



Phone 209.874.2328

312 "E" Street  
P.O. Box 199  
Waterford, CA 95386

[www.cityofwaterford.org](http://www.cityofwaterford.org)

Charlie Goeken  
Mayor

Jose Aldaco  
Vice-Mayor

Michael Van Winkle  
Council Member

Ken Krause  
Council Member

Murray Day  
Council Member

June 14, 2010

Mr. Ken Worman  
State Hazard Mitigation Officer  
California Emergency Management Agency  
Hazard Mitigation Section  
3650 Schriever Avenue  
Mather CA 95655

Dear Mr. Worman,

Submitted for your review is the City of Waterford Local Hazard Mitigation Plan. This plan has been developed in conjunction with various agencies, the Stanislaus County MJHMP Project Manager, LHMP Committee Members, and interested members of the public. The plan lays out the process of evaluating the potential natural hazards, land use, and mitigation strategies to protect lives and property in the City of Waterford.

If, after review by CalEMA, our document has been deemed to have met the standards and is acceptable, we would ask that you please forward it on to the Federal Emergency Management Agency (FEMA) for their review.

Thank you for your time and consideration. If you have any questions, please feel free to contact me at the City Offices or by email at [publicworks@cityofwaterford.org](mailto:publicworks@cityofwaterford.org).

Sincerely,

Matt Erickson  
Public Works Director  
City of Waterford

# **CITY OF WATERFORD**



## **Local Hazard Mitigation Plan**

**City of Waterford  
312 E Street / P.O. Box 199  
Waterford, CA 95386  
(209) 874-2328  
(209) 874-9656 Fax**



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February 8, 2010

Ms. Mamie Ardis, MUHMP Project Manager  
Stanislaus County  
1010 10<sup>th</sup> St Ste 6800  
Modesto CA 95354

Re: Letter of Commitment as participating jurisdiction in Stanislaus County Multi-jurisdictional Hazard Mitigation Planning.

Dear Ms. Ardis,

As the Federal Emergency Management Agency's (FEMA) Local Mitigation Plan requirements under 44 CFR §201.6 specifically identify criteria that allow for multi-jurisdictional mitigation plans and that many issues are better resolved by evaluating hazards more comprehensively but coordinating at the county, regional, or watershed level, the City of Waterford is submitting this letter of commitment to confirm that City of Waterford has agreed to participate in the Stanislaus County Multi-jurisdictional Hazard Mitigation planning.

Further, as a condition to participating in the mitigation planning; City of Waterford agrees to meet the requirements for mitigation plans identified in 44 CFR §201.6 and to provide such cooperation as is necessary and in a timely manner to Stanislaus County to complete the plan in conformance with FEMA requirements.

City of Waterford understands that it must engage in the following planning process, as more fully described in FEMA's Local Multi-Hazard Mitigation Planning Guidance dated July 1, 2008, including, but not limited to:

- Identification of hazards unique to the jurisdiction and not addressed in the master planning document;
- The conduct of a vulnerability analysis and an identification of risks, where they differ from the general planning area;
- The formulation of mitigation goals responsive to public input and development of mitigation actions complementary to those goals. A range of actions must be identified specific for each jurisdiction;
- Demonstration that there has been proactively offered an opportunity for participation in the planning process by all community stakeholders (examples of participation include relevant involvement in any planning process, attending meetings, contributing research, data, or other information, commenting on drafts of the plan, etc.);
- ~~Formal adoption of the Multi-jurisdictional Hazard Mitigation Plan by the jurisdiction's governing body (each jurisdiction must officially adopt the plan).~~ *C&D*

Therefore, with a full understanding of the obligations incurred by participating in the FEMA hazard mitigation planning process as a participant in a multi-jurisdictional plan; I, Charles Deschenes, commit City of Waterford to the Stanislaus County Multi-jurisdictional Hazard mitigation planning effort.

Executed this 25 day of February, 2010

*Charles E. Deschenes*

Charles Deschenes  
City Administrator

# City of Waterford Hazard Mitigation Plan

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## **1. INTRODUCTION**

Located in the heart of the Central Valley, Waterford is the 8<sup>th</sup> largest city in Stanislaus County with a population which has grown steadily from 2,683 in 1980 to over 8,500 today.

Known as the “Gateway to Recreation”, the city plays host to the thousands of people who travel through on their way to the many recreational opportunities in the area such as Turlock Lake State Recreation area, Lake Don Pedro Reservoir, Modesto Reservoir, New Melones Reservoir, La Grange Off Road Vehicle Recreation Area, and Yosemite National Park.

The city is surrounded by a variety and abundance of rich agriculture. Several crops grown locally are almonds, peaches, apples, walnut, and corn.

People and property in the City of Waterford are at risk from a variety of hazards which have the potential for causing wide spread loss of lives, and damages to property, the infrastructure, and the environment.

The HMP was prepared following the hazard mitigation planning process outlined by FEMA, and the Sections of this HMP document are organized accordingly:

***Section 1: Introduction:*** This section gives a brief overview on the City of Waterford and how the LHMP is organized, discusses current development trends, and new development.

***Section 2: Prerequisites:*** This section contains documentation that the LHMP and MJHMP has been formally adopted by the Waterford City Council.

***Section 3: Planning Process:*** This section outlines the process used to develop the plan, including how it was prepared, who was involved, and how the public was involved.

***Section 4: Risk Assessment:*** This section profiles or describes the hazards in some detail. It describes the areas that may be affected, lists previous events, estimates the likelihood of future occurrence, and describes the potential severity of such an occurrence. Vulnerability and impact is also evaluated.

***Section 5: Mitigation Strategy:*** This section presents goals that will guide the City in building its disaster resistance and increasing sustainability. The section shows how goals led to the identification and selection of mitigation actions that will lead toward the achievement of these goals. The section provides some detail showing how mitigation actions will be accomplished by identifying the responsible entity and possible funding sources.

***Section 6: Plan Maintenance:*** This section describes how the HMP will be regularly monitored, evaluated, and updated so that it remains useful and relevant to the city and community.

It should be noted that the City of Waterford adopted an update to its General Plan in November 2006 that included all mandatory General Plan Elements as set forth under California Planning law and several optional Elements; specifically, Sustainable Development, Urban Expansion, Public Facilities and Services and Urban Design Elements that address the unique development environment of Waterford. The General Plan addresses concerns of the desirable balance of jobs and housing, the conservation of open space resources and the overall quality of life for the residents of the City.

The City has limited vacant developable land within old urban limits. The plan expanded the urban limits to provide for future anticipated growth need of the City with respect to housing, industrial and commercial/service needs of its residents. In 2007, the City approved an annexation of 474 acres of land within its newly updated Sphere of Influence that provided for the potential development of around 1,606 attached and detached single-family houses along with some commercial and recreational development. Development of this site has been placed on hold until an overall improvement in housing market occurs some time after 2012.

The City of Waterford Hazard Mitigation plan is an evolving document that will be reviewed and updated as required by the Disaster Mitigation Act. The information contained herein relating to hazards, risk, vulnerability, and mitigation strategies and actions, is based on the best information and technology available at the time this LHMP was prepared.

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
PREREQUISITES**

---

**REQUIREMENT - §201.6(C)(5), §201.6(a)(3)**

**2. PREREQUISITES**

To provide authority to participate in the MJHMP process and support implementation of the mitigation actions identified in this LHMP, a letter of commitment was executed, and the completed Plan was adopted by the Waterford City Council on (date and copy of adoption resolution will be inserted when the plan is adopted).

<b>WATERFORD CITY COUNCIL RESOLUTION # XXXX-XX</b>	
<b>A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF WATERFORD, CALIFORNIA, FORMALLY ADOPTING THE COUNTY OF STANISLAUS MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN, IN ADDITION TO THE CITY OF WATERFORD LOCAL HAZARD MITIGATION PLAN.</b>	
<p><b>WHEREAS,</b> The City of Waterford approved partnering with Stanislaus County to prepare a Hazard Mitigation multi-jurisdictional plan; and</p>	
<p><b>WHEREAS,</b> The multi-jurisdictional plan serves as the umbrella to our individual plan that is annexed as a part of the County plan; and</p>	
<p><b>WHEREAS,</b> Adoption of a Local Hazard Mitigation Plan ensures project grant funding in the event that there is a disaster in the City of Waterford; and</p>	
<p><b>WHEREAS,</b> Said plan was submitted and approved by the Federal Emergency Management Agency (FEMA) pending formal approval by City Council.</p>	
<p><b>PASSED, APPROVED, AND ADOPTED</b> by the City Council of the City of Waterford at a regular meeting held this XX day of XXXX, XXXX, by the following vote:</p>	
<p><b>AYES:</b> <b>NOES:</b> <b>ABSTAIN:</b> <b>ABSENT:</b></p>	
<b>CITY OF WATERFORD</b>	
_____ CHARLIE GOEKEN, Mayor	
<b>ATTEST:</b>	<b>APPROVED AS TO FORM:</b>
_____ LORI MARTIN City Clerk	_____ CORBETT J. BROWNING City Attorney

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
PLANNING PROCESS**

---

**REQUIREMENT - §201.6(b), §201.6(C)(1)**

**3. PLANNING PROCESS**

The City of Waterford is working jointly with the County of Stanislaus to prepare a multi-jurisdictional Hazardous Mitigation Plan. A Hazard Mitigation planning Committee (HMPC) was formed and consists of the OES Coordinator/Public Works Director, Planning Director, City Engineer, Police Chief, and City Administrator.

The HMPC members led the development of this HMP by providing comments and discussion about hazards that affect the City, assessing the likely damage from those hazards, selecting actions to address the City’s vulnerability to such hazards, and developing an action plan to implement these measures. The Committee was fully involved in the planning process and provided vital information for developing a mitigation plan that is consistent with other City planning and sustainability goals. In addition, the OES Coordinator/Public Works Director worked closely with staff from Stanislaus County who are involved in the MJHMP, to insure proper structure and content.

The HMPC invited the public to become involved in the development of the Hazard Mitigation Plan using various mechanisms;

- An announcement regarding the development of the plan was made at the February 4, 2010 City Council Meeting.
- A link was provided on the City website at [www.cityofwaterford.org](http://www.cityofwaterford.org) to the Stanislaus County OES website describing the MJHMP update.
- A statement about the HMP was posted on the City website inviting input from the general public.
- A questionnaire was available to Waterford residents through the provided link to the Stanislaus County OES website.
- The draft plan was available on the City’s website for review and comment prior to adoption.

Additional participation was sought out through other local and state agencies as well as local businesses, community leaders, neighboring communities, and school districts.

The Public Works Director/OES Coordinator and members of the HMPC attended various meetings throughout the development of the plan. The below table outlines those meetings and the content.

