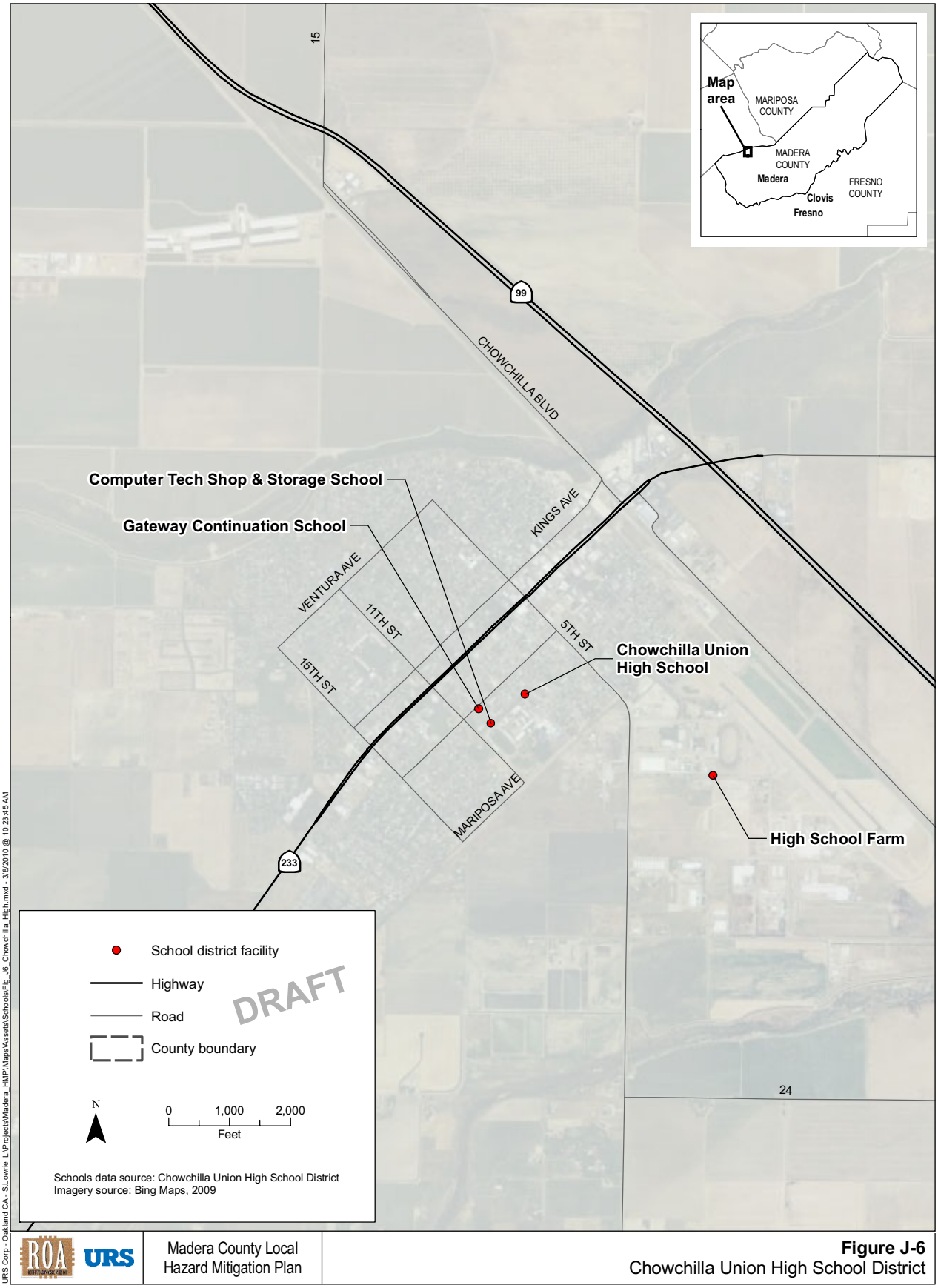
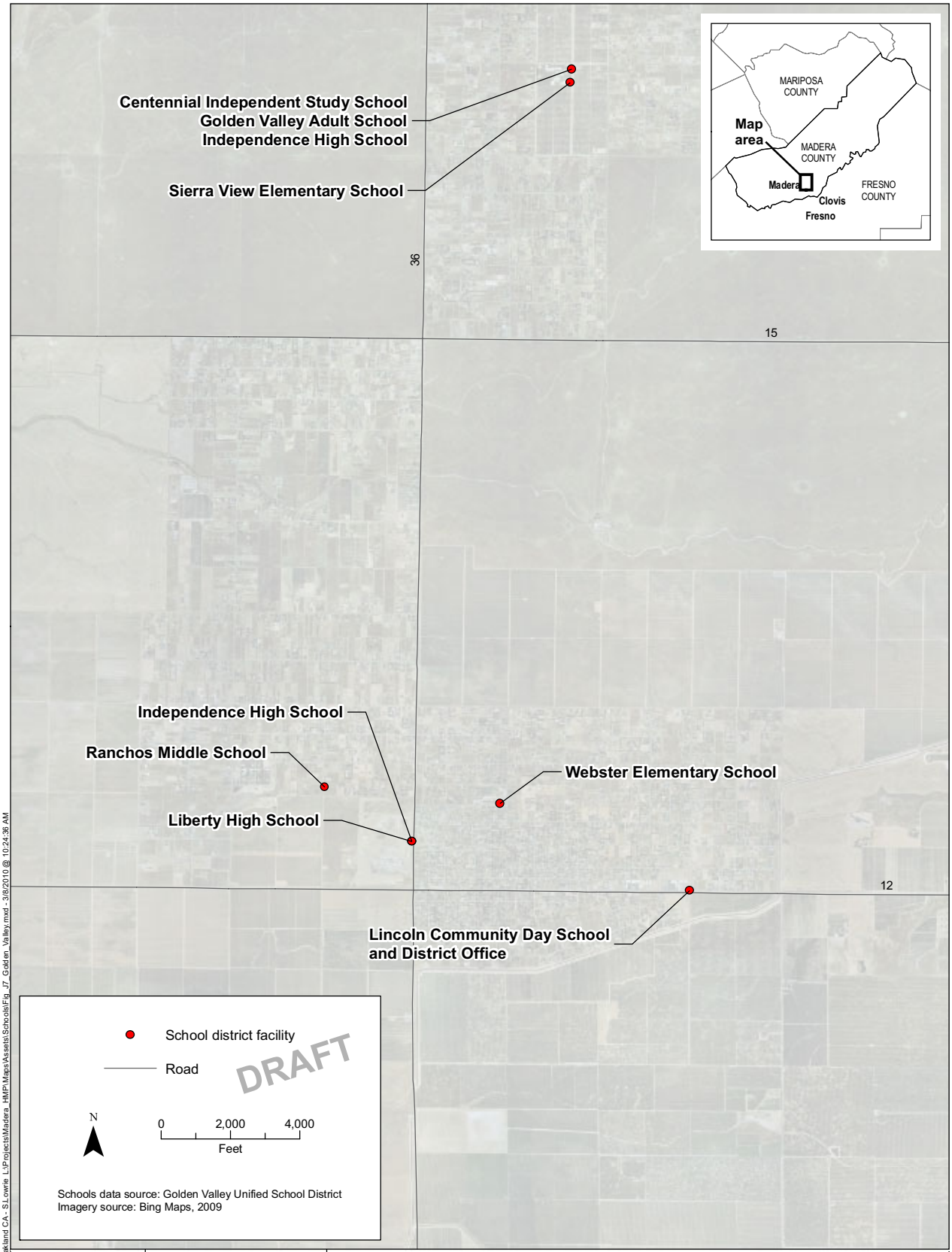
Madera County Local Hazard Mitigation Plan

