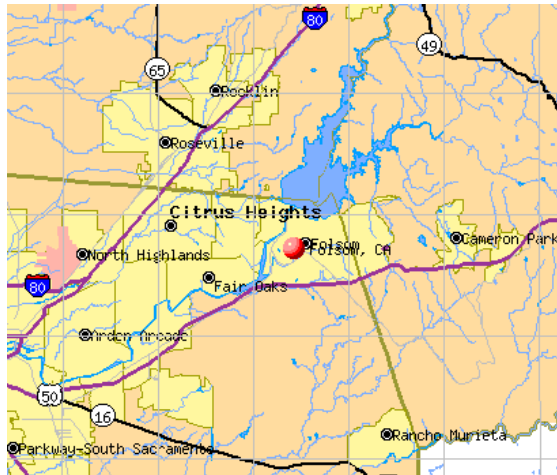


# Multi-Hazard Mitigation Plan

## 6.5 Folsom Community Element



### CITY OF FOLSOM COMMUNITY PROFILE

Folsom is conveniently located 20 miles east of California's state capitol in Sacramento and about halfway between San Francisco and Lake Tahoe. Folsom is bordered on the north by Folsom Lake, an 18,000-acre lake that draws more than two million visitors a year. The town also is intersected by a wide stretch of the American River called Lake Natoma, which is ringed by walking, biking and equestrian trails. Folsom has miles of preserved wetlands and creeks which are bordered by developed trails.

Folsom is approximately 15,170 acres or 24 square miles in size and single family residential zoning comprises 26 percent of the developed land. Folsom has experienced a steady population growth. Currently, the City has 57,233 residents (63,800 including prison inmates), and is expected to reach a build-out population of about 69,333 residents by 2009.

Originally a gold mining town and the site of the first passenger train terminal west of the Rockies, Folsom is steeped in a rich and colorful history. The town served as a transportation hub to the mother lode during the Gold Rush. In 1860 and 1861, Folsom was the western terminus of the Pony Express. Today, Folsom's historic district consists of fine homes and landmarks from this era, as well as the City's original downtown, now an eclectic collection of antique stores, gift shops and restaurants.



## TOTAL VALUES AT RISK FROM HAZARDS

The total values at risk from all hazards are presented as a worst-case baseline. Like other values presented in this plan, these are deceptively low because they do not include the values of infrastructure, government and church facilities, or the local economy. Additionally, assessed values in California are lower than actual because they are frozen to only reflect the value at the time of the last sale.

	Total Value	Land Value
2/3/4 PLEX	35,103,215	10,679,684
COMMERCIAL/INDUSTRIAL	1,491,913,066	335,011,319
MULTI-FAMILY	397,618,828	53,828,607
SINGLE FAMILY	4,970,993,698	1,284,266,696
VACANT LAND/AG	219,459,030	216,493,417
=====		
FOLSOM	7,115,087,837	1,900,279,723

*Source: Sacramento County Assessor's Office, Assessments by Land Use; 9-10-04*

The Risk Assessment portion of this plan indicates that Folsom does not face a catastrophic natural disaster so damage during any given disaster event would be less than the \$7.1 Billion displayed. However, the risk for Folsom varies from the rest of the County within the mapped floodplain due to its different size, and the varying numbers of structures and varying values of those structures. Therefore, the following section takes a closer look at Folsom's vulnerability to flooding.

With regards to Critical Facilities, Folsom has the following, none of which lie in identified hazard areas:

- Four fire stations
- 14 schools
- One hospital (Mercy Hospital)