**TABLE 1 - HMPC MEETINGS / ACTIVITIES / EVENTS**

DATE	EVENT/DESCRIPTION	LOCATION
September 17, 2009	<ul style="list-style-type: none"> <li>• <b>MJHMP update kickoff MTG held.</b></li> <li>• Facilitated by Stanislaus County</li> <li>• New website link discussed.</li> <li>• Overview of requirements and timeline if participating.</li> <li>• Components of plan/survey.</li> </ul>	Public Library Salida, CA
October 20, 2009	<ul style="list-style-type: none"> <li>• <b>Information meeting with Project Manager for Stanislaus County MJHMP, Marnie Ardis.</b></li> <li>• Guidance provided on assembling of HMP and content.</li> <li>• Overview of Disaster Mitigation Act (DMA).</li> </ul>	1010 10 <sup>th</sup> Street Modesto CA

January 19, 2010	<ul style="list-style-type: none"> <li>• <b>MJHMP MTG held.</b></li> <li>• Discussion of timelines.</li> <li>• Planning/Risk assessment training.</li> <li>• Expectations of participating agencies.</li> </ul>	1010 10 <sup>th</sup> Street Modesto CA (BOS Chambers)
January 20, 2010	<ul style="list-style-type: none"> <li>• <b>HMPC Meeting.</b></li> <li>• Discussion of roles and responsibilities.</li> <li>• Discussion of Disaster mitigation Act.</li> <li>• Discussion of timelines and future meetings.</li> </ul>	Waterford City Hall 312 E Street Waterford CA
January 29, 2010	<ul style="list-style-type: none"> <li>• <b>City website update.</b></li> <li>• Notification of development of plan placed on city website.</li> <li>• Link to Stanislaus County OES website provided.</li> </ul>	
February 4, 2010	<ul style="list-style-type: none"> <li>• <b>City Council Meeting</b></li> <li>• Public announcement read at televised City Council meeting notifying general public of development of the HMP and soliciting input/comments on plan.</li> <li>• Website address provided for more information and details on Stanislaus County MJHMP.</li> </ul>	540 C Street Waterford CA
February 17, 2010	<ul style="list-style-type: none"> <li>• <b>HMPC Meeting</b></li> <li>• Draft framework of plan provided.</li> <li>• Risk assessment discussion</li> <li>• Mitigation strategies, goals, and actions discussed.</li> <li>• Future meeting dates.</li> </ul>	Waterford City Hall 312 E Street Waterford CA
April 20, 2010	<ul style="list-style-type: none"> <li>• <b>MJHMP Meeting</b></li> <li>• Discussion of timelines.</li> <li>• Mitigation strategy, Plan Maintenance, and Crosswalk training.</li> <li>• Submittal instructions/guidance</li> </ul>	County Center III 917 Oakdale Road Modesto CA
April 21, 2010	<ul style="list-style-type: none"> <li>• <b>HMPC Meeting</b></li> <li>• Discussion of Mitigation Plan Maintenance and Crosswalk sections.</li> <li>• Review of Draft Document</li> <li>• Discussion of submittal timelines to Stanislaus County</li> </ul>	Waterford City Hall 312 E Street Waterford CA
May 19, 2010	<ul style="list-style-type: none"> <li>• <b>HMPC Meeting</b></li> <li>• Review of Final document</li> <li>• Discussion of submittal process/date</li> <li>• Explanation of process for review by CalEMA and FEMA</li> </ul>	Waterford City Hall 312 E Street Waterford CA

The Local Hazard Mitigation Plan incorporated information from the Safety Element of the General Plan, the City Emergency Operations Plan, and reviewed the standard operating procedures of the Planning Department.

In addition, data in State and County mitigation plans contributed to developing some of the history of natural hazards, and in estimating the likelihood of hazard occurrence. Additional sources of information that were used in developing this HMP were the FEMA website, the FIRM produced by FEMA, and the local Multi-Hazard Mitigation Planning Guidance (July 1, 2008) document also produced by FEMA.

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

---

**REQUIREMENT - §201.6(C)(2)(i)**

**4. RISK ASSESSMENT**

The City of Waterford identified five hazards to be addressed in the Hazard Mitigation Plan. These hazards were identified through a process that utilized input from the planning team and from information included in the City of Waterford Emergency Operations Plan and the safety element of the City General Plan. The City compiled various maps of the City's infrastructure, critical facilities, and land uses. Data from these documents were used to determine those hazards that present the greatest risk to the City.

The attached information outlining the City facilities APN, description, and value (both personal effects and real property) were compiled from the most recent valuation form prepared by our property liability coverage provider through our Risk Management Authority.

The City of Waterford planning team has identified the following five natural hazards. These hazards were identified because they have the greatest potential to cause a negative impact on the city. They are:

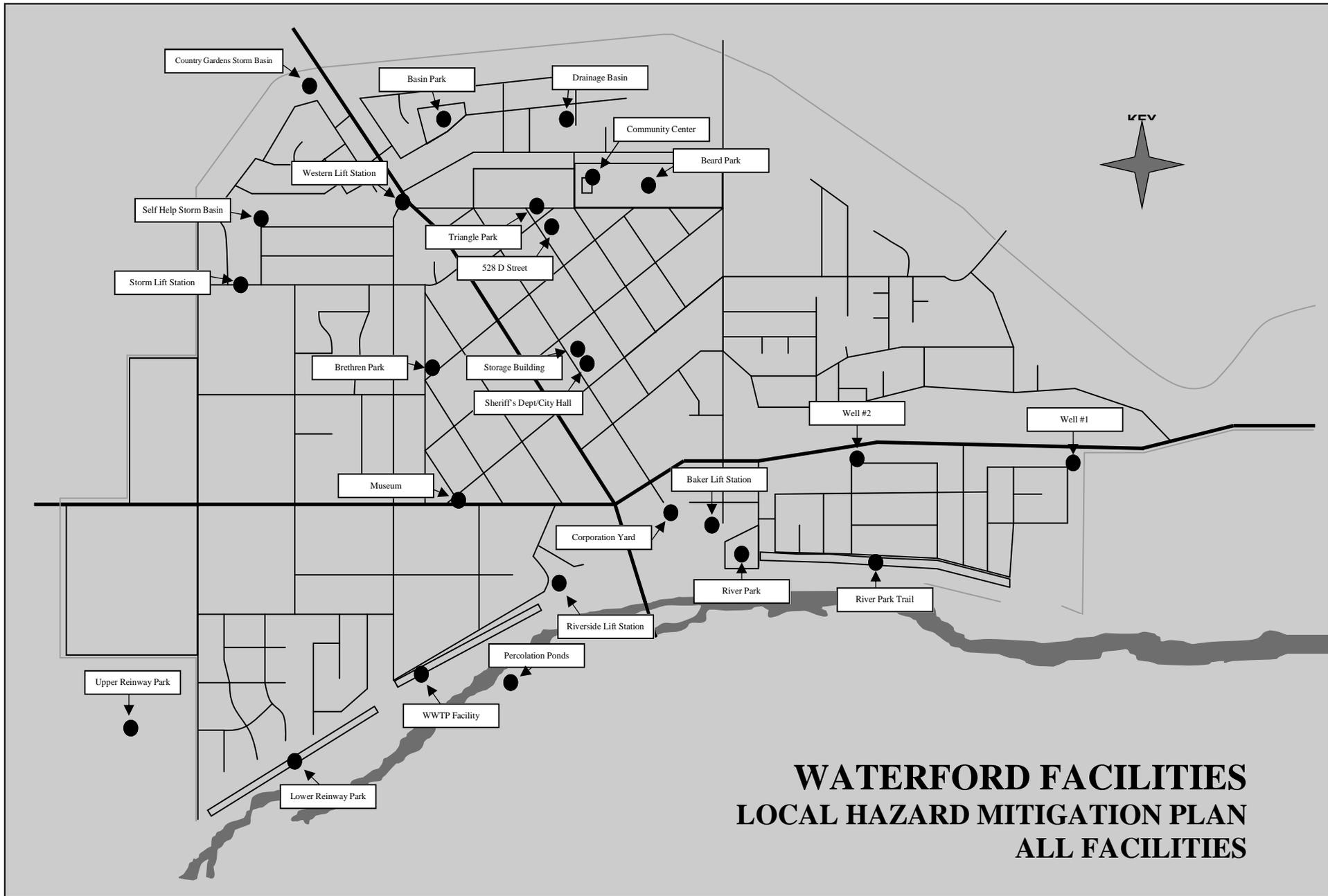
1. Earthquake
2. Landslide
3. Dam Failure
4. Flood
5. Wildfire

# LOCAL HAZARD MITIGATION PLAN

## City of Waterford Facilities All Facilities

APN	NAME	DESCRIPTION	REAL VALUE	PERS VALUE	TOTAL VALUE
134-007-046	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-073	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-074	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-078	Government Center	Center – Not Constructed	\$100,000		\$100,000
080-070-078	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
080-067-021	Well #1	Domestic Water Well	\$1,965,835		\$1,965,835
080-069-023	Well #2	Domestic Water Well	\$1,965,835		\$1,965,835
134-007-026	Police Services Building	City Building	\$280,778	\$88,548	\$369,326
134-007-026	Storage Building	City Building	\$27,141	\$16,353	\$43,494
080-041-005	Riverside Lift Station	Sewage Lift Station	\$104,609		\$104,609
080-036-022	City ROW	ROW – Easement	\$10,000		\$10,000
080-066-023	City ROW	ROW – Easement	\$10,000		\$10,000
134-007-069	City Hall	City Building	\$151,256	\$103,887	\$255,143
134-011-019	City ROW	ROW – Easement	\$10,000		\$10,000
134-012-005	Corporation Yard	City Building	\$88,530	\$52,828	\$141,358
080-018-034	Storm Drainage Basin	Borax Court	\$250,000		\$250,000
080-057-066	Storm Lift Station	Kadota Avenue	\$125,000		\$125,000
134-010-064	Triangle Park	Park – Not Constructed	\$150,000		\$150,000
080-041-007	Lower Reinway Park	Park – Not Constructed	\$150,000		\$150,000
Easement	Western Lift Station	Sewage Lift Station	\$104,609		\$104,609
Easement	Baker Lift Station	Sewage Lift Station	\$51,100	\$50,313	\$101,413
134-012-005	Corporation yard	Shelter Structure	\$7,358		\$7,358

<b>APN</b>	<b>NAME</b>	<b>DESCRIPTION</b>	<b>REAL VALUE</b>	<b>PERS VALUE</b>	<b>TOTAL VALUE</b>
080-009-001	WWTP Facility	Percolation Ponds	\$100,000		\$100,000
080-041-005	WWTP Facility	Office / Lab	\$146,248	\$113,076	\$259,324
080-041-005	WWTP Facility	Equipment Storage Building	\$89,879	\$11,321	\$101,200
080-041-005	WWTP Facility	Pump House	\$20,465	\$27,922	\$48,387
080-041-005	WWTP Facility	Aeration Lagoons		\$724,494	\$724,494
080-041-005	WWTP Facility	Headworks	\$35,293	\$27,797	\$63,090
080-041-005	WWTP Facility	Storage Container	\$13,626	\$8,050	\$21,676
080-057-009	Self Help Storm Basin	Washburn Avenue	\$250,000		\$250,000
134-028-012	Beard Park / Community Center	Picnic Shelter (Small)	\$24,664		\$24,664
134-028-012	Beard Park / Community Center	Community Center Building	\$1,009,457	\$96,725	\$1,106,182
134-028-012	Beard Park / Community Center	Concession Stand	\$30,598	\$5,282	\$35,880
134-028-012	Beard Park / Community Center	Restroom	\$30,918		\$30,918
134-028-012	Beard Park / Community Center	Picnic Shelter (Large)	\$224,677		\$224,677
134-028-012	Beard Park / Community Center	Restroom	\$57,503		\$57,503
134-028-012	Beard Park / Community Center	Storage Building	\$13,626		\$13,626
134-002-033	Museum	Historical Museum	\$218,591	\$32,516	\$251,107
080-007-068	Upper Reinway Park	Park – Not Constructed	\$1,200,000		\$1,200,000
080-035-004	Riverwalk Park	Picnic Shelter	\$14,466		\$14,466
080-035-004	Riverwalk Park	Restroom	\$149,482		\$149,482
080-066-051	Basin Park	Goldmine Storm Basin	\$125,000		\$125,000
134-003-021	Brethren Park	Park – Not Constructed	\$85,000		\$85,000
134-018-091	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
134-003-022	Brethren Park	Park – Not Constructed	\$37,896		\$37,896
134-010-044	528 D Street	Single Family Residence	\$60,017		\$60,017
<b>Grand Total</b>		<b>Count = 47</b>	<b>\$9,939,457</b>	<b>\$1,369,112</b>	<b>\$11,308,569</b>
<b>% of Waterford Facilities</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>