Figure J-5
Chowchilla Elementary School District



Madera County Local Hazard Mitigation Plan

Figure J-6
Chowchilla Union High School District



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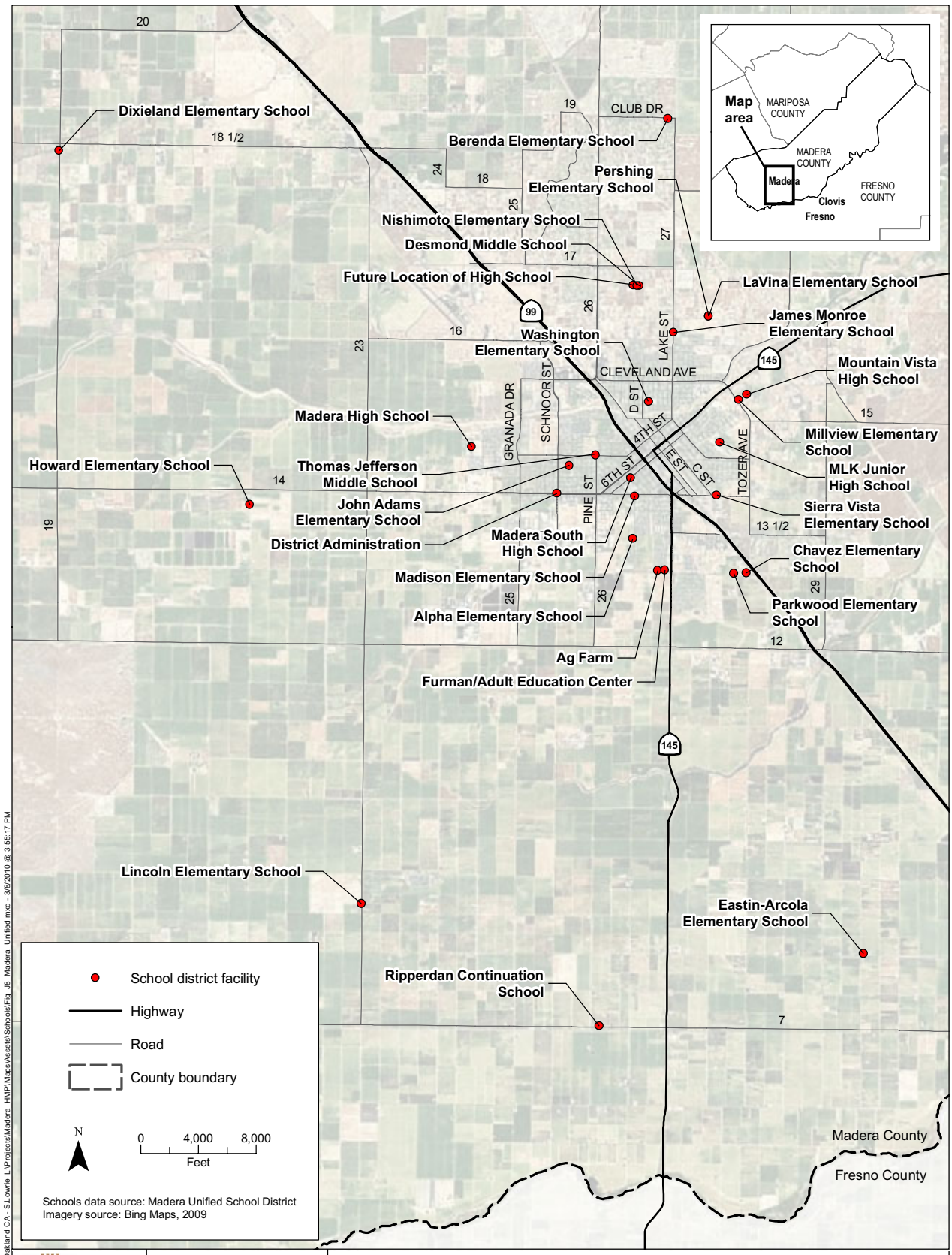
Madera County Local Hazard Mitigation Plan

Figure J-7
Golden Valley Unified School District



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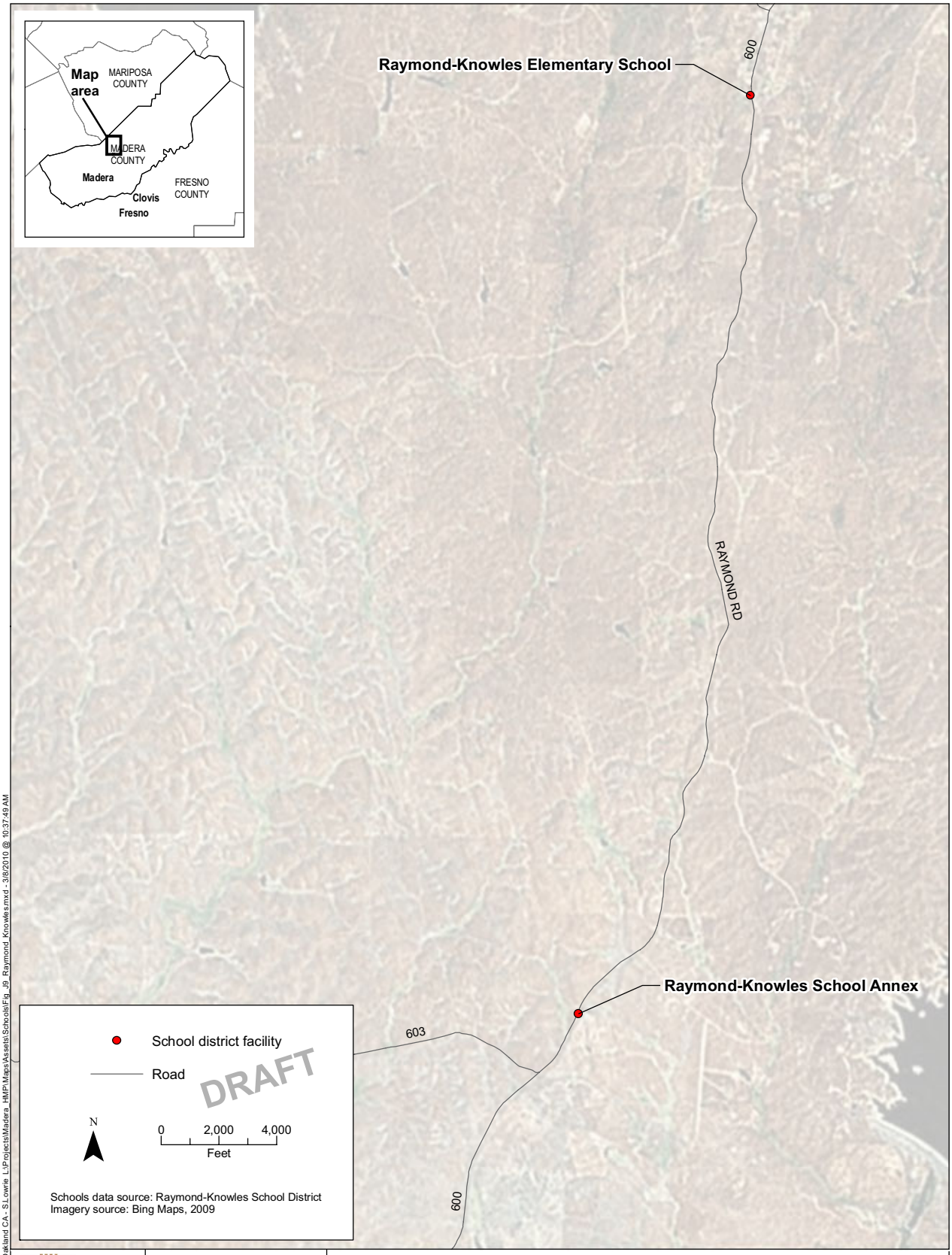
Madera County Local Hazard Mitigation Plan

Figure J-8
Madera Unified School District



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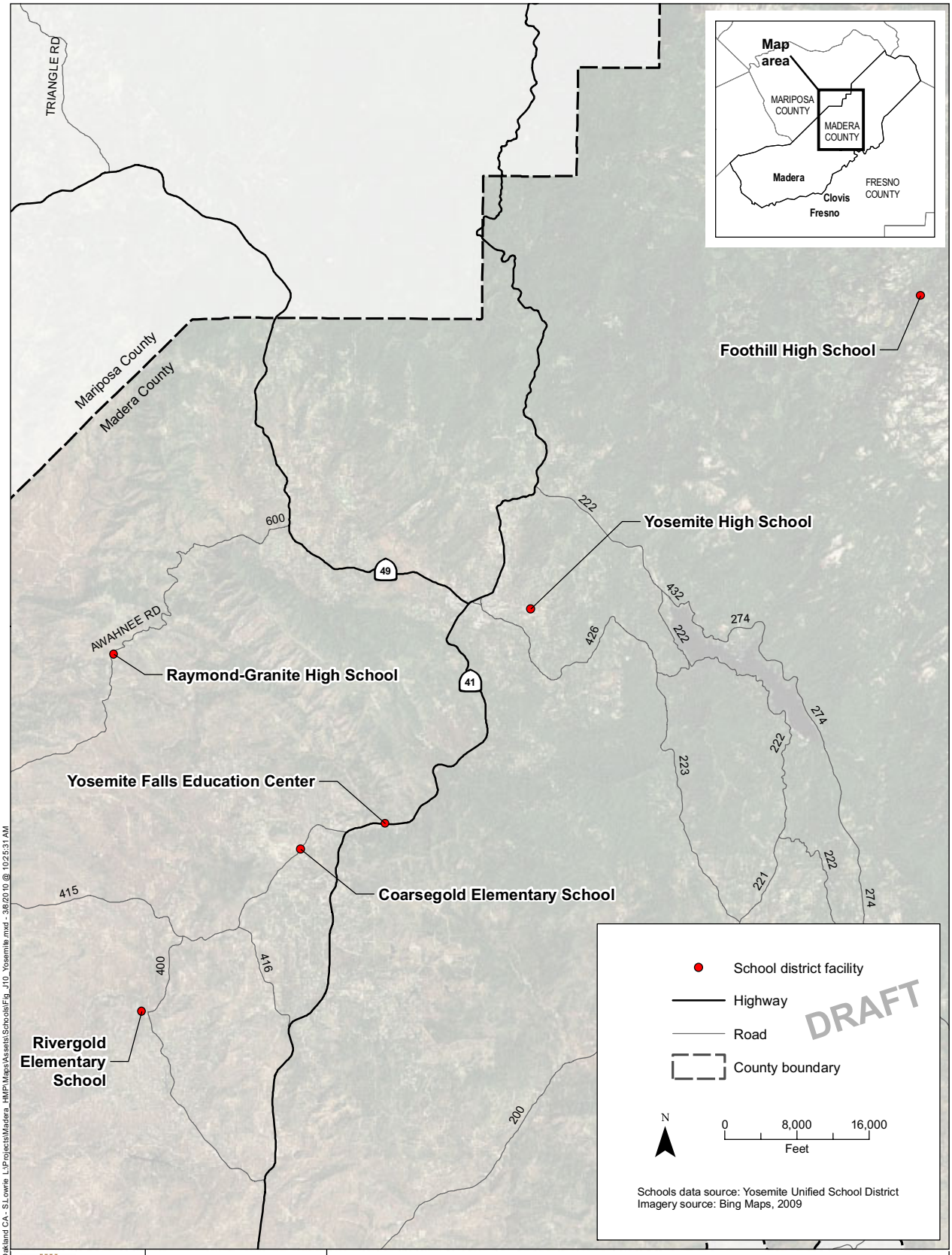
Madera County Local Hazard Mitigation Plan