**WATERFORD FACILITIES  
 LOCAL HAZARD MITIGATION PLAN  
 ALL FACILITIES**

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

**REQUIREMENT - §201.6(C)(2)(i), §201.6(C)(2)(ii), §201.6(C)(2)(ii)(B), §201.6(C)(2)(ii)(C)**

**4.1 EARTHQUAKE**

<b>NATURAL HAZARD</b>	<b>HOW IDENTIFIED</b>	<b>WHY IDENTIFIED</b>
<b>EARTHQUAKE</b>	<ul style="list-style-type: none"> <li>• City General Plan Safety Element</li> <li>• County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Poses risk to City population and assets.</li> </ul>

*A. Overview*

An earthquake is the shaking and vibration at the surface of the earth resulting from underground movement along a fault plane. A fault is a thin layer of crushed rock between two blocks of the earth’s crust that have moved relative to one another. A fault can range in length from a few centimeters to thousands of miles. Earthquakes occur when forces underground cause the fault to rupture and suddenly slip. This occurs when the stress build up at the fault exceeds the strength of rock resisting the movement. There are no known faults that exist within the City of Waterford, however faults do exist in Stanislaus County.

*B. Location – Extent*

The Calaveras and Hayward Faults are major Quaternary and are located approximately 53 miles west of Waterford in Santa Clara County. Fault creep slippage has been observed in portions of both of these faults. The location and extent of an earthquake hazard are depicted in the attached Earthquake Hazard Map and City Facilities listing potential loss.

*C. Previous Occurrences*

There have been no previous occurrences which have affected the City of Waterford negatively due to earthquakes.

*D. Probability of Occurrence*

It is not anticipated that an earthquake would occur in Stanislaus County. However, a major quake (8 or above on Richter scale) in our adjacent counties could possibly cause our county to see shakings in the 6 or even 7 reading. Shaking of this magnitude could cause some severe damage in the City of Waterford, particularly in some of the older buildings that have more than one story and in the underground utilities.

*E. Vulnerability and Impact*

Waterford is vulnerable to possible earthquake damage from earthquake epicenters in other portions of the state, earthquakes on “nearby” faults, and earthquakes on what are now undiscovered faults within the Central Valley. Although the City of Waterford has had no recorded seismic activity, it is imperative that we plan for a potential earthquake disaster. In any earthquake, the primary consideration is saving lives. Time and effort must also be given to providing for people’s mental health by reuniting families, providing shelter to the displaced persons and restoring basic needs and services. A major effort will also be needed to remove debris and clear roadways, demolish unsafe structures, assist in reestablishing public services and utilities and provide continuing care and temporary housing for affected citizens.

It is clear that the most likely impact to the City of Waterford may well be related to the indirect effects of major earthquake activity on a faults system adjacent to Stanislaus County. While direct damage may be minimal, the indirect effect of mass relocation, mutual aid activities, support activities and collateral damage could severely tax the capabilities of local resources.

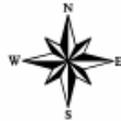
# LOCAL HAZARD MITIGATION PLAN

## City of Waterford Facilities Earthquake Hazard

APN	NAME	DESCRIPTION	REAL VALUE	PERS VALUE	TOTAL VALUE
134-007-046	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-073	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-074	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-078	Government Center	Center – Not Constructed	\$100,000		\$100,000
080-070-078	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
080-067-021	Well #1	Domestic Water Well	\$1,965,835		\$1,965,835
080-069-023	Well #2	Domestic Water Well	\$1,965,835		\$1,965,835
134-007-026	Police Services Building	City Building	\$280,778	\$88,548	\$369,326
134-007-026	Storage Building	City Building	\$27,141	\$16,353	\$43,494
080-041-005	Riverside Lift Station	Sewage Lift Station	\$104,609		\$104,609
080-036-022	City ROW	ROW – Easement	\$10,000		\$10,000
080-066-023	City ROW	ROW – Easement	\$10,000		\$10,000
134-007-069	City Hall	City Building	\$151,256	\$103,887	\$255,143
134-011-019	City ROW	ROW – Easement	\$10,000		\$10,000
134-012-005	Corporation Yard	City Building	\$88,530	\$52,828	\$141,358
080-018-034	Storm Drainage Basin	Borax Court	\$250,000		\$250,000
080-057-066	Storm Lift Station	Kadota Avenue	\$125,000		\$125,000
134-010-064	Triangle Park	Park – Not Constructed	\$150,000		\$150,000
080-041-007	Lower Reinway Park	Park – Not Constructed	\$150,000		\$150,000
Easement	Western Lift Station	Sewage Lift Station	\$104,609		\$104,609
Easement	Baker Lift Station	Sewage Lift Station	\$51,100	\$50,313	\$101,413
134-012-005	Corporation yard	Shelter Structure	\$7,358		\$7,358
080-009-001	WWTP Facility	Percolation Ponds	\$100,000		\$100,000
080-041-005	WWTP Facility	Office / Lab	\$146,248	\$113,076	\$259,324
080-041-005	WWTP Facility	Equipment Storage Building	\$89,879	\$11,321	\$101,200
080-041-005	WWTP Facility	Pump House	\$20,465	\$27,922	\$48,387

<b>APN</b>	<b>NAME</b>	<b>DESCRIPTION</b>	<b>REAL VALUE</b>	<b>PERS VALUE</b>	<b>TOTAL VALUE</b>
080-041-005	WWTP Facility	Aeration Lagoons		\$724,494	\$724,494
080-041-005	WWTP Facility	Headworks	\$35,293	\$27,797	\$63,090
080-041-005	WWTP Facility	Storage Container	\$13,626	\$8,050	\$21,676
080-057-009	Self Help Storm Basin	Washburn Avenue	\$250,000		\$250,000
134-028-012	Beard Park / Community Center	Picnic Shelter (Small)	\$24,664		\$24,664
134-028-012	Beard Park / Community Center	Community Center Building	\$1,009,457	\$96,725	\$1,106,182
134-028-012	Beard Park / Community Center	Concession Stand	\$30,598	\$5,282	\$35,880
134-028-012	Beard Park / Community Center	Restroom	\$30,918		\$30,918
134-028-012	Beard Park / Community Center	Picnic Shelter (Large)	\$224,677		\$224,677
134-028-012	Beard Park / Community Center	Restroom	\$57,503		\$57,503
134-028-012	Beard Park / Community Center	Storage Building	\$13,626		\$13,626
134-002-033	Museum	Historical Museum	\$218,591	\$32,516	\$251,107
080-007-068	Upper Reinway Park	Park – Not Constructed	\$1,200,000		\$1,200,000
080-035-004	Riverwalk Park	Picnic Shelter	\$14,466		\$14,466
080-035-004	Riverwalk Park	Restroom	\$149,482		\$149,482
080-066-051	Basin Park	Goldmine Storm Basin	\$125,000		\$125,000
134-003-021	Brethren Park	Park – Not Constructed	\$85,000		\$85,000
134-018-091	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
134-003-022	Brethren Park	Park – Not Constructed	\$37,896		\$37,896
134-010-044	528 D Street	Single Family Residence	\$60,017		\$60,017
<b>Grand Total</b>		<b>Count = 47</b>	<b>\$9,939,457</b>	<b>\$1,369,112</b>	<b>\$11,308,569</b>
<b>% of Waterford Facilities</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

# 2010 Stanislaus County (South) Facilities Map -- Earthquake Hazard



Map of Stanislaus County Assets in Southern portion of county in relation to Earthquake Shaking Zones at Peak Ground Acceleration

Prepared by:  
Stanislaus County  
Public Works - GIS  
November, 2009

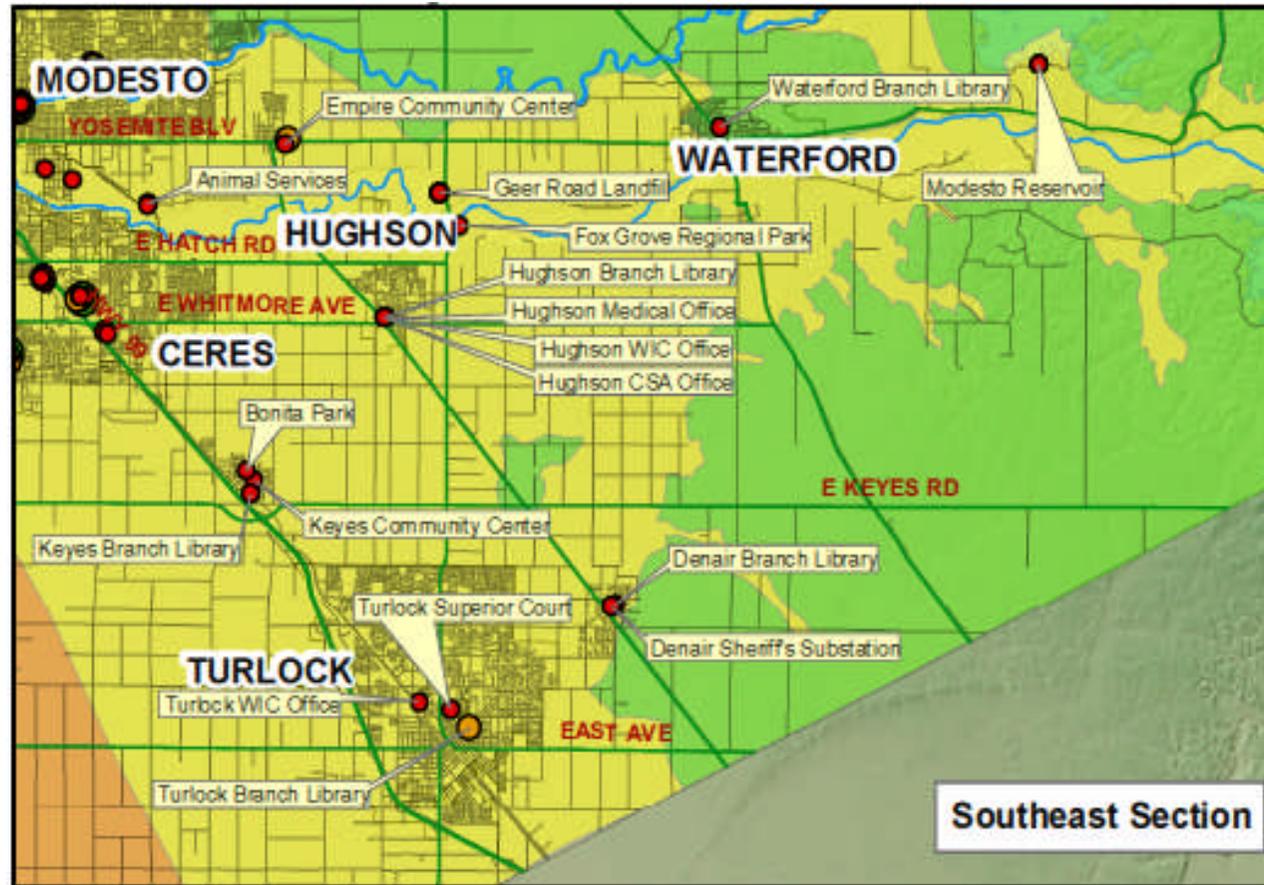
**Map Legend:**

- Lakes
- Rivers
- Roads

**Shaking Potential**  
Peak Ground Acceleration

	0.45 G's
	0.35 G's
	0.25 G's
	0.15 G's
	0.05 G's

Intensity



**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

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**REQUIREMENT - §201.6(C)(2)(i), §201.6(C)(2)(ii), §201.6(C)(2)(ii)(B), §201.6(C)(2)(ii)(C)**

**4.2 LANDSLIDE**

<b>NATURAL HAZARD</b>	<b>HOW IDENTIFIED</b>	<b>WHY IDENTIFIED</b>
<b>LANDSLIDE</b>	<ul style="list-style-type: none"> <li>• City General Plan Safety Element</li> <li>• County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Poses limited risk to City population and assets.</li> </ul>

*A. Overview*

A landslide is the downhill movement of masses of earth material under the force of gravity. Movement may be very rapid, or so slow that a change of position can be noted only over a period of weeks or years. The size of a landslide can range from several square feet to several square miles. In our area, most hazards due to landslides are limited to areas within the foothills.

*B. Location – Extent*

Landslides generally occur on slopes of 15 percent or greater. The planning area's topography, particularly along the Tuolumne River and Dry Creek, exhibit steep slopes that are extremely vulnerable to landslides. These slopes are considered sufficient to produce sliding associated with seismic activity. In the event of a landslide we could call on the Stanislaus County GIS system to identify the land use, population and valuation risks in the area affected.

*C. Previous Occurrences*

There is no history of landslides throughout the City of Waterford.

*D. Probability of Occurrence*

The probability of a landslide, however slight, does exist, especially along river bluff regions near rivers and streams. These areas are prone to natural erosion but erosion activity may increase during wet weather events.

The City will use it's current local codes along with the State and Federal laws to ensure that development does not occur that would be exposed to a landslide hazard.

*E. Vulnerability and Impact*

No city facilities, major buildings, or critical infrastructure are located at sites having an area history of landslide risk. It is anticipated that the most likely impact would be related to the indirect effects of a landslide.

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

**REQUIREMENT - §201.6(C)(2)(i), §201.6(C)(2)(ii), §201.6(C)(2)(ii)(B), §201.6(C)(2)(ii)(C)**

**4.3 DAM FAILURE**

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
<b>DAM FAILURE</b>	<ul style="list-style-type: none"> <li>• City General Plan Safety Element</li> <li>• County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Poses risk to City Population and assets.</li> </ul>

*A. Overview*

Dam failure is the collapse or failure of an impoundment that causes significant downstream flooding. A severe storm, earthquake or erosion of the embankment and foundation leakage may cause the collapse and structural failure of a dam. Seismic activity may also cause inundation by the action of a seismically induced wave that overtops the dam without causing failure of the dam, but significant flooding downstream.

*B. Location – Extent*

The Don Pedro Dam is located in Tuolumne County on the upper Tuolumne River and it could have a direct effect on the City of Waterford if it were to fail. It has gross pool capacity of 2,030,000-acre feet and is operated jointly by the Modesto and Turlock Irrigation Districts and the City of San Francisco.

The location and extent of a Dam Failure are depicted in the attached Dam Failure Inundation map and Affected Facilities and Loss Estimates listing.

*C. Previous Occurrences*

There have been no previous occurrences.

*D. Probability of Occurrence*

Although highly unlikely, the catastrophic failure of Don Pedro Dam would have severe consequences. Foremost, are injuries, loss of life, limited transportation routes, and a decrease in vital utilities.

Evacuation routes out of town would be south, primarily using J9/Hickman Road and north, primarily using J9/Oakdale-Waterford Highway. Residents would be informed not to go to Modesto for it will flood. Residents would be notified to go toward Turlock/Merced and Riverbank/Oakdale.

Inundation from Dam Failure as depicted would be an extraordinary occurrence with little probability.

*E. Vulnerability and Impact*

Failure of the Don Pedro Dam will have a significant direct effect on the City of Waterford. Should this dam fail, the City of Waterford would be inundated as illustrated by the attached inundation map. Lake Don Pedro’s inundation area covers the entire portion of the City’s planning area along the Tuolumne River corridor. This area contains Highway 132, a major east-west transportation corridor through the region. The entire inundation area is developed with a mixture of residential, commercial, and industrial uses.

# LOCAL HAZARD MITIGATION PLAN

## City of Waterford Facilities Dam Failure Hazard

APN	NAME	DESCRIPTION	REAL VALUE	PERS VALUE	TOTAL VALUE
134-007-046	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-073	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-074	Government Center	Center – Not Constructed	\$100,000		\$100,000
134-007-078	Government Center	Center – Not Constructed	\$100,000		\$100,000
080-070-078	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
080-067-021	Well #1	Domestic Water Well	\$1,965,835		\$1,965,835
080-069-023	Well #2	Domestic Water Well	\$1,965,835		\$1,965,835
134-007-026	Police Services Building	City Building	\$280,778	\$88,548	\$369,326
134-007-026	Storage Building	City Building	\$27,141	\$16,353	\$43,494
080-041-005	Riverside Lift Station	Sewage Lift Station	\$104,609		\$104,609
080-036-022	City ROW	ROW – Easement	\$10,000		\$10,000
080-066-023	City ROW	ROW – Easement	\$10,000		\$10,000
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134-011-019	City ROW	ROW – Easement	\$10,000		\$10,000
134-012-005	Corporation Yard	City Building	\$88,530	\$52,828	\$141,358
080-018-034	Storm Drainage Basin	Borax Court	\$250,000		\$250,000
080-057-066	Storm Lift Station	Kadota Avenue	\$125,000		\$125,000
134-010-064	Triangle Park	Park – Not Constructed	\$150,000		\$150,000
080-041-007	Lower Reinway Park	Park – Not Constructed	\$150,000		\$150,000
Easement	Western Lift Station	Sewage Lift Station	\$104,609		\$104,609
Easement	Baker Lift Station	Sewage Lift Station	\$51,100	\$50,313	\$101,413
134-012-005	Corporation yard	Shelter Structure	\$7,358		\$7,358
080-009-001	WWTP Facility	Percolation Ponds	\$100,000		\$100,000
080-041-005	WWTP Facility	Office / Lab	\$146,248	\$113,076	\$259,324
080-041-005	WWTP Facility	Equipment Storage Building	\$89,879	\$11,321	\$101,200
080-041-005	WWTP Facility	Pump House	\$20,465	\$27,922	\$48,387

<b>APN</b>	<b>NAME</b>	<b>DESCRIPTION</b>	<b>REAL VALUE</b>	<b>PERS VALUE</b>	<b>TOTAL VALUE</b>
080-041-005	WWTP Facility	Aeration Lagoons		\$724,494	\$724,494
080-041-005	WWTP Facility	Headworks	\$35,293	\$27,797	\$63,090
080-041-005	WWTP Facility	Storage Container	\$13,626	\$8,050	\$21,676
080-057-009	Self Help Storm Basin	Washburn Avenue	\$250,000		\$250,000
134-028-012	Beard Park / Community Center	Picnic Shelter (Small)	\$24,664		\$24,664
134-028-012	Beard Park / Community Center	Community Center Building	\$1,009,457	\$96,725	\$1,106,182
134-028-012	Beard Park / Community Center	Concession Stand	\$30,598	\$5,282	\$35,880
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134-028-012	Beard Park / Community Center	Restroom	\$57,503		\$57,503
134-028-012	Beard Park / Community Center	Storage Building	\$13,626		\$13,626
134-002-033	Museum	Historical Museum	\$218,591	\$32,516	\$251,107
080-007-068	Upper Reinway Park	Park – Not Constructed	\$1,200,000		\$1,200,000
080-035-004	Riverwalk Park	Picnic Shelter	\$14,466		\$14,466
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080-066-051	Basin Park	Goldmine Storm Basin	\$125,000		\$125,000
134-003-021	Brethren Park	Park – Not Constructed	\$85,000		\$85,000
134-018-091	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
134-003-022	Brethren Park	Park – Not Constructed	\$37,896		\$37,896
134-010-044	528 D Street	Single Family Residence	\$60,017		\$60,017
<b>Grand Total</b>		<b>Count = 47</b>	<b>\$9,939,457</b>	<b>\$1,369,112</b>	<b>\$11,308,569</b>
<b>% of Waterford Facilities</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

# 2010 Stanislaus County (South) Facilities Map -- Dam Inundation Hazard



Map of Stanislaus County Assets in the Southern County area in relation to Dam Inundation Areas of regional dams.

Prepared by:  
Stanislaus County  
Public Works - GIS  
November, 2009

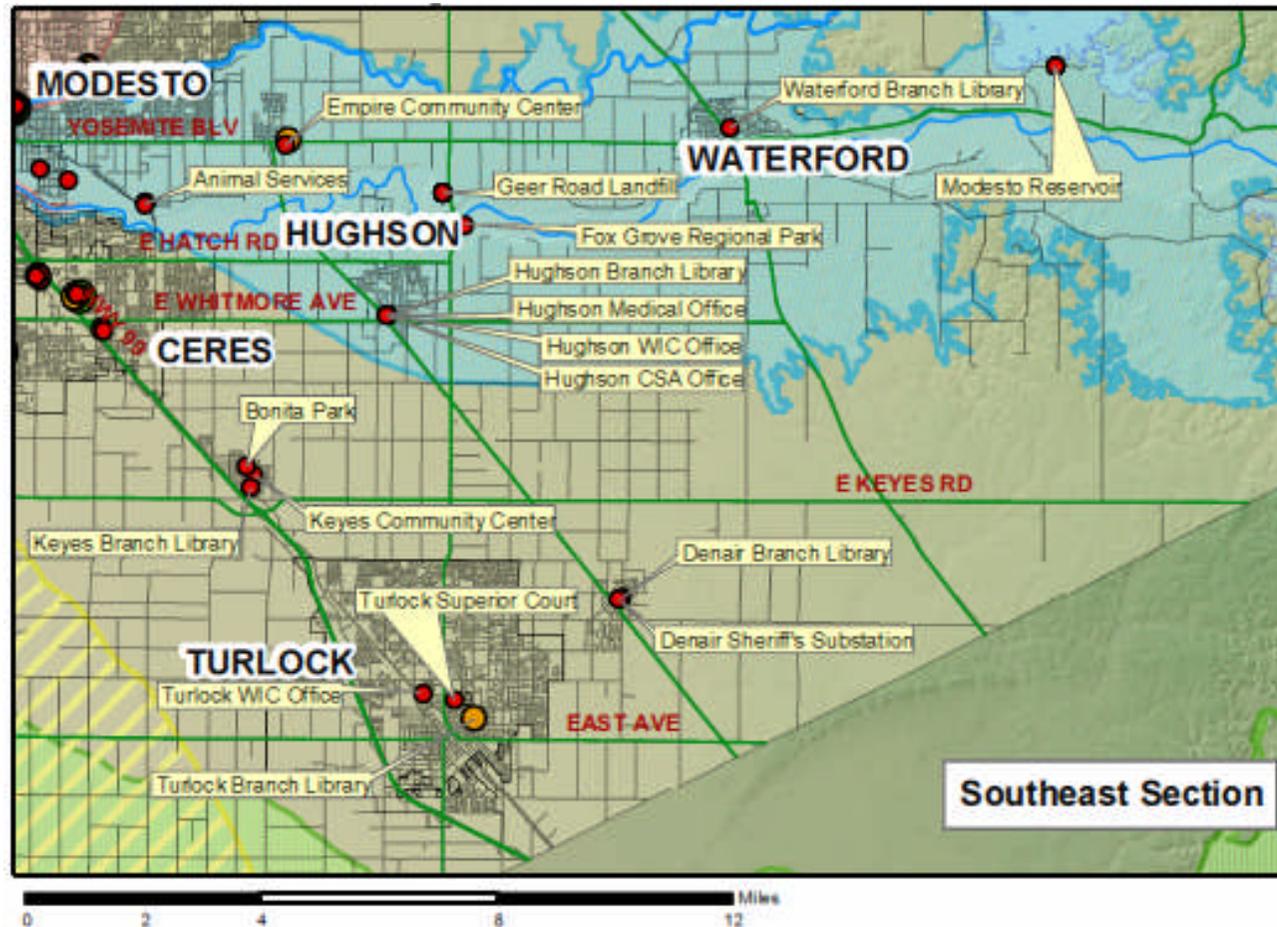
### Map Legend:

- Lakes
- Rivers
- Roads

### Dam Inundation Areas

#### Dam Name

- Don Pedro
- Exchequer
- New Melones
- San Luis
- Pine Flat
- Tulloch



**Southeast Section**

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

**REQUIREMENT - §201.6(C)(2)(i), §201.6(C)(2)(ii), §201.6(C)(2)(ii)(B), §201.6(C)(2)(ii)(C)**

**4.4 FLOOD**

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
<b>FLOOD</b>	<ul style="list-style-type: none"> <li>• City General Plan Safety Element</li> <li>• County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Poses risk to City population and assets</li> </ul>

*A. Overview*

A flood is a natural event for rivers or streams. Floods are considered hazards when people and property are affected. Most flood conditions occur from heavy, prolonged rain or rapid snow thaw. Flooding may involve property loss, loss and damage to agricultural land, and interruption of government infrastructure.

*B. Location – Extent*

The primary flood control concerns for the City of Waterford are the controlled or uncontrolled releases from the Don Pedro Dam onto the Tuolumne River. The location and extent of a Flood Hazard are depicted in the attached Flood Hazard Map and City Facilities listing potential loss.

*C. Previous Occurrences*

The Tuolumne River has had a history of flooding in the past. However, even during its worst stages, the City of Waterford was not significantly affected, in that it did not lose any City infrastructure, facilities or residential units due to flooding.

*D. Probability of Occurrence*

In the past years, substantial action has been taken to reduce flood hazards. The construction of Don Pedro Dam on the Tuolumne River has permitted officials to monitor flows of water in those rivers, significantly reducing the chances of flooding.

According to the Flood Insurance rate maps (F.I.R.M.) for the area, only a few narrow bands of land along the Tuolumne River corridor are identified as flood-prone areas which were required to be recognized by the Federal Flood Disaster protection Act.

The City of Waterford has discouraged development in areas where there is poor soil percolation and flood plains unless measures to mitigate the problems are included in the development proposal. Currently development is not allowed in areas within the designated floodplain.

*E. Vulnerability and Impact*

Although unlikely, flooding could involve extensive life and property loss, and damage to agricultural land, and interruption of government infrastructure.

The likely impact of a flood hazard would be the indirect impact of support and mutual aid to other cities and the county, in areas more prone to severe flood conditions.

*F. Repetitive Loss Properties*

Currently the City has no identified structures in areas that have been identified as repetitive loss areas. The City currently participates in the National Flood Insurance Program (NFIP).

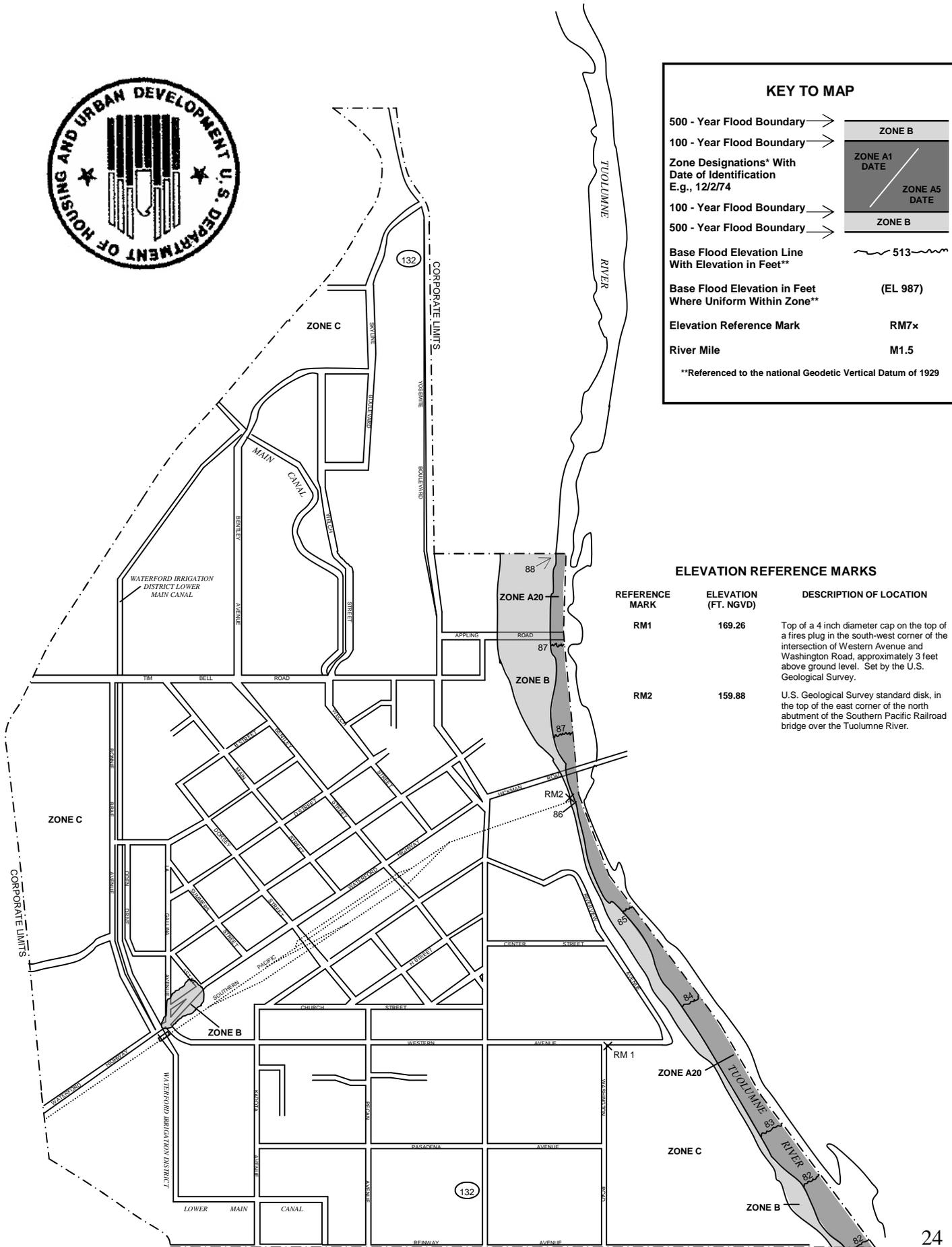
Attached for reference is a map outlining areas identified as repetitive loss areas.

# LOCAL HAZARD MITIGATION PLAN

## City of Waterford Facilities Flood Hazard

APN	NAME	DESCRIPTION	REAL VALUE	PERS VALUE	TOTAL VALUE
080-070-078	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
Easement	Baker Lift Station	Sewage Lift Station	\$51,100	\$50,313	\$101,413
080-009-001	WWTP Facility	Percolation Ponds	\$100,000		\$100,000
080-041-005	WWTP Facility	Office / Lab	\$146,248	\$113,076	\$259,324
080-041-005	WWTP Facility	Equipment Storage Building	\$89,879	\$11,321	\$101,200
080-041-005	WWTP Facility	Pump House	\$20,465	\$27,922	\$48,387
080-041-005	WWTP Facility	Aeration Lagoons		\$724,494	\$724,494
080-041-005	WWTP Facility	Headworks	\$35,293	\$27,797	\$63,090
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080-035-004	Riverwalk Park	Picnic Shelter	\$14,466		\$14,466
080-035-004	Riverwalk Park	Restroom	\$149,482		\$149,482
134-018-091	River Park Trail	Bike / Pedestrian Trail	\$75,000	\$5,000	\$80,000
<b>Grand Total</b>		<b>Count = 12</b>	<b>\$770,559</b>	<b>\$972,973</b>	<b>\$1,743,532</b>
<b>% of Waterford Facilities</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

# U.S. Department of Housing and Urban Development—Flood Hazard



### KEY TO MAP

500 - Year Flood Boundary →

100 - Year Flood Boundary →

Zone Designations\* With Date of Identification  
E.g., 12/2/74

100 - Year Flood Boundary →

500 - Year Flood Boundary →

Base Flood Elevation Line With Elevation in Feet\*\*

Base Flood Elevation in Feet Where Uniform Within Zone\*\*

Elevation Reference Mark

River Mile

\*\*Referenced to the national Geodetic Vertical Datum of 1929

ZONE B
ZONE A1 DATE
ZONE A5 DATE
ZONE B

513

(EL 987)