Figure J-9
Raymond-Knowles Union Elementary School District



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Madera County Local Hazard Mitigation Plan

Figure J-10
Yosemite Unified School District

Table J-1. Madera County Office of Education, Total Assets

School District	Facility	Address	City	Structural Value ($)
Alview Dairyland SD	Alview School	20513 Road 4	Chowchilla	3,814,833
Alview Dairyland SD	Dairyland School	12861 Avenue 18-1/2	Chowchilla	2,339,057
Bass Lake Joint Union ESD	Bass Lake District Office Bldg	40096 Indian Spgs Road	Oakhurst	265,267
Bass Lake Joint Union ESD	Bass Lake Elementary School	40356 Road 331	Bass Lake	2,614,953
Bass Lake Joint Union ESD	Oak Creek Intermediate School	40094 Indian Spgs Road	Oakhurst	5,433,341
Bass Lake Joint Union ESD	Oakhurst Elementary School	49495 Road 427	Oakhurst	4,123,151
Bass Lake Joint Union ESD	Wasuma Elementary School	43109 Highway 49	Ahwahnee	4,298,984
Bass Lake Joint Union ESD	Wawona Elementary School	7925 Chilnualna Falls Road	Wawona	1,114,812
Chawanakee USD	District Office	33030 Road 228	North Fork	157,997
Chawanakee USD	Minarets High School Site	47037 Road 201	O'Neals	18,488,316
Chawanakee USD	Mountain Oaks H.S./Bonadelle Community Day School/Spring Valley Elementary School	46655 Road 200	O'Neals	2,539,009
Chawanakee USD	North Fork Elementary School	33087 Road 228	North Fork	8,650,774
Chowchilla ESD	Fairmead Elementary School	19421 Avenue 22 3/4	Chowchilla	4,695,272
Chowchilla ESD	Fuller (Merle L.) Elementary School	1101 Monterey Avenue	Chowchilla	6,308,257
Chowchilla ESD	Ronald Reagan Elementary School	2200 South Lake Tahoe Drive	Chowchilla	11,497,720
Chowchilla ESD	Stephens Elementary & District Office	355 North Fifth Street	Chowchilla	3,982,820
Chowchilla ESD	Wilson Elementary School	1209 Robertson Blvd.	Chowchilla	9,777,117
Chowchilla Union HSD	Chowchilla Union High School	805 Humboldt Avenue	Chowchilla	27,765,749
Chowchilla Union HSD	Computer Tech Shop & Storage School	1020 Humboldt Avenue	Chowchilla	161,408

Table J-1. Madera County Office of Education, Total Assets

School District	Facility	Address	City	Structural Value ($)
Chowchilla Union HSD	Gateway Continuation School	1013 Orange Ave	Chowchilla	319,304
Chowchilla Union HSD	High School Farm School	16255 Avenue 25	Chowchilla	67,292
Golden Valley USD	Centennial Independent Study/ Golden Valley Adult/Independence High School	16362 Paula Road	Madera	620,071
Golden Valley USD	District Office/Lincoln Community Day School	37479 Avenue 12	Madera	1,368,659
Golden Valley USD	Independence High School	12220 Road 36	Madera	1,370,754
Golden Valley USD	Liberty High School	12220 Road 36	Madera	23,520,447
Golden Valley USD	Ranchos Middle School	12455 Road 35 1/2	Madera	14,257,199
Golden Valley USD	Sierra View Elementary School	16436 Paula Road	Madera	4,752,135
Golden Valley USD	Webster Elementary School	36477 Ruth Avenue	Madera	6,707,561
Madera County Office of Education	Apollo School	28198 Avenue 14	Madera	645,580
Madera County Office of Education	Berenda School (1 building)	26820 Club Drive	Madera	2,273,952
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	345 S. 11th Street	Chowchilla	386,000
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	805 Humboldt Avenue	Chowchilla	123,750
Madera County Office of Education	Coarsegold Elementary School (1 building)	45426 Road 415	Coarsegold	948,972
Madera County Office of Education	County Office	28123 Avenue 14	Madera	3,666,624
Madera County Office of Education	Desmond School (1 building)	26490 Martin Street	Madera	884,000
Madera County Office of Education	Enterprise School	28261 Avenue 14	Madera	1,632,088

Table J-1. Madera County Office of Education, Total Assets

School District	Facility	Address	City	Structural Value ($)
Madera County Office of Education	Fairmead School (1 building)	19421 Avenue 22 ¾	Chowchilla	56,928
Madera County Office of Education	Fuller School (2 buildings)	1101 Monterey Avenue	Chowchilla	116,832
Madera County Office of Education	Gould School	117 W. Dunham	Madera	2,446,636
Madera County Office of Education	Howard School (1 building)	13878 Road 21 1/2	Madera	388,600
Madera County Office of Education	Juvenile Hall (1 building)	28261 Avenue 14	Madera	52,680
Madera County Office of Education	Liberty School (1 building)	12220 Road 36	Madera	852,800
Madera County Office of Education	Millview School (2 buildings)	1609 Clinton Street	Madera	748,200
Madera County Office of Education	Nishimoto School (1 building)	26460 Martin Street	Madera	884,000
Madera County Office of Education	North Fork School (1 building)	33087 Road 228	North Fork	131,700
Madera County Office of Education	Oak Creek School (1 building)	40094 Indian Springs Road	Oakhurst	149,760
Madera County Office of Education	Pioneer Technical Center	1025 S. Madera Avenue	Madera	2,164,348
Madera County Office of Education	Ronald Reagan School (1 building)	2200 S. Lake Tahoe Drive	Chowchilla	108,560
Madera County Office of Education	Wilson School (2 buildings)	1209 Robertson Blvd.	Chowchilla	112,248
Madera County Office of Education	Yosemite High School (2 buildings)	50200 Road 427	Oakhurst	1,844,456
Madera USD	Ag Farm	705 W. Pecan Avenue	Madera	949,177
Madera USD	Alpha Elementary School	900 Stadium Road	Madera	5,856,301
Madera USD	Berenda Elementary School	26820 Club Drive	Madera	6,806,412

Table J-1. Madera County Office of Education, Total Assets

School District	Facility	Address	City	Structural Value ($)
Madera USD	Chavez Elementary School	2600 East Pecan Avenue	Madera	10,497,473
Madera USD	Desmond Middle School	26490 Martin Street	Madera	18,004,265
Madera USD	District Administration	1902 Howard Road	Madera	3,366,618
Madera USD	Dixieland Elementary School	18440 Road 19	Madera	2,797,963
Madera USD	Eastin-Arcola Elementary School	29551 Avenue 8	Madera	6,224,293
Madera USD	Furman/Adult Education Center	955 W. Pecan Avenue	Madera	1,546,284
Madera USD	Future Location of High School	26238 Martin Street	Madera	111,470
Madera USD	Howard Elementary School	13878 Road 21-1/2	Madera	4,045,344
Madera USD	James Monroe Elementary School	1819 North Lake St	Madera	6,407,514
Madera USD	John Adams Elementary School	1822 National Avenue	Madera	6,045,263
Madera USD	LaVina Elementary School	8594 Road 23	Madera	4,320,746
Madera USD	Lincoln Elementary School	650 Liberty Lane	Madera	8,523,509
Madera USD	Madera High School	200 South L Street	Madera	32,648,221
Madera USD	Madera South High School	705 W. Pecan Avenue	Madera	64,287,141
Madera USD	Madison Elementary School	109 Stadium Road	Madera	6,079,100
Madera USD	Millview Elementary School	1609 Clinton Street	Madera	6,489,767
Madera USD	MLK Junior High School	601 Lilly Street	Madera	13,126,826
Madera USD	Mountain Vista High School	1901 Clinton Street	Madera	482,826
Madera USD	Nishimoto Elementary School	26460 Martin Street	Madera	9,726,938
Madera USD	Parkwood Elementary School	1150 E. Pecan Avenue	Madera	10,491,963
Madera USD	Pershing Elementary School	1505 E. Ellis Street	Madera	10,811,561
Madera USD	Ripperdan Continuation School	26133 Avenue 7	Madera	3,120,523

Table J-1. Madera County Office of Education, Total Assets

School District	Facility	Address	City	Structural Value ($)
Madera USD	Sierra Vista Elementary School	917 East Olive Avenue	Madera	6,940,483
Madera USD	Stadium Complex	200 South L Street	Madera	2,527,151
Madera USD	Thomas Jefferson Middle School	1407 Sunset Avenue	Madera	12,649,956
Madera USD	Washington Elementary School	509 South Street	Madera	6,328,492
Raymond-Knowles Union ESD	Raymond Elementary School	31828 Road 600	Raymond	1,402,717
Raymond-Knowles Union ESD	Raymond School Annex	31613 Road 600	Raymond	1,311,346
Yosemite USD	Coarsegold Elementary School	45426 Road 415	Coarsegold	7,906,906
Yosemite USD	Foothill High School	43875 Patrick Avenue	Coarsegold	114,836
Yosemite USD	Raymond-Granite High School	38828 Road 600	Raymond	150,711
Yosemite USD	Rivergold Elementary School	31800 Road 400	Coarsegold	6,304,319
Yosemite USD	Yosemite Falls Education Center	35572 Highway 41	Coarsegold	407,060
Yosemite USD	Yosemite High School	50200 Road 427	Oakhurst	41,124,906

Table J-2. Madera County Office of Education, Seismic Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Alview Dairyland SD	Alview School	3,814,833	Light
Alview Dairyland SD	Dairyland School	2,339,057	Light
Bass Lake Joint Union ESD	Bass Lake District Office Bldg	265,267	Light
Bass Lake Joint Union ESD	Bass Lake Elementary School	2,614,953	Light
Bass Lake Joint Union ESD	Oak Creek Intermediate School	5,433,341	Light
Bass Lake Joint Union ESD	Oakhurst Elementary School	4,123,151	Light
Bass Lake Joint Union ESD	Wasuma Elementary School	4,298,984	Light
Bass Lake Joint Union ESD	Wawona Elementary School	1,114,812	Light
Chawanakee USD	District Office	157,997	Light
Chawanakee USD	Minarets High School Site	18,488,316	Light
Chawanakee USD	Mountain Oaks H.S./Bonadelle Community Day School/Spring Valley Elementary School	2,539,009	Light
Chawanakee USD	North Fork Elementary School	8,650,774	Light
Chowchilla ESD	Fairmead Elementary School	4,695,272	Light
Chowchilla ESD	Fuller (Merle L.) Elementary School	6,308,257	Light
Chowchilla ESD	Ronald Reagan Elementary School	11,497,720	Light
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	Light
Chowchilla ESD	Wilson Elementary School	9,777,117	Light
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	Light
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	Light
Chowchilla Union HSD	Gateway Continuation School	319,304	Light
Chowchilla Union HSD	High School Farm School	67,292	Light
Golden Valley USD	Centennial Independent Study/ Golden Valley Adult/Independence High School	620,071	Light
Golden Valley USD	District Office/Lincoln Community Day School	1,368,659	Light
Golden Valley USD	Independence High School	1,370,754	Light
Golden Valley USD	Liberty High School	23,520,447	Light
Golden Valley USD	Ranchos Middle School	14,257,199	Light

Table J-2. Madera County Office of Education, Seismic Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Golden Valley USD	Sierra View Elementary School	4,752,135	Light
Golden Valley USD	Webster Elementary School	6,707,561	Light
Madera County Office of Education	Apollo School	645,580	Light
Madera County Office of Education	Berenda (1 building)	2,273,952	Light
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	Light
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	Light
Madera County Office of Education	Coarsegold Elementary School (1 building)	948,972	Light
Madera County Office of Education	County Office	3,666,624	Light
Madera County Office of Education	Desmond School (1 building)	884,000	Light
Madera County Office of Education	Enterprise School	1,632,088	Light
Madera County Office of Education	Fairmead School (1 building)	56,928	Light
Madera County Office of Education	Fuller School (2 buildings)	116,832	Light
Madera County Office of Education	Gould School	2,446,636	Light
Madera County Office of Education	Howard School (1 building)	388,600	Light
Madera County Office of Education	Juvenile Hall (1 building)	52,680	Light
Madera County Office of Education	Liberty School (1 building)	852,800	Light
Madera County Office of Education	Millview School (2 buildings)	748,200	Light
Madera County Office of Education	Nishimoto School (1 building)	884,000	Light
Madera County Office of Education	North Fork School (1 building)	131,700	Light
Madera County Office of Education	Oak Creek School (1 building)	149,760	Light
Madera County Office of Education	Pioneer Technical Center	2,164,348	Light
Madera County Office of Education	Ronald Reagan School (1 building)	108,560	Light
Madera County Office of Education	Wilson School (2 buildings)	112,248	Light
Madera County Office of Education	Yosemite High School (2 buildings)	1,844,456	Light
Madera USD	Ag Farm	949,177	Light
Madera USD	Alpha Elementary School	5,856,301	Light
Madera USD	Berenda Elementary School	6,806,412	Light
Madera USD	Chavez Elementary School	10,497,473	Light

Table J-2. Madera County Office of Education, Seismic Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Madera USD	Desmond Middle School	18,004,265	Light
Madera USD	District Administration	3,366,618	Light
Madera USD	Dixieland Elementary School	2,797,963	Light
Madera USD	Eastin-Arcola Elementary School	6,224,293	Light
Madera USD	Furman/Adult Education Center	1,546,284	Light
Madera USD	Future Location of High School	111,470	Light
Madera USD	Howard Elementary School	4,045,344	Light
Madera USD	James Monroe Elementary School	6,407,514	Light
Madera USD	John Adams Elementary School	6,045,263	Light
Madera USD	LaVina Elementary School	4,320,746	Light
Madera USD	Lincoln Elementary School	8,523,509	Light
Madera USD	Madera High School	32,648,221	Light
Madera USD	Madera South High School	64,287,141	Light
Madera USD	Madison Elementary School	6,079,100	Light
Madera USD	Millview Elementary School	6,489,767	Light
Madera USD	MLK Junior High School	13,126,826	Light
Madera USD	Mountain Vista High School	482,826	Light
Madera USD	Nishimoto Elementary School	9,726,938	Light
Madera USD	Parkwood Elementary School	10,491,963	Light
Madera USD	Pershing Elementary School	10,811,561	Light
Madera USD	Ripperdan Continuation School	3,120,523	Light
Madera USD	Sierra Vista Elementary School	6,940,483	Light
Madera USD	Stadium Complex	2,527,151	Light
Madera USD	Thomas Jefferson Middle School	12,649,956	Light
Madera USD	Washington Elementary School	6,328,492	Light
Raymond-Knowles Union ESD	Raymond Elementary School	1,402,717	Light
Raymond-Knowles Union ESD	Raymond School Annex	1,311,346	Light
Yosemite USD	Coarsegold Elementary School	7,906,906	Light

Table J-2. Madera County Office of Education, Seismic Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Perceived Shaking
Yosemite USD	Foothill High School	114,836	Light
Yosemite USD	Raymond-Granite High School	150,711	Light
Yosemite USD	Rivergold Elementary School	6,304,319	Light
Yosemite USD	Yosemite Falls Education Center	407,060	Light
Yosemite USD	Yosemite High School	41,124,906	Light

Table J-3. Madera County Office of Education, Flood Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Special Flood Hazard Area
Madera County Office of Education	Apollo School	645,580	500-year floodplain
Madera County Office of Education	County Office	3,666,624	500-year floodplain
Madera County Office of Education	Enterprise School	1,632,088	500-year floodplain
Madera County Office of Education	Juvenile Hall (1 building)	52,680	500-year floodplain
Madera County Office of Education	Millview School (2 buildings)	748,200	500-year floodplain
Madera USD	Millview Elementary School	6,489,767	500-year floodplain
Madera USD	MLK Junior High School	13,126,826	500-year floodplain
Madera USD	Mountain Vista High School	482,826	500-year floodplain
Madera USD	Sierra Vista Elementary School	6,940,483	500-year floodplain
Alview Dairyland SD	Alview School	3,814,833	100-year floodplain
Alview Dairyland SD	Dairyland School	2,339,057	100-year floodplain
Madera USD	Lincoln Elementary School	8,523,509	100-year floodplain

Table J-4. Madera County Office of Education, Fog Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
Alview Dairyland SD	Alview School	3,814,833	Yes
Alview Dairyland SD	Dairyland School	2,339,057	Yes
Chowchilla ESD	Fairmead Elementary School	4,695,272	Yes
Chowchilla ESD	Fuller (Merle L.) Elementary School	6,308,257	Yes
Chowchilla ESD	Ronald Reagan Elementary School	11,497,720	Yes
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	Yes
Chowchilla ESD	Wilson Elementary School	9,777,117	Yes
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	Yes
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	Yes
Chowchilla Union HSD	Gateway Continuation School	319,304	Yes
Chowchilla Union HSD	High School Farm School	67,292	Yes
Golden Valley USD	Centennial Independent Study/ Golden Valley Adult/Independence High School	620,071	Yes
Golden Valley USD	District Office/Lincoln Community Day School	1,368,659	Yes
Golden Valley USD	Independence High School	1,370,754	Yes
Golden Valley USD	Liberty High School	23,520,447	Yes
Golden Valley USD	Ranchos Middle School	14,257,199	Yes
Golden Valley USD	Sierra View Elementary School	4,752,135	Yes
Golden Valley USD	Webster Elementary School	6,707,561	Yes
Madera County Office of Education	Apollo School	645,580	Yes
Madera County Office of Education	Berenda School (1 building)	2,273,952	Yes
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	Yes

Table J-4. Madera County Office of Education, Fog Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	Yes
Madera County Office of Education	County Office	3,666,624	Yes
Madera County Office of Education	Desmond School (1 building)	884,000	Yes
Madera County Office of Education	Enterprise School	1,632,088	Yes
Madera County Office of Education	Fairmead School (1 building)	56,928	Yes
Madera County Office of Education	Fuller School (2 buildings)	116,832	Yes
Madera County Office of Education	Gould School	2,446,636	Yes
Madera County Office of Education	Howard School (1 building)	388,600	Yes
Madera County Office of Education	Juvenile Hall (1 building)	52,680	Yes
Madera County Office of Education	Liberty School (1 building)	852,800	Yes
Madera County Office of Education	Millview School (2 buildings)	748,200	Yes
Madera County Office of Education	Nishimoto School (1 building)	884,000	Yes
Madera County Office of Education	Pioneer Technical Center	2,164,348	Yes
Madera County Office of Education	Ronald Reagan School (1 building)	108,560	Yes
Madera County Office of Education	Wilson School (2 buildings)	112,248	Yes
Madera USD	Ag Farm	949,177	Yes
Madera USD	Alpha Elementary School	5,856,301	Yes
Madera USD	Berenda Elementary School	6,806,412	Yes
Madera USD	Chavez Elementary School	10,497,473	Yes
Madera USD	Desmond Middle School	18,004,265	Yes
Madera USD	District Administration	3,366,618	Yes
Madera USD	Dixieland Elementary School	2,797,963	Yes
Madera USD	Eastin-Arcola Elementary School	6,224,293	Yes
Madera USD	Furman/Adult Education Center	1,546,284	Yes
Madera USD	Future Location of High School	111,470	Yes
Madera USD	Howard Elementary School	4,045,344	Yes