RM7x

M1.5

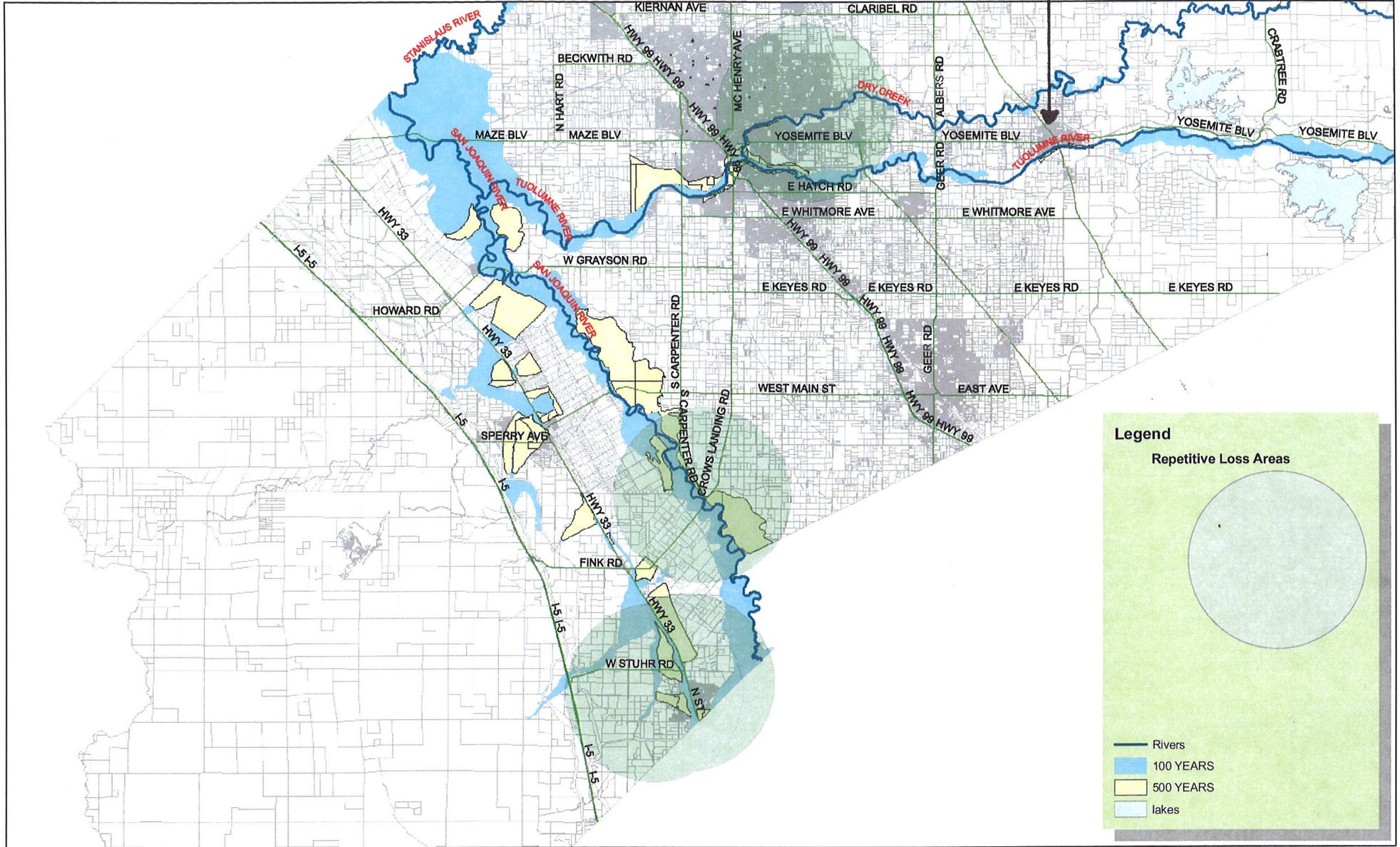
### ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM1	169.26	Top of a 4 inch diameter cap on the top of a fires plug in the south-west corner of the intersection of Western Avenue and Washington Road, approximately 3 feet above ground level. Set by the U.S. Geological Survey.
RM2	159.88	U.S. Geological Survey standard disk, in the top of the east corner of the north abutment of the Southern Pacific Railroad bridge over the Tuolumne River.

20,000 10,000 0 20,000 Feet

# Repetitive Loss Areas

WATERFORD



SR

**CITY OF WATERFORD  
HAZARD MITIGATION PLAN  
RISK ASSESSMENT**

**REQUIREMENT - §201.6(C)(2)(i), §201.6(C)(2)(ii), §201.6(C)(2)(ii)(B), §201.6(C)(2)(ii)(C)**

**4.5 WILD FIRE**

NATURAL HAZARD	HOW IDENTIFIED	WHY IDENTIFIED
<b>WILD FIRE</b>	<ul style="list-style-type: none"> <li>• City General Plan Safety Element</li> <li>• County Emergency Operations Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Poses limited risk to City population and assets.</li> <li>• City is adjacent to natural open spaces and rural interface areas.</li> </ul>

*A. Overview*

Wild fire hazards can be traced to four causes; topography, vegetation, climate, and people. Wildfires are ignited 90 percent of the time by human action. The fires often begin unnoticed, spreading very quickly, and are usually signaled by dense smoke that fills the air in the immediate area.

If not promptly controlled, wildfires may grow into an emergency or disaster. Firestorms occur during extreme weather with such intensity that fire suppression is virtually impossible. These events typically burn until the conditions change or the fuel is exhausted. Even small fires can threaten lives and resources and destroy improved properties.

*B. Location – Extent*

The City of Waterford is not normally susceptible to wildfires, however, there is still potential for smaller fires in and around the less developed areas located inside the city where patches of vegetation are present.

*C. Previous Occurrences*

Waterford has never had an occurrence of a wild fire.

*D. Probability of Occurrence*

It is highly unlikely that Waterford would be affected directly by a wildfire. However, in an effort to prevent possible wild land fires before they start, the City's weed abatement program requires that vegetation on vacant lots be plowed under or mowed down if it is not irrigated agricultural land. The Police/Fire Departments and the Code Enforcement Officer combine to make sure that abandoned vehicles or buildings (potential fire hazards) are removed.

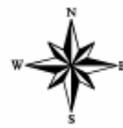
The City general Plan, Zoning Ordinance, and Subdivision Ordinance contain standards to minimize fire hazards within the city.

*E. Vulnerability and Impact*

Wild land fire hazards exist in varying degrees over large areas of Stanislaus County, mostly outside urban areas in the foothills and areas used for livestock grazing. Wild land fire hazards exist to the east of Waterford outside of the City limits, in areas with the least density of development such as ranches, farmland, and pasture properties. As illustrated in the attached map the City of Waterford is well outside identified wildfire areas.

It is possible that the most likely impact to the City of Waterford may well be related to the indirect effects of a wild fire in areas to the east of the City. These residual environmental, health, and logistical issues could severely tax the capabilities of local resources.

# Stanislaus County (East) Facilities Map -- Wildfire Hazard



Map of Stanislaus County Assets in Eastern portion of the county in relation to Historical Wildfire Areas with proximity zones radiating out to five miles.

Prepared by:  
Stanislaus County  
Public Works - GIS  
November, 2009

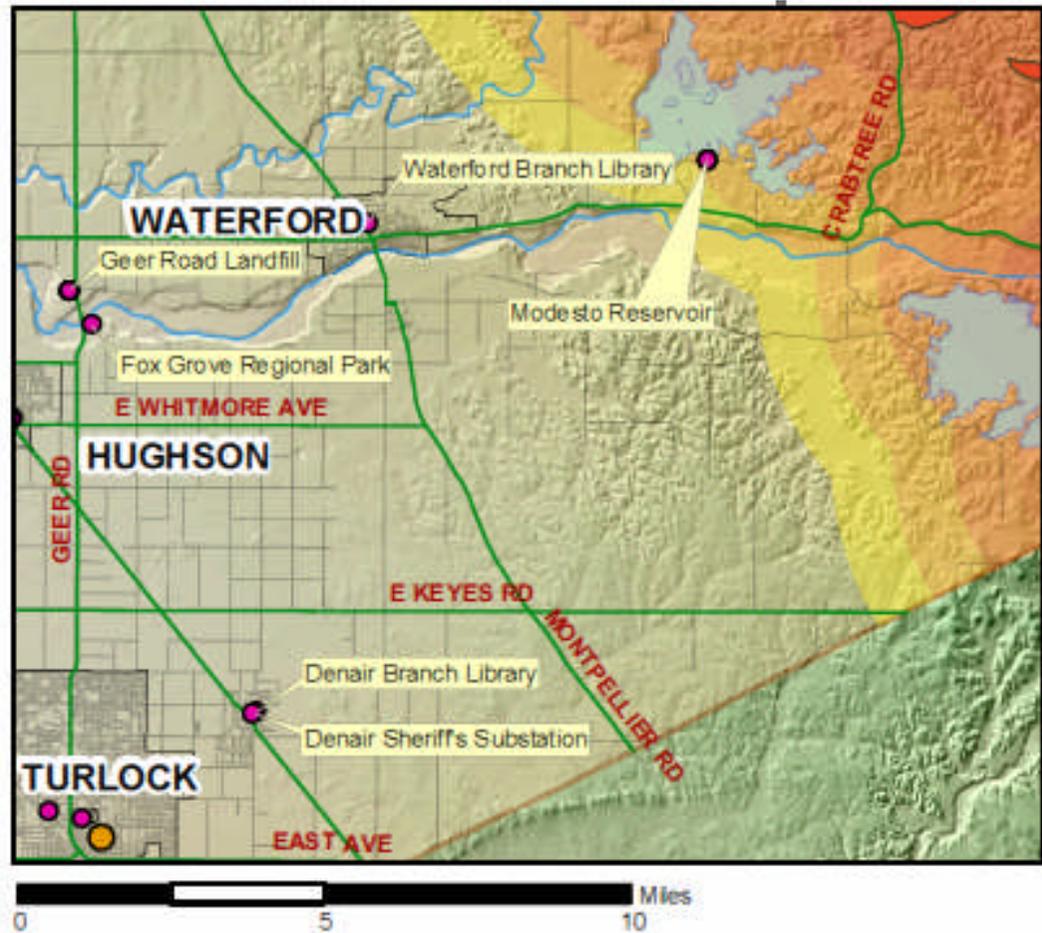
**Map Legend:**

- Lakes
- Rivers
- Roads

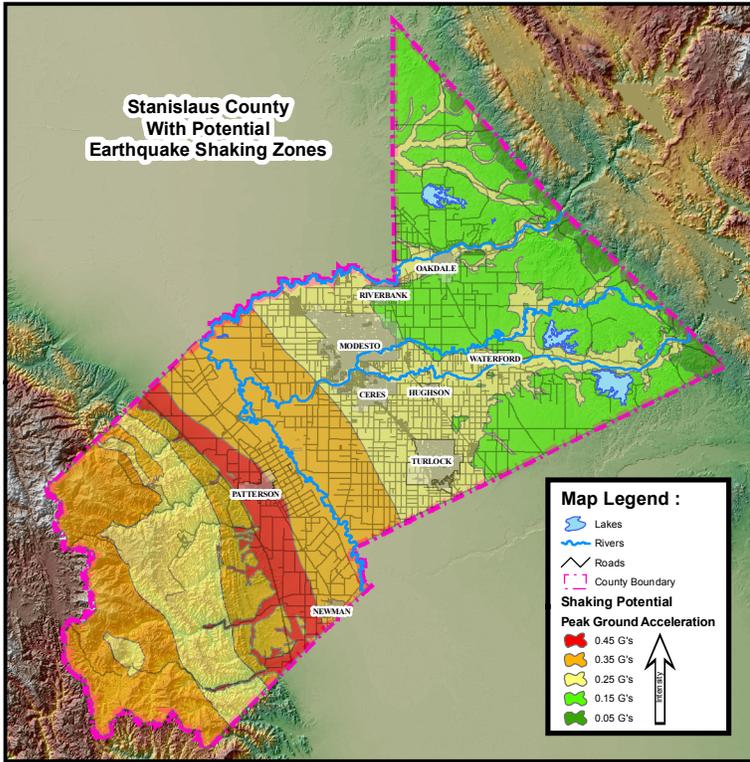
**County Facilities**

**Distance From Actual Wildfires**

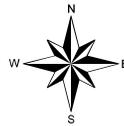
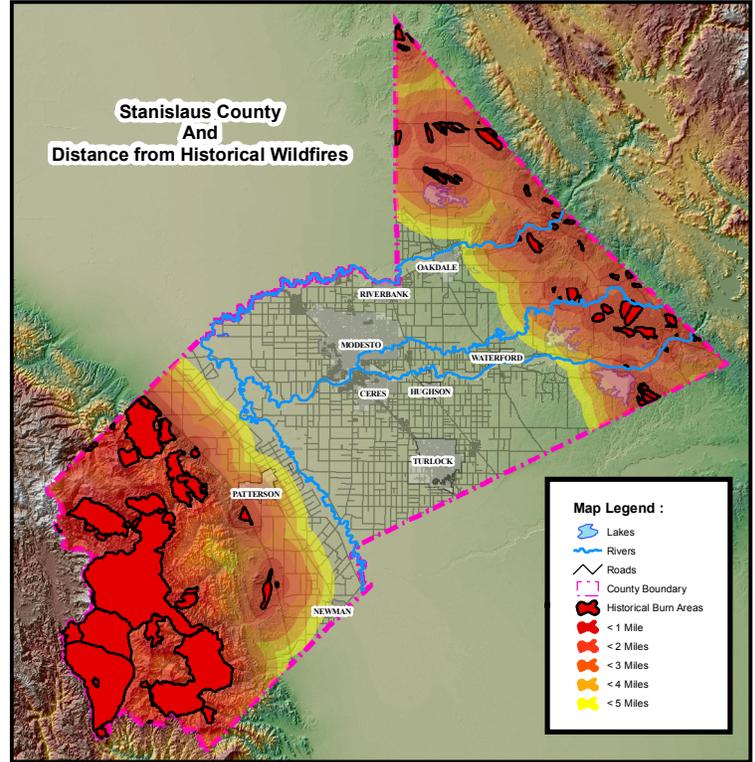
- < 1 Mile
- < 2 Miles
- < 3 Miles
- < 4 Miles
- < 5 Miles