Table J-4. Madera County Office of Education, Fog Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Potential Fog Area (elevation ≤ 656 ft.)
Madera USD	James Monroe Elementary School	6,407,514	Yes
Madera USD	John Adams Elementary School	6,045,263	Yes
Madera USD	LaVina Elementary School	4,320,746	Yes
Madera USD	Lincoln Elementary School	8,523,509	Yes
Madera USD	Madera High School	32,648,221	Yes
Madera USD	Madera South High School	64,287,141	Yes
Madera USD	Madison Elementary School	6,079,100	Yes
Madera USD	Millview Elementary School	6,489,767	Yes
Madera USD	MLK Junior High School	13,126,826	Yes
Madera USD	Mountain Vista High School	482,826	Yes
Madera USD	Nishimoto Elementary School	9,726,938	Yes
Madera USD	Parkwood Elementary School	10,491,963	Yes
Madera USD	Pershing Elementary School	10,811,561	Yes
Madera USD	Ripperdan Continuation School	3,120,523	Yes
Madera USD	Sierra Vista Elementary School	6,940,483	Yes
Madera USD	Stadium Complex	2,527,151	Yes
Madera USD	Thomas Jefferson Middle School	12,649,956	Yes
Madera USD	Washington Elementary School	6,328,492	Yes
Raymond-Knowles Union ESD	Raymond School Annex	1,311,346	Yes

Table J-5. Madera County Office of Education, Severe Wind Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Golden Valley USD	Centennial Independent Study/ Golden Valley Adult/Independence High School	620,071	19.5 - 30.4
Golden Valley USD	District Office/Lincoln Community Day School	1,368,659	19.5 - 30.4
Golden Valley USD	Independence High School	1,370,754	19.5 - 30.4
Golden Valley USD	Liberty High School	23,520,447	19.5 - 30.4
Golden Valley USD	Ranchos Middle School	14,257,199	19.5 - 30.4
Golden Valley USD	Sierra View Elementary School	4,752,135	19.5 - 30.4
Golden Valley USD	Webster Elementary School	6,707,561	19.5 - 30.4
Madera County Office of Education	Apollo School	645,580	19.5 - 30.4
Madera County Office of Education	Berenda School (1 building)	2,273,952	19.5 - 30.4
Madera County Office of Education	County Office	3,666,624	19.5 - 30.4
Madera County Office of Education	Desmond School (1 building)	884,000	19.5 - 30.4
Madera County Office of Education	Enterprise School	1,632,088	19.5 - 30.4
Madera County Office of Education	Gould School	2,446,636	19.5 - 30.4
Madera County Office of Education	Howard School (1 building)	388,600	19.5 - 30.4
Madera County Office of Education	Juvenile Hall (1 building)	52,680	19.5 - 30.4
Madera County Office of Education	Liberty School (1 building)	852,800	19.5 - 30.4
Madera County Office of Education	Millview School (2 buildings)	748,200	19.5 - 30.4
Madera County Office of Education	Nishimoto School (1 building)	884,000	19.5 - 30.4
Madera County Office of Education	Pioneer Technical Center	2,164,348	19.5 - 30.4
Madera USD	Ag Farm	949,177	19.5 - 30.4
Madera USD	Alpha Elementary School	5,856,301	19.5 - 30.4
Madera USD	Berenda Elementary School	6,806,412	19.5 - 30.4
Madera USD	Chavez Elementary School	10,497,473	19.5 - 30.4
Madera USD	Desmond Middle School	18,004,265	19.5 - 30.4

Table J-5. Madera County Office of Education, Severe Wind Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Madera USD	District Administration	3,366,618	19.5 - 30.4
Madera USD	Eastin-Arcola Elementary School	6,224,293	19.5 - 30.4
Madera USD	Furman/Adult Education Center	1,546,284	19.5 - 30.4
Madera USD	Future Location of High School	111,470	19.5 - 30.4
Madera USD	Howard Elementary School	4,045,344	19.5 - 30.4
Madera USD	James Monroe Elementary School	6,407,514	19.5 - 30.4
Madera USD	John Adams Elementary School	6,045,263	19.5 - 30.4
Madera USD	LaVina Elementary School	4,320,746	19.5 - 30.4
Madera USD	Lincoln Elementary School	8,523,509	19.5 - 30.4
Madera USD	Madera High School	32,648,221	19.5 - 30.4
Madera USD	Madera South High School	64,287,141	19.5 - 30.4
Madera USD	Madison Elementary School	6,079,100	19.5 - 30.4
Madera USD	Millview Elementary School	6,489,767	19.5 - 30.4
Madera USD	MLK Junior High School	13,126,826	19.5 - 30.4
Madera USD	Mountain Vista High School	482,826	19.5 - 30.4
Madera USD	Nishimoto Elementary School	9,726,938	19.5 - 30.4
Madera USD	Parkwood Elementary School	10,491,963	19.5 - 30.4
Madera USD	Pershing Elementary School	10,811,561	19.5 - 30.4
Madera USD	Ripperdan Continuation School	3,120,523	19.5 - 30.4
Madera USD	Sierra Vista Elementary School	6,940,483	19.5 - 30.4
Madera USD	Stadium Complex	2,527,151	19.5 - 30.4
Madera USD	Thomas Jefferson Middle School	12,649,956	19.5 - 30.4
Madera USD	Washington Elementary School	6,328,492	19.5 - 30.4
Raymond-Knowles Union ESD	Raymond School Annex	1,311,346	19.5 - 30.4
Alview Dairyland SD	Alview School	3,814,833	30.5 - 40.4
Alview Dairyland SD	Dairyland School	2,339,057	30.5 - 40.4

Table J-5. Madera County Office of Education, Severe Wind Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Bass Lake Joint Union ESD	Bass Lake District Office Bldg	265,267	30.5 - 40.4
Bass Lake Joint Union ESD	Bass Lake Elementary School	2,614,953	30.5 - 40.4
Bass Lake Joint Union ESD	Oak Creek Intermediate School	5,433,341	30.5 - 40.4
Bass Lake Joint Union ESD	Oakhurst Elementary School	4,123,151	30.5 - 40.4
Bass Lake Joint Union ESD	Wasuma Elementary School	4,298,984	30.5 - 40.4
Chawanakee USD	District Office	157,997	30.5 - 40.4
Chawanakee USD	Minarets High School Site	18,488,316	30.5 - 40.4
Chawanakee USD	Mountain Oaks H.S./Bonadelle Community Day School/Spring Valley Elementary School	2,539,009	30.5 - 40.4
Chawanakee USD	North Fork Elementary School	8,650,774	30.5 - 40.4
Chowchilla ESD	Fairmead Elementary School	4,695,272	30.5 - 40.4
Chowchilla ESD	Fuller (Merle L.) Elementary School	6,308,257	30.5 - 40.4
Chowchilla ESD	Ronald Reagan Elementary School	11,497,720	30.5 - 40.4
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	30.5 - 40.4
Chowchilla ESD	Wilson Elementary School	9,777,117	30.5 - 40.4
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	30.5 - 40.4
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	30.5 - 40.4
Chowchilla Union HSD	Gateway Continuation School	319,304	30.5 - 40.4
Chowchilla Union HSD	High School Farm School	67,292	30.5 - 40.4
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	30.5 - 40.4
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	30.5 - 40.4
Madera County Office of Education	Coarsegold Elementary School (1 building)	948,972	30.5 - 40.4

Table J-5. Madera County Office of Education, Severe Wind Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days)
Madera County Office of Education	Fairmead School (1 building)	56,928	30.5 - 40.4
Madera County Office of Education	Fuller School (2 buildings)	116,832	30.5 - 40.4
Madera County Office of Education	North Fork School (1 building)	131,700	30.5 - 40.4
Madera County Office of Education	Oak Creek School (1 building)	149,760	30.5 - 40.4
Madera County Office of Education	Ronald Reagan School (1 building)	108,560	30.5 - 40.4
Madera County Office of Education	Wilson School (2 buildings)	112,248	30.5 - 40.4
Madera County Office of Education	Yosemite High School (2 buildings)	1,844,456	30.5 - 40.4
Madera USD	Dixieland Elementary School	2,797,963	30.5 - 40.4
Raymond-Knowles Union ESD	Raymond Elementary School	1,402,717	30.5 - 40.4
Yosemite USD	Coarsegold Elementary School	7,906,906	30.5 - 40.4
Yosemite USD	Foothill High School	114,836	30.5 - 40.4
Yosemite USD	Raymond-Granite High School	150,711	30.5 - 40.4
Yosemite USD	Rivergold Elementary School	6,304,319	30.5 - 40.4
Yosemite USD	Yosemite Falls Education Center	407,060	30.5 - 40.4
Yosemite USD	Yosemite High School	41,124,906	30.5 - 40.4
Bass Lake Joint Union ESD	Wawona Elementary School	1,114,812	40.5 - 50.4

MPH = miles per hour

Table J-6. Madera County Office of Education, Winter Storm Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Alview Dairyland SD	Alview School	3,814,833	Low: 1.00-23.99
Alview Dairyland SD	Dairyland School	2,339,057	Low: 1.00-23.99
Bass Lake Joint Union ESD	Wasuma Elementary School	4,298,984	Low: 1.00-23.99
Chawanakee USD	District Office	157,997	Low: 1.00-23.99
Chawanakee USD	Minarets High School Site	18,488,316	Low: 1.00-23.99
Chawanakee USD	Mountain Oaks H.S./Bonadelle Community Day School/Spring Valley Elementary School	2,539,009	Low: 1.00-23.99
Chawanakee USD	North Fork Elementary School	8,650,774	Low: 1.00-23.99
Chowchilla ESD	Fairmead Elementary School	4,695,272	Low: 1.00-23.99
Chowchilla ESD	Fuller (Merle L.) Elementary School	6,308,257	Low: 1.00-23.99
Chowchilla ESD	Ronald Reagan Elementary School	11,497,720	Low: 1.00-23.99
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	Low: 1.00-23.99
Chowchilla ESD	Wilson Elementary School	9,777,117	Low: 1.00-23.99
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	Low: 1.00-23.99
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	Low: 1.00-23.99
Chowchilla Union HSD	Gateway Continuation School	319,304	Low: 1.00-23.99
Chowchilla Union HSD	High School Farm School	67,292	Low: 1.00-23.99
Golden Valley USD	Centennial Independent Study/ Golden Valley Adult/Independence High School	620,071	Low: 1.00-23.99
Golden Valley USD	District Office/Lincoln Community Day School	1,368,659	Low: 1.00-23.99
Golden Valley USD	Independence High School	1,370,754	Low: 1.00-23.99
Golden Valley USD	Liberty High School	23,520,447	Low: 1.00-23.99
Golden Valley USD	Ranchos Middle School	14,257,199	Low: 1.00-23.99

Table J-6. Madera County Office of Education, Winter Storm Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Golden Valley USD	Sierra View Elementary School	4,752,135	Low: 1.00-23.99
Golden Valley USD	Webster Elementary School	6,707,561	Low: 1.00-23.99
Madera County Office of Education	Apollo School	645,580	Low: 1.00-23.99
Madera County Office of Education	Berenda School (1 building)	2,273,952	Low: 1.00-23.99
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	Low: 1.00-23.99
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	Low: 1.00-23.99
Madera County Office of Education	Coarsegold Elementary School (1 building)	948,972	Low: 1.00-23.99
Madera County Office of Education	County Office	3,666,624	Low: 1.00-23.99
Madera County Office of Education	Desmond School (1 building)	884,000	Low: 1.00-23.99
Madera County Office of Education	Enterprise School	1,632,088	Low: 1.00-23.99
Madera County Office of Education	Fairmead School (1 building)	56,928	Low: 1.00-23.99
Madera County Office of Education	Fuller School (2 buildings)	116,832	Low: 1.00-23.99
Madera County Office of Education	Gould School	2,446,636	Low: 1.00-23.99
Madera County Office of Education	Howard School (1 building)	388,600	Low: 1.00-23.99
Madera County Office of Education	Juvenile Hall (1 building)	52,680	Low: 1.00-23.99
Madera County Office of Education	Liberty School (1 building)	852,800	Low: 1.00-23.99
Madera County Office of Education	Millview School (2 buildings)	748,200	Low: 1.00-23.99
Madera County Office of Education	Nishimoto School (1 building)	884,000	Low: 1.00-23.99
Madera County Office of Education	North Fork School (1 building)	131,700	Low: 1.00-23.99
Madera County Office of Education	Pioneer Technical Center	2,164,348	Low: 1.00-23.99
Madera County Office of Education	Ronald Reagan School (1 building)	108,560	Low: 1.00-23.99
Madera County Office of Education	Wilson School (2 buildings)	112,248	Low: 1.00-23.99
Madera USD	Ag Farm	949,177	Low: 1.00-23.99
Madera USD	Alpha Elementary School	5,856,301	Low: 1.00-23.99

Table J-6. Madera County Office of Education, Winter Storm Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Madera USD	Berenda Elementary School	6,806,412	Low: 1.00-23.99
Madera USD	Chavez Elementary School	10,497,473	Low: 1.00-23.99
Madera USD	Desmond Middle School	18,004,265	Low: 1.00-23.99
Madera USD	District Administration	3,366,618	Low: 1.00-23.99
Madera USD	Dixieland Elementary School	2,797,963	Low: 1.00-23.99
Madera USD	Eastin-Arcola Elementary School	6,224,293	Low: 1.00-23.99
Madera USD	Furman/Adult Education Center	1,546,284	Low: 1.00-23.99
Madera USD	Future Location of High School	111,470	Low: 1.00-23.99
Madera USD	Howard Elementary School	4,045,344	Low: 1.00-23.99
Madera USD	James Monroe Elementary School	6,407,514	Low: 1.00-23.99
Madera USD	John Adams Elementary School	6,045,263	Low: 1.00-23.99
Madera USD	LaVina Elementary	4,320,746	Low: 1.00-23.99
Madera USD	Lincoln Elementary	8,523,509	Low: 1.00-23.99
Madera USD	Madera High School	32,648,221	Low: 1.00-23.99
Madera USD	Madera South High School	64,287,141	Low: 1.00-23.99
Madera USD	Madison Elementary School	6,079,100	Low: 1.00-23.99
Madera USD	Millview Elementary School	6,489,767	Low: 1.00-23.99
Madera USD	MLK Junior High School	13,126,826	Low: 1.00-23.99
Madera USD	Mountain Vista High School	482,826	Low: 1.00-23.99
Madera USD	Nishimoto Elementary School	9,726,938	Low: 1.00-23.99
Madera USD	Parkwood Elementary School	10,491,963	Low: 1.00-23.99
Madera USD	Pershing Elementary School	10,811,561	Low: 1.00-23.99
Madera USD	Ripperdan Continuation School	3,120,523	Low: 1.00-23.99
Madera USD	Sierra Vista Elementary School	6,940,483	Low: 1.00-23.99
Madera USD	Stadium Complex	2,527,151	Low: 1.00-23.99
Madera USD	Thomas Jefferson Middle School	12,649,956	Low: 1.00-23.99
Madera USD	Washington Elementary School	6,328,492	Low: 1.00-23.99

Table J-6. Madera County Office of Education, Winter Storm Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Mean Annual Snowfall (in.)
Raymond-Knowles Union ESD	Raymond Elementary School	1,402,717	Low: 1.00-23.99
Raymond-Knowles Union ESD	Raymond School Annex	1,311,346	Low: 1.00-23.99
Yosemite USD	Coarsegold Elementary School	7,906,906	Low: 1.00-23.99
Yosemite USD	Raymond-Granite High School	150,711	Low: 1.00-23.99
Yosemite USD	Rivergold Elementary School	6,304,319	Low: 1.00-23.99
Yosemite USD	Yosemite Falls Education Center	407,060	Low: 1.00-23.99
Bass Lake Joint Union ESD	Bass Lake District Office Bldg	265,267	Medium: 24.00-47.99
Bass Lake Joint Union ESD	Bass Lake Elementary School	2,614,953	Medium: 24.00-47.99
Bass Lake Joint Union ESD	Oak Creek Intermediate School	5,433,341	Medium: 24.00-47.99
Bass Lake Joint Union ESD	Oakhurst Elementary School	4,123,151	Medium: 24.00-47.99
Madera County Office of Education	Oak Creek School (1 building)	149,760	Medium: 24.00-47.99
Madera County Office of Education	Yosemite High School (2 buildings)	1,844,456	Medium: 24.00-47.99
Yosemite USD	Yosemite High School	41,124,906	Medium: 24.00-47.99
Bass Lake Joint Union ESD	Wawona Elementary School	1,114,812	High: 48.00-72.00
Yosemite USD	Foothill High School	114,836	High: 48.00-72.00

Table J-7. Madera County Office of Education, Wildfire Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: LRA Fire Hazard Severity Zone
Chowchilla ESD	Fairmead Elementary School	4,695,272	Moderate
Golden Valley USD	Ranchos Middle School	14,257,199	Moderate
Madera County Office of Education	Berenda School (1 building)	2,273,952	Moderate
Madera County Office of Education	Desmond School (1 building)	884,000	Moderate
Madera County Office of Education	Fairmead School (1 building)	56,928	Moderate
Madera County Office of Education	Nishimoto School (1 building)	884,000	Moderate
Madera USD	Berenda Elementary School	6,806,412	Moderate
Madera USD	Desmond Middle School	18,004,265	Moderate
Madera USD	Future Location of High School	111,470	Moderate
Madera USD	LaVina Elementary School	4,320,746	Moderate
Madera USD	Nishimoto Elementary School	9,726,938	Moderate
Madera USD	Pershing Elementary School	10,811,561	Moderate
Yosemite USD	Foothill High School	114,836	Very High