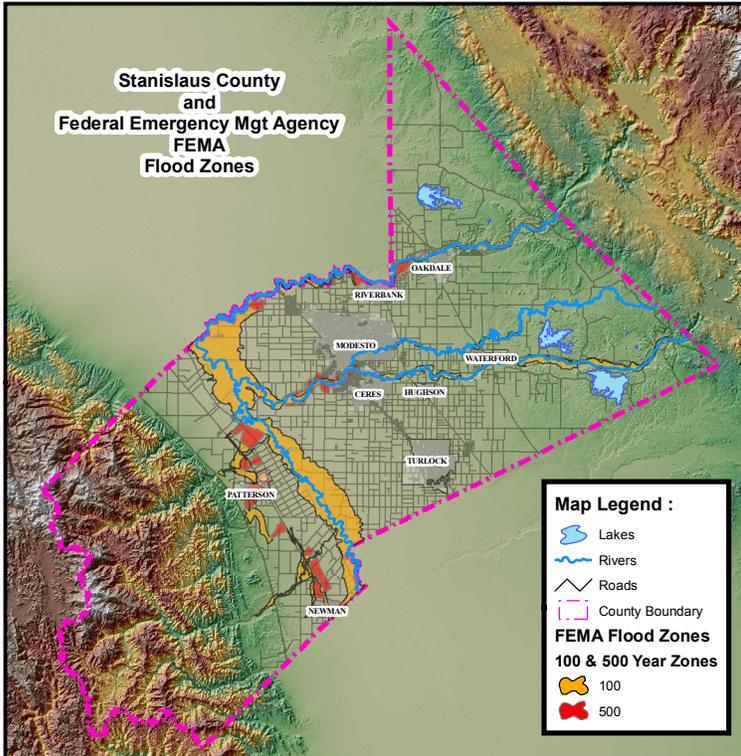
## EARTHQUAKE HAZARD



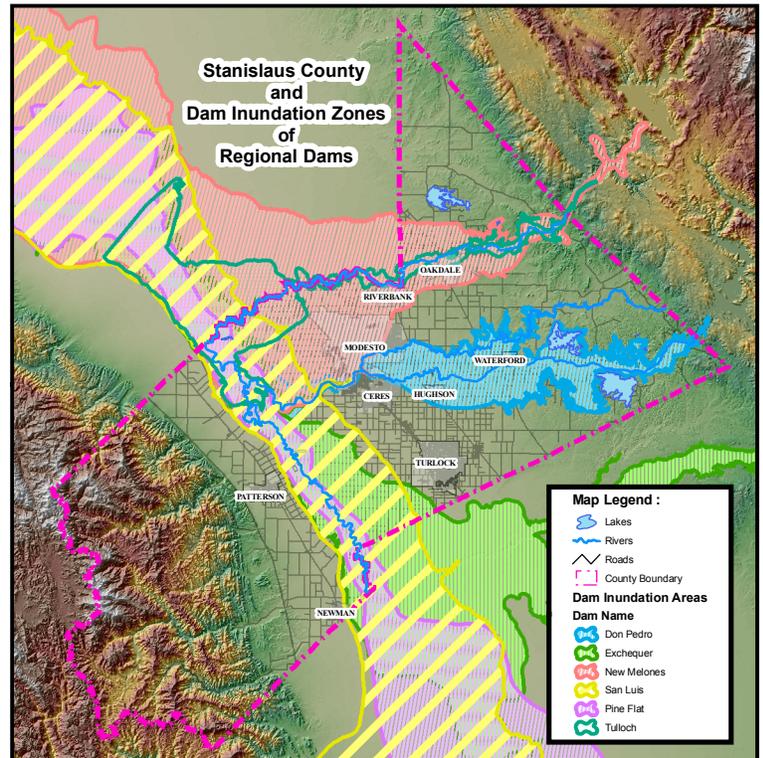
## WILDFIRE HAZARD



## FLOOD HAZARD



## DAM INUNDATION HAZARD



**REQUIREMENT - §201.6(C)(3)(i)**

**5. MITIGATION STRATEGY**

**5.1 LOCAL HAZARD MITIGATION GOALS**

The City of Waterford Hazard Mitigation Planning Committee met to review and analyze the risk assessment studies that were performed by the City. The Committee developed goals and objectives based on the risk assessment studies and selected those that were determined to be of greatest benefit in hazard reduction to the City. The goals and objectives are as follows:

**A. EARTHQUAKE**

- Goal* Minimize damage associated with earthquakes.
- Objective 1*
- a. Implement measures to minimize damage from earthquakes.
  - b. Protect life and property resulting from upset conditions associated with earthquakes.

**B. LANDSLIDES**

- Goal* To prevent damage associated with landslides.
- Objective 1*
- a. Protect the safety of our residents from know hazards.

**C. DAM FAILURE**

- Goal* To get residents out of harms way.
- Objective 1*
- a. Facilitate a calm and safe evacuation of the City.

**D. FLOODING**

- Goal* Reduce flood damage in Waterford.
- Objective 1*
- a. Minimize future damage due to the flooding of the Tuolumne River.
  - b. Minimize future damage due to storm events.

**E. WILD FIRE**

- Goal* To prevent damage associated with wild fires.
- Objective 1*
- a. Implement measures to minimize damage from wild fire.
  - b. Protect life and property resulting from conditions associated with wild fires.

**REQUIREMENT - §201.6(C)(3)(ii)**

**5.2 IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS**

The City of Waterford identified a number of hazard mitigation actions and projects. The Planning Committee, with input from local government agencies, has selected the following actions as the most beneficial for the City of Waterford. These actions are listed following the goals and objectives. What follows are the most vulnerable areas identified in the risk assessment and the highest priority mitigation actions identified for those areas.

- River Pointe Housing Subdivision – Located along the Tuolumne River.
- Waterford Wastewater Treatment Facility – Located along the Tuolumne River.

The following are the most appropriate actions by goal:

**A. EARTHQUAKE**

- |                    |  |
|--------------------|--|
| <i>Goal</i>        | Minimize damage associated with earthquakes.   |
| <i>Objective 1</i> | Reduce the potential danger from earthquake and seismic-related activity from existing buildings where necessary.  |
| <i>Action</i>      | <ol style="list-style-type: none"><li>a. Continue to examine plans and perform inspections in accordance with the California Building standards.</li><li>b. Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel.</li><li>c. Encourage downtown revitalization efforts to include seismic retrofitting of historic structures.</li><li>d. Study the possibility of obtaining State Historic Preservation, Community Development Block Grant, Redevelopment, or other available money to assist with repairs of unsafe buildings.</li></ol> |
| <i>Objective 2</i> | Protect life and property resulting from upset conditions associated with earthquakes.   |
| <i>Action</i>      | <ol style="list-style-type: none"><li>a. Follow the procedures outlined in the Emergency Operations Plan for the City of Waterford.</li><li>b. Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate emergency responses as well as evacuation procedures.</li></ol>   |

**B. LANDSLIDES**

- |                    |   |
|--------------------|---|
| <i>Goal</i>        | To prevent damage associated with landslides.   |
| <i>Objective 1</i> | Protect the safety of our residents from known hazards.   |
| <i>Action</i>      | <ol style="list-style-type: none"><li>a. Follow the procedures outlined in the Emergency Operations Plan of the City of Waterford.</li><li>b. Establish setbacks for all structures from known landslide prone areas.</li></ol> |

- c. Implement and ensure compliance with all provisions of the City's grading ordinance.

**C. DAM FAILURE**

*Goal* To get residents out of harms way.

*Objective 1* Facilitate a calm and safe evacuation of the City.

- Action*
- a. Follow the procedures outlined in the Emergency Operations Plan of the City of Waterford.
  - b. Put emergency preparedness information on our web site, informing residents of the need to flee to Oakdale/Riverbank or Turlock/Merced in case of dam failure.

**D. FLOODING**

*Goal* Reduce flood damage in Waterford.

*Objective 1* Minimize future damage due to the flooding of the Tuolumne River.

- Action*
- a. Continue to enforce the provisions of the flood plain management overlay district of the zoning code.
  - b. Ensure that future improvements to Waterford Wastewater Treatment Plant will take into account periodic flooding of Tuolumne River to ensure that minimal damage is done.
  - c. Continue to review all development proposals to assure compliance with flood prone area regulations and limit annexation of such areas, except open space areas, from being considered for annexation to the City.
  - d. Work with the Corp of Engineers to ensure that periodic inspections of levies are done along the Tuolumne River.

*Objective 2* Minimize future damage due to storm events.

- Action*
- a. Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events.
  - b. Continue to implement the Storm Water Prevention Plan to minimize the risk of contamination association with flooding event.
  - c. Follow the procedures outlined in the Emergency Operations Plan for the City of Waterford.

**E. WILD FIRE**

*Goal* To prevent damage associated with wild fires.

*Objective 1* Implement measures to minimize damage from wild fires.

- Action*
- a. Follow the procedures outlined in the Emergency Operations Plan for City of Waterford.

*Objective 2* Protect life and property resulting from conditions associated with wild fires.

- Action*
- a. Implement and ensure compliance with all provisions of City Weed Abatement Ordinance.
  - b. Expand the present nuisance abatement program to include a height limit on weeds during the dry season (mid-April through mid-November) in both vacant and developed lots, abandoned vehicles, and vacant buildings.

**CITY OF WATERFORD  
LOCAL HAZARD MITIGATION PLAN  
MITIGATION STRATEGY**

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**REQUIREMENT - §201.6(C)(3)(iii)**

**5.3 IMPLEMENTATION OF MITIGATION ACTIONS**

The City of Waterford has identified several hazard mitigation actions to be included in the Hazard Mitigation Plan. Table 3: Priority Actions lists actions by hazard. Table 4: Implementation Strategy contains these actions, along with the responsible agency, the funding source, and implementation time frame.

The City of Waterford will utilize a combination of funding sources to ensure proper funding levels. Funding sources may be used to improve all areas as identified in the STAPLE+E process. These sources include:

- System Development Fees from new development in identified hazard areas.
- Grant funding sources.
- General Fund.
- Other sources as identified by the Capital Improvement Program.