LRA = Local Responsibility Area

Table J-8. Madera County Office of Education, Wildfire Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: SRA Fire Hazard Severity Zone
Madera County Office of Education	North Fork School (1 building)	131,700	Moderate
Madera County Office of Education	Oak Creek School (1 building)	149,760	Moderate
Yosemite USD	Raymond-Granite High School	150,711	Moderate
Chawanakee USD	District Office	157,997	Moderate
Bass Lake Joint Union ESD	Bass Lake District Office Bldg	265,267	Moderate
Madera County Office of Education	Coarsegold Elementary (1 building)	948,972	Moderate
Raymond-Knowles Union ESD	Raymond School Annex	1,311,346	Moderate
Raymond-Knowles Union ESD	Raymond Elementary School	1,402,717	Moderate
Madera County Office of Education	Yosemite High (2 buildings)	1,844,456	Moderate
Chawanakee USD	Mountain Oaks H.S./Bonadelle Community Day School/Spring Valley Elementary School	2,539,009	Moderate
Bass Lake Joint Union ESD	Oakhurst Elementary School	4,123,151	Moderate
Bass Lake Joint Union ESD	Wasuma Elementary School	4,298,984	Moderate
Bass Lake Joint Union ESD	Oak Creek Intermediate School	5,433,341	Moderate
Yosemite USD	Rivergold Elementary School	6,304,319	Moderate
Yosemite USD	Coarsegold Elementary School	7,906,906	Moderate
Chawanakee USD	North Fork Elementary School	8,650,774	Moderate
Chawanakee USD	Minarets High School Site	18,488,316	Moderate
Yosemite USD	Yosemite High School	41,124,906	Moderate
Yosemite USD	Yosemite Falls Education Center	407,060	High
Bass Lake Joint Union ESD	Bass Lake Elementary School	2,614,953	Very High

SRA = State Responsibility Area

Table J-9. Madera County Office of Education, Dam Failure Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Madera County Office of Education	Apollo School	645,580	Hidden
Madera County Office of Education	County Office	3,666,624	Hidden
Madera County Office of Education	Desmond School (1 building)	884,000	Hidden
Madera County Office of Education	Enterprise School	1,632,088	Hidden
Madera County Office of Education	Gould	2,446,636	Hidden
Madera County Office of Education	Howard School (1 building)	388,600	Hidden
Madera County Office of Education	Juvenile Hall (1 building)	52,680	Hidden
Madera County Office of Education	Millview School (2 buildings)	748,200	Hidden
Madera County Office of Education	Nishimoto School (1 building)	884,000	Hidden
Madera County Office of Education	Pioneer Technical Center	2,164,348	Hidden
Madera USD	Ag Farm	949,177	Hidden
Madera USD	Alpha Elementary School	5,856,301	Hidden
Madera USD	Chavez Elementary School	10,497,473	Hidden
Madera USD	Desmond Middle School	18,004,265	Hidden
Madera USD	District Administration	3,366,618	Hidden
Madera USD	Furman/Adult Education Center	1,546,284	Hidden
Madera USD	Future Location of High School	111,470	Hidden
Madera USD	Howard Elementary School	4,045,344	Hidden
Madera USD	James Monroe Elementary School	6,407,514	Hidden
Madera USD	John Adams Elementary School	6,045,263	Hidden
Madera USD	LaVina Elementary School	4,320,746	Hidden
Madera USD	Lincoln Elementary School	8,523,509	Hidden
Madera USD	Madera High School	32,648,221	Hidden
Madera USD	Madera South High School	64,287,141	Hidden
Madera USD	Madison Elementary School	6,079,100	Hidden
Madera USD	Millview Elementary School	6,489,767	Hidden

Table J-9. Madera County Office of Education, Dam Failure Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Madera USD	MLK Junior High School	13,126,826	Hidden
Madera USD	Mountain Vista High School	482,826	Hidden
Madera USD	Nishimoto Elementary School	9,726,938	Hidden
Madera USD	Parkwood Elementary School	10,491,963	Hidden
Madera USD	Pershing Elementary School	10,811,561	Hidden
Madera USD	Sierra Vista Elementary School	6,940,483	Hidden
Madera USD	Stadium Complex	2,527,151	Hidden
Madera USD	Thomas Jefferson Middle School	12,649,956	Hidden
Madera USD	Washington Elementary School	6,328,492	Hidden
Madera USD	Eastin-Arcola Elementary	6,224,293	Friant
Madera USD	Ripperdan Continuation School	3,120,523	Friant
Chowchilla ESD	Fuller (Merle L.) Elementary School	6,308,257	Buchanan
Chowchilla ESD	Ronald Reagan Elementary School	11,497,720	Buchanan
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	Buchanan
Chowchilla ESD	Wilson Elementary School	9,777,117	Buchanan
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	Buchanan
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	Buchanan
Chowchilla Union HSD	Gateway Continuation School	319,304	Buchanan
Chowchilla Union HSD	High School Farm School	67,292	Buchanan
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	Buchanan

Table J-9. Madera County Office of Education, Dam Failure Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Federal and State-Jurisdictional Dam Failure Inundation Area
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	Buchanan
Madera County Office of Education	Fuller School (2 buildings)	116,832	Buchanan
Madera County Office of Education	Ronald Reagan School (1 building)	108,560	Buchanan
Madera County Office of Education	Wilson School (2 buildings)	112,248	Buchanan

Table J-10. Madera County Office of Education, Levee Break Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Levee Flood Protection Zones (ft.)
Alview Dairyland SD	Alview School	3,814,833	3' - 12', Deep Slough, Mariposa Slough, Eastside Bypass

Table J-11. Madera County Office of Education, Hazardous Material Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Transportation Corridor (1/4-mile buffer)
Bass Lake Joint Union ESD	Wasuma Elementary School	4,298,984	Yes
Chowchilla ESD	Stephens Elementary & District Office	3,982,820	Yes
Chowchilla ESD	Wilson Elementary School	9,777,117	Yes
Chowchilla Union HSD	Chowchilla Union High School	27,765,749	Yes
Chowchilla Union HSD	Computer Tech Shop & Storage School	161,408	Yes
Chowchilla Union HSD	Gateway Continuation School	319,304	Yes
Madera County Office of Education	Chowchilla High School - (2 buildings, new)	386,000	Yes
Madera County Office of Education	Chowchilla High School - (2 buildings, old)	123,750	Yes
Madera County Office of Education	Gould School	2,446,636	Yes
Madera County Office of Education	Millview School (2 buildings)	748,200	Yes
Madera County Office of Education	Pioneer Technical Center	2,164,348	Yes
Madera County Office of Education	Wilson (2 buildings)	112,248	Yes
Madera USD	Ag Farm	949,177	Yes
Madera USD	Chavez Elementary School	10,497,473	Yes
Madera USD	Furman/Adult Education Center	1,546,284	Yes
Madera USD	Millview Elementary School	6,489,767	Yes
Madera USD	Mountain Vista High School	482,826	Yes
Madera USD	Parkwood Elementary School	10,491,963	Yes
Madera USD	Sierra Vista Elementary School	6,940,483	Yes
Madera USD	Thomas Jefferson Middle School	12,649,956	Yes
Yosemite USD	Yosemite Falls Education Center	407,060	Yes

Table J-12. Madera County Office of Education, Hazardous Material Hazard Vulnerability Analysis

School District	Facility	Structural Value ($)	Hazard Area: Fixed Facilities (1/4-mile buffer)
Madera USD	Alpha Elementary School	5,856,301	Yes

Table J-13. Madera County Office of Education, Overall Summary of Total Assets at Risk

Hazard	Hazard Area	No. of Facilities	% of Facilities	Structural Value ($)
Seismic	Light	87	100	521,567,354
Flood	500-year SFHA	9	10	33,785,074
	100-year SFHA	3	3	14,677,399
Fog	Potential Fog Area, (elevation ≤ 656 feet)	66	76	413,394,407
Severe Wind	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 19.5-30.4	48	55	338,963,297
	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 30.5-40.4	38	44	181,489,245
	Peak Wind Gusts ≥ 50 MPH, Annual Mean Occurrence (days): 40.5-50.4	1	1.0	1,114,812
Winter Storm	Mean Annual Snowfall (in.): Low (1.00-23.99)	78	90	464,781,872
	Mean Annual Snowfall (in.): Medium (24.00-47.99)	7	8.0	55,555,834
	Mean Annual Snowfall (in.): High (48.00-72.00)	2	2.0	1,229,648
Wildfire	LRA: Moderate	12	14	72,832,743
	LRA: Very High	1	1.0	114,836
	SRA: Moderate	18	21	105,232,632
	SRA: High	1	1.0	407,060
	SRA: Very High	1	1.0	213,487,277
Dam Failure	Hidden Dam	35	40	265,777,145
	Friant Dam	2	2.0	9,344,815
	Buchanan Dam	13	15	60,727,057

Table J-13. Madera County Office of Education, Overall Summary of Total Assets at Risk

Hazard	Hazard Area	No. of Facilities	% of Facilities	Structural Value ($)
Levee Inundation	Levee Flood Protection Zone	1	1.15	3,814,833
Hazardous Material Event	Transportation Corridor	21	24.14	102,741,553
	Fixed Facility	1	1.15	5,856,301

Table J-14. Madera County Office of Education, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Geri Kendall Cox, Chief Business and Administrative Services Officer	Madera County Office of Education	Under the direction of the Superintendent, plan, organize, control, and direct the activities and operations of the Business Services Office, coordinate assigned activities with other divisions, departments, school districts, and outside agencies; maintain the fiscal integrity and solvency of the organization; assure programs are operating within the appropriate fiscal parameters and remain in compliance with the appropriate federal, state, or local regulations.
Opie Riar, Facilities Coordinator	Madera County Office of Education	Under the direction of the Superintendent/Designee, coordinate and develop short- and long-range plans for school housing facilities; plan, organize, and coordinate the activities and operations of the facilities and planning functions, including new construction, renovation, and leasing; act as a liaison between the County Office of Education and the agencies of the State, County, and City governments.
Kim Linderholm Senior Administrative Assistant	Madera County Office of Education	Under the direction of Chief Business and Administrative Services Officer, perform highly responsible and confidential secretarial and administrative assistant duties to relieve the administrator of a variety of administrative details; interpret policies and regulations to officials, staff, and the public; plan, coordinate, and organize office activities and coordinate flow of communications and information for the assigned administrators, maintain confidentiality of sensitive and privileged information.
Doug Reeves, Manager, Maintenance and Grounds	Madera County Office of Education	Under the direction of the Chief Business and Administrative Services Officer, organize and direct the activities and operations of the Maintenance and Operations Office; plan, coordinate, organize, and supervise the maintenance of school facilities and grounds; perform a variety of custodial, grounds maintenance, and highly skilled building and equipment maintenance duties and other designated services.

Table J-14. Madera County Office of Education, Human and Technical Resources for Hazard Mitigation

Staff/Personnel Resources	Department or Agency	Principal Activities Related to Hazard Mitigation
Jeffrey Bottorff, Chief Information Technology Officer	Madera County Office of Education	Under the direction of the Superintendent, plan, organize, control and direct strategic planning of management information services for the Madera County Superintendent of Schools (MCSOS) and the school districts of Madera County; direct and support the use of personal computer hardware and software, computer, and computer-related needs of the MCSOS Local Area Network and Wide Area Network; direct the maintenance and programming of the electronic communications systems for the County-wide Financial System; direct the operations and maintenance of the MCSOS communications network.

Table J-15. Madera County Office of Education, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Plans	Madera County Office of Education Emergency Preparedness Plan	Describes what the County Office of Education and schools that house Madera County Office of Education's programs, actions will be during a response to an emergency.	Civil Unrest Dam Failure Explosion Flood Hazardous Materials Landslide Major Earthquake National Security Pandemic Influenza Radiological Terrorism Transportation Acc. Tornado Wildland/Urban Interface Fire Winter Storm Power Outage Drought Biological Incident Shooter/Intruder Nearby Police Activity Gas Leak	Response	No

Table J-15. Madera County Office of Education, Legal and Regulatory Resources Available for Hazard Mitigation

Regulatory Tool	Name	Description (Effect on Hazard Mitigation)	Hazards Addressed	Mitigation, Preparedness, Response, or Recovery	Affects Development in Hazard Areas?
Plans (cont)	Madera County Superintendent of Schools Pandemic Influenza Crisis Response Plan	Describes what the response will be between Madera County Superintendent of Schools, Madera County Public Health Department and Madera County Office of Emergency Services during the different stages of a pandemic influenza crisis as it relates to schools.	Pandemic Influenza	Response	No
	Emergency Response Plans: Alview Dairyland SD; Bass Lake Joint Union Elementary School District; Chawanakee USD; Chowchilla ESD; Chowchilla Union HSD; Golden Valley USD; Madera USD; Raymond Knowles Union Elementary School District; and Yosemite USD	How schools located in a particular district will respond to an emergency.	Any event that affects the school, students, and staff.	Response	No
Policies	Madera County Office of Education Comprehensive Safety Plan	Describes policies and procedures for maximizing school safety and to create a positive learning environment that teaches strategies for violence prevention and emphasizes high expectations for student conduct.	Any event that affects the school, students, and staff.	Response	No
	Comprehensive Safety Plans: Alview Dairyland SD; Bass Lake Joint Union Elementary School District; Chawanakee USD; Chowchilla ESD; Chowchilla Union HSD; Golden Valley USD; Madera USD; Raymond Knowles Union Elementary School District; and Yosemite USD	Describes policies and procedures for maximizing school safety and violence prevention.	Any that deals with achieving a safe school environment.	Response	No

Table J-16. Madera County Office of Education, Financial Resources

Type	Subtype	Administrator	Purpose
Local	General Fund	District-specific.	Program operations and specific projects.
Federal	Hazard Mitigation Grant Program (HMGP)	Federal Emergency Management Agency (FEMA)	Supports pre- and post-disaster mitigation plans and projects.
	Pre-Disaster Mitigation (PDM) grant program	FEMA	Supports pre-disaster mitigation plans and projects.
	Hazard Mitigation Grant Program (HMGP)	Federal Emergency Management Agency (FEMA)	Supports pre- and post-disaster mitigation plans and projects.

Table J-17. Madera County Office of Education, Current, Ongoing, and Completed Hazard Mitigation Projects and Programs

Name/Status	Buildings and Grounds	Description	Year(s)
Madera County Office of Education / Ongoing	Nonstructural earthquake safety.	Inspection of facilities and grounds to identify areas of repair.	Performed annually
Madera County Office of Education / Ongoing	Nonstructural earthquake safety.	Securing all bookcases and cabinets to walls and assessing rooms for falling objects.	Performed annually
Madera County Office of Education / Ongoing	District support	Emergency Preparedness encouraged throughout the school districts in Madera County by distributing information on how to be prepared.	Annually
Madera County Office of Education / Ongoing	District support	Encourage Districts to participate in statewide Earthquake and Evacuation drill. These activities also encourage districts to review school sites for safe areas and preparing classrooms from falling debris.	Annually
Madera County Office of Education / School Districts Current	Shelter Agreements	Districts providing shelter agreements and facility surveys for the American Red Cross to use school sites as shelters in the event of an emergency.	2009-2010

Table J-18. Madera County Office of Education/County School Districts, Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
1	Create a GIS-based pre-application review for new construction and major remodels in hazard areas, such levee break, high and/or very high wildfire areas.	0	0	0	0	0	0
2	Integrate the 2010 LHMP, in particular the hazard analysis and mitigation strategy sections, into Madera County and the City of Madera's General Plan's Element update process.	0	0	0	0	0	0
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.	0	0	0	0	0	0
4	Stabilize landslide-prone areas through stability improvement measures, including interceptor drains, in situ soil piles, drained earth buttresses, and subdrains.	0	0	0	0	0	0
5	Acquire, relocate, or elevate residential structures, in particular those that have been identified as RL properties, within the 100-year floodplain.	0	0	0	0	0	0

Table J-18. Madera County Office of Education/County School Districts, Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
6	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	**1**	**1**	**1**	**1**	**1**	**5**
7	Reinforce County ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	**0**	**0**	**0**	**0**	**0**	**0**
8	Work with FEMA Region IX to address any floodplain management issues that may have arisen/arise from the countywide DFIRM, Community Assessment Visits, and/or DWR.	**0**	**0**	**0**	**0**	**0**	**0**
9	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	**0**	**0**	**0**	**0**	**0**	**0**
10	Develop a drought contingency plan to provide an effective and systematic means of assessing drought conditions, develop mitigation actions and programs to reduce risks in advance of drought, and develop response options that minimize hardships during drought.	**0**	**0**	**0**	**0**	**0**	**0**

Table J-18. Madera County Office of Education/County School Districts, Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
11	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas.	**1**	**1**	**1**	**1**	**1**	**5**
12	Develop a free annual tree chipping and tree pick-up day that encourages residents living in high windprone hazards areas to manage trees and shrubs at risk of falling on overhead power lines	**0**	**0**	**0**	**0**	**0**	**0**
13	Bolt down the roofs of critical facilities in order to prevent wind damage.	**1**	**1**	**1**	**1**	**1**	**5**
14	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	**1**	**1**	**1**	**1**	**1**	**5**
15	Examine and mitigate County ramps, bridges, and roads that have been identified as being too narrow or having too many tight turns to ensure the safe transportation of truck loads.	**0**	**0**	**0**	**0**	**0**	**0**

Table J-18. Madera County Office of Education/County School Districts, Evaluation and Prioritization Table

No.	Description	Current or Potential Support from the Participating Jurisdiction	Participating Jurisdiction Department or Agency Champion	Ability to be Implemented from 2010-2015	Reduces Expected Future Damages and Losses	Mitigates a High Risk Hazard	Total
16	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	**1**	**1**	**1**	**1**	**1**	**5**
17	Create a vegetation management program that provides vegetation management services to elderly, disabled, or low-income property owners who lack the resources to remove flammable vegetation around their homes.	**0**	**0**	**0**	**0**	**0**	**0**
18	Work with DWR to determine dam inundation areas of unmapped dams within the county and neighboring counties that may affect Madera County.	**0**	**0**	**0**	**0**	**0**	**0**
19	Encourage property owners located in the levee break hazard areas to purchase voluntary flood insurance.	**0**	**0**	**0**	**0**	**0**	**0**
20	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths $\geq$ 3-feet.	**1**	**1**	**1**	**1**	**1**	**5**

Table J-19. Madera County Office of Education, Mitigation Action Plan

No.	Description	Potential Facility to Mitigate	Responsible Department or Agency	Potential Funding Source	Implementation Timeframe
1	Acquire, relocate, elevate, and/or floodproof critical facilities located within the 100-year floodplain.	Alview, Dairyland, and Lincoln Schools	MCOE	PDM/HMGP	5 years
2	Implement a fuel reduction program, such as the collection and disposal of dead fuel, within open spaces and around critical facilities and residential structures located within a SRA or LRA high or very high wildfire zone.	Foothill (Very High Risk), Yosemite Falls (High Risk), and Bass Lake Elementary (Very High Risk) Schools	MCOE	PDM/HMGP	3-5 years
3	Retrofit critical facilities located within high snowfall hazard areas (48-inches plus) to structurally withstand heavy snow loads.	Wawona Elementary and Foothill High Schools	MCOE	PDM/HMGP	3-5 years
4	Acquire, relocate, elevate, and/or floodproof critical facilities located within the levee break hazard areas with depths $\geq$ 3-feet.	Alview School	MCOE	PDM/HMGP	5 years
5	Manage vegetation in areas within and adjacent to rights-of-way and in close proximity to critical facilities in order to reduce the risk of tree failure and property damage and avoid creation of wind acceleration corridors within vegetated areas, and bolt down the roofs of critical facilities in order to prevent wind damage.	Wawona Elementary School	MCOE	PDM/HMGP	2-5 years