The Mitigation Planning Team prioritized the actions using the STAPLE+E criteria, a planning tool used to evaluate alternative actions. The following table explains the STAPLE+E criteria.

**TABLE 2 – STAPLE+E CRITERIA EXPLANATION**

<b>STAPLE+E</b>	<b>Criteria Explanation</b>
S – Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T - Technical	Mitigation actions are technically most effective if they provide long-term reduction of losses and have minimal secondary adverse impacts.
A - Administration	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P - Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L - Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E - Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective, as determined by a cost benefit review, and possible to fund.
E – Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

Each team member had an equal number of votes to use toward the actions that met the criteria best, based on their knowledge and expertise. The mitigation actions with highest priority were the most cost effective and most compatible with the communities' social and cultural values.

**TABLE 3 – PRIORITY ACTIONS**

<b>PRIORITY ACTIONS</b>		
<b>HAZARD</b>	<b>ACTION</b>	<b>PRIORITY</b>
<i>EARTHQUAKE</i>	Continue to examine plans and perform inspections in accordance with the California Building standards.	HIGH
	Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel.	HIGH
	Follow the procedures outlined in the Emergency Operations Plan for the City of Waterford.	HIGH
	Encourage downtown revitalization efforts to include seismic retrofitting of historical structures.	MEDIUM
	Reduce the potential danger from earthquake and seismic-related activity from existing buildings where necessary.	MEDIUM
	Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate emergency responses as well as evacuation procedures.	LOW
<i>LANDSLIDES</i>	Follow the procedures outlined in the Emergency Operations Plan of the City of Waterford.	HIGH
	Continue to establish setbacks for all structures from known landslide prone areas.	MEDIUM
	Implement and ensure compliance with all provisions of the City's grading ordinance.	MEDIUM
<i>DAM FAILURE</i>	Put emergency preparedness information on our web site, informing residents of the need to flee to Oakdale/Riverbank or Turlock/Merced in case of dam failure.	HIGH
	Follow the procedures outlined in the Emergency Operations Plan of the City of Waterford	HIGH
<i>FLOODING</i>	Continue to enforce the provisions of the flood plain management overlay district of the zoning code.	HIGH

	Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events.	HIGH
	Follow the procedures outlined in the Emergency Operations Plan for the City of Waterford.	HIGH
	Ensure that improvements to Waterford Wastewater Treatment Plant design will take into account periodic flooding of Tuolumne River to ensure that minimal damage is done.	HIGH
	Continue to review all development proposals to assure compliance with flood prone area regulations and limit annexation of such areas, except open areas, from being considered for annexation to the City.	MEDIUM
	Continue to implement the Storm Water Prevention Plant to minimize the risk of contamination association with flooding event.	MEDIUM
<i>WILD FIRE</i>	Follow the procedures outlined in the Emergency Operations Plan of the City of Waterford.	HIGH
	Implement and ensure compliance with all provisions of the City's weed abatement ordinance.	HIGH
	Expand the present nuisance abatement program to include a height limit on weeds during the dry season (mid-April through mid-November) in both vacant and developed lots, abandoned vehicles, and vacant buildings.	HIGH

**TABLE 4 – IMPLEMENTATION STRATEGY**

<b>IMPLEMENTATION STRATEGY</b>		
<b>ACTION/PRIORITY</b>	<b>RESPONSIBLE AGENCY</b>	<b>FUNDING AND TIMEFRAME/ DEADLINE</b>
Follow the procedures outlined in the Emergency Operations Plan for the City of Waterford. (HIGH)	City of Waterford Admin. Services, Planning Department, Emergency Coordinator, and Public Works Dept.	General Fund Ongoing
Continue to enforce the provisions of the flood plain management overlay district of the zoning code. (HIGH)	City of Waterford Planning Department	General Fund; System Development Fees Ongoing
Continue to require the construction of storm water management facilities with adequate size to alleviate periodic flooding associated with storm events. (HIGH)	City of Waterford Planning Department and Public Works Department	General Fund; System Development Fees; Grants Ongoing
Continue to examine plans and perform inspections in accordance with the California Building standards. (HIGH)	City of Waterford Planning Department, Building Department and Public Works	General Fund; System Development Fees; Grants Ongoing
Continue to build infrastructure designed by Registered Civil Engineers and inspected by certified personnel. (HIGH)	City of Waterford Planning Department and Public Works	General Fund; System Development Fees; Grants Ongoing
Put emergency preparedness information on our web site, informing residents of the need to flee to Oakdale/Riverbank or Turlock/Merced in case of dam failure. (HIGH)	City of Waterford Administrative Department.	General Fund; Grant Funding Ongoing
Implement and ensure compliance with all provisions of the City's weed abatement ordinance. (HIGH)	City of Waterford Police Services, Planning Department, Public Works Department, and Emergency Services.	General Fund; System Development Fees; Grants; Other Sources Ongoing
Expand the present nuisance abatement program to include a height limit on weeds during the dry season (mid-April through mid-November) in both vacant and developed lots, abandoned vehicles, and vacant buildings. (HIGH)	City of Waterford Police Services, Planning Department, Public Works Department, and Emergency Services.	General Fund; System Development Fees; Grants; Other Sources Ongoing
Ensure that improvements to Waterford Wastewater Treatment Plant design will take into account period flooding of Tuolumne River to ensure that minimal damage is done. (HIGH)	City of Waterford Planning Department, City Engineer, and Public Works Department.	General Fund; System Development Fees; Grants; Other Sources Ongoing

Review all development proposals to assure compliance with flood prone area regulations and limit annexation of such areas, except open space areas, from being considered for annexation to the City. (MEDIUM)	City of Waterford Planning Department, City Engineer, and Public Works Department.	General Fund; System Development Fees Ongoing
Continue to implement the Storm Water Prevention Plan to minimize the risk of contamination association with flooding event. (MEDIUM)	City of Waterford Planning Department and Public Works Department	General Fund; System Development Fees; Grant Funding Ongoing
Encourage downtown revitalization efforts to include seismic retrofitting OF historical structures. (MEDIUM)	City of Waterford Building Department, Planning Department, and Public Works Department	General Fund; System Development Fees; Grants; Other Sources Ongoing
Reduce the potential danger from earthquake and seismic-related activity from existing buildings where necessary. (MEDIUM)	City of Waterford Public Works Dept.	General Fund; Grants; Other Sources Ongoing
Continue to enforce setbacks for all structures from know landslide prone areas. (MEDIUM)	City of Waterford Building Department and Planning Department	General Fund
Implement and ensure compliance with all provisions of the City's engineering standard.. (MEDIUM)	City of Waterford Planning Department, City Engineer, and Public Works	General Fund
Facilitate massive evacuation by support and encourage the deployment of intelligent transportation devices to facilitate emergency responses as well as evacuation procedures. (LOW)	City of Waterford Police Services, Planning Department, Public Works Department, and Emergency Services.	General Fund; System Development Fees; Grants; Other Sources Ongoing

**CITY OF WATERFORD  
LOCAL HAZARD MITIGATION PLAN  
MITIGATION STRATEGY**

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**REQUIREMENT - §201.6(C)(3)(iv)**

**5.4 MULTI-JURISDICTIONAL MITIGATION ACTIONS**

Provided by Stanislaus County.

**REQUIREMENT - §201.6(C)(4)(ii)**

**6. PLAN MAINTENANCE**

**6.1 MONITORING, EVALUATING, AND UPDATING PLAN**

The HMP will be updated within the 5-year cycle, as required by the Disaster Mitigation Act. The Committee might choose to update the plan sooner if there is a compelling reason such as a natural disaster. The updated plan will account for any new developments or changes at the City. Issues that come up during monitoring and evaluation that require changes in mitigation strategies and actions will be incorporated in the updated HMP.

At its update meeting, the committee will review each goal and objective to determine their relevance to changing situations in the City, as well as changes in State or Federal policy, and to ensure that they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if the information should be updated or modified. The parties responsible for the various implementation actions will report on the status of their projects and will include which implementation processes worked well, any difficulties encountered, how coordination efforts were proceeding, and which strategies should be revised. Comments and recommendations offered by Committee members will be incorporated into the plan.

The Planning Department will have an opportunity to review the draft updated plan and make any necessary changes to the plan before submitting it back to the Committee members. If no changes are necessary, the State Hazard Mitigation Officer will be given a justification letter for this determination.

In addition, the City of Waterford has a number of other plans that will be considered and integrated into the Hazard Mitigation Plan as they undergo their regular updates:

- Safety Element of the General Plan
- Capital Improvement Plan
- Redevelopment Plan
- Emergency Operations Plan

The Hazard Mitigation Plan will take into account any changes made in any of these plans and incorporate information accordingly in its next update.

**CITY OF WATERFORD  
LOCAL HAZARD MITIGATION PLAN  
PLAN MAINTENANCE**

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**REQUIREMENT - §201.6(C)(4)(ii)**

**6.2 INCORPORATION INTO EXISTING PLANNING MECHANISMS**

The Planning Commission of the City of Waterford, acting as the Hazard Mitigation Plan Evaluation Committee, meets on a monthly basis, will provide a mechanism for ensuring that the actions identified in the plans are incorporated into on-going City of Waterford planning activities.

The City of Waterford currently utilizes comprehensive land use planning, capital improvements planning, and building codes to guide and control development within the City. After the City officially adopts the Hazard Mitigation Plan, these existing mechanisms will eventually have additional hazard mitigation strategies incorporated into them if needed.

After adoption of the Mitigation Plan, the City will require that property owners and the development community to address hazards into development projects. The Planning Department will conduct periodic reviews of the City's General Plan, analyze any General Plan Amendment and provide technical assistance to property owners and the development community in implementing these requirements.

The Building Division of the City of Waterford is responsible for administering the building codes in the City. After the adoption of the Mitigation Plan, they will continue to make sure that the City adopts, and is enforcing, the minimum standards established in the California Building Code.

The capital improvement planning that occurs in the future will also contribute to the goals in the Hazard Mitigation Plan. The City of Waterford Planning Department will work with the City Engineering and Public Works Department to secure high-hazard areas from low risk uses.

Within six months of the formal adoption of the Mitigation Plan, the applicable policies, if any, and listed actions above will be incorporated and implemented into the process of existing planning mechanisms.

**CITY OF WATERFORD  
LOCAL HAZARD MITIGATION PLAN  
PLAN MAINTENANCE**

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**REQUIREMENT - §201.6(C)(4)(iii)**

**6.3 CONTINUED PUBLIC INVOLVEMENT**

The City of Waterford is dedicated to involving the public directly in the continual evaluation and updating of the Hazard Mitigation Plan. The Hazard Mitigation Plan Evaluation Committee members are responsible for the required review and update of the plan. Although they represent the public to some extent, the public will be able to directly comment on and provide feedback about the plan, via various mechanisms.

A copy of the plan will be kept on hand at the public library in the City. Contained in the plan will be the address and phone number of the City Staff Member(s) responsible for accepting any public comments on the plan.

Copies of the plan and any proposed changes or modifications will be posted on the City Government Website. In addition, the City will include the use of local media outlets to alert and advise the public of items related to the update of the HMP.

A public meeting will also be held after each Mitigation Plan Evaluation/Update meeting. This meeting will provide the public a forum for which they can express concerns, opinions, or ideas about the plan. The City Planning Department will publicize and host this meeting. Following the meeting, the evaluation committee will review any comments/suggestions submitted and incorporate those items in the plan, as appropriate.