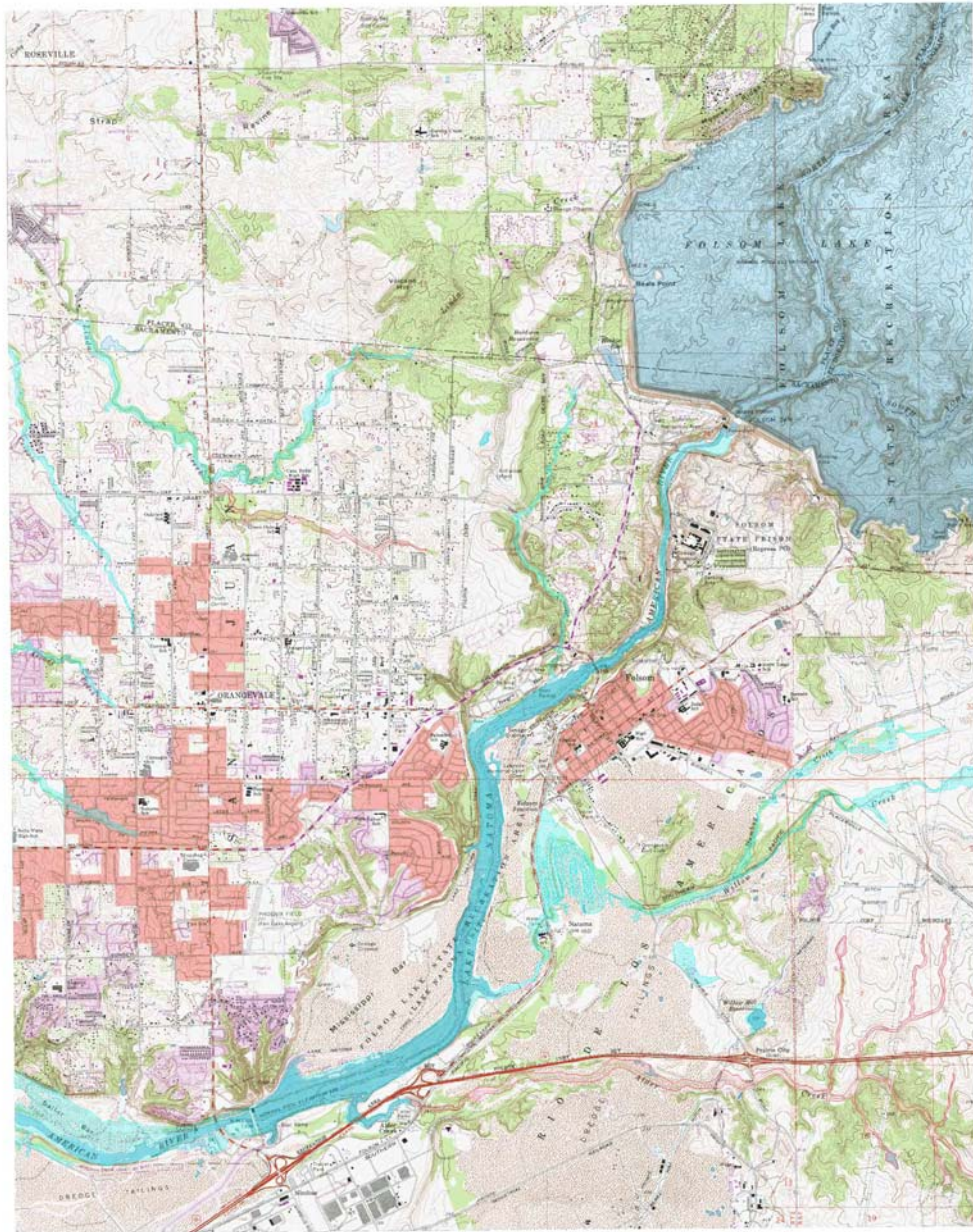
## NFIP DATA AND FLOODPLAIN INVENTORY

Folsom lies within the Natural Streams Group watershed and includes the main stem of the American River and its tributaries. Flood risks are associated with the American River and Willow and Humbug creeks.

A flood vulnerability model that utilized GIS and HAZUS-MH data calculated approximately 7,381 persons and 426 structures within the various A Zones of the 100-year floodplain. The types of properties include 414 residential, eight commercial, one industrial, and three public. The total value of these structures and their contents is estimated to be \$627,019,000. A detailed explanation of the methodology used for this vulnerability assessment is discussed in the Sacramento County section of this plan.

NFIP Insurance data indicates that as of 02-29-2004, there are 71 flood insurance policies in the City of Folsom. There have also been 22 claims for properties located within the mapped floodplain for a total of \$402,195

### CALIFORNIA DIVISION OF WATER RESOURCES AWARENESS FLOODPLAIN MAP FOR FOLSOM AND VICINITY



## OTHER HAZARDS

### Vulnerability to Dam Failure

Despite its location just below Folsom Reservoir, Folsom is relatively protected from a dam failure inundation flood since most of the flows would be confined to the narrow American River Canyon. Emergency access to and across the canyon would be severely limited during an event. The City's General Plan recommends that evacuation plans and the movement of emergency equipment and materials need to be coordinated with surrounding agencies and communities.

**Folsom Dam Construction, 1955**



**Folsom Dam Floodgate Failure, 1995**



*Source: [www.myfolsom.com/historicalphotos.shtml](http://www.myfolsom.com/historicalphotos.shtml)*



*Source: HMPC photos, September 2004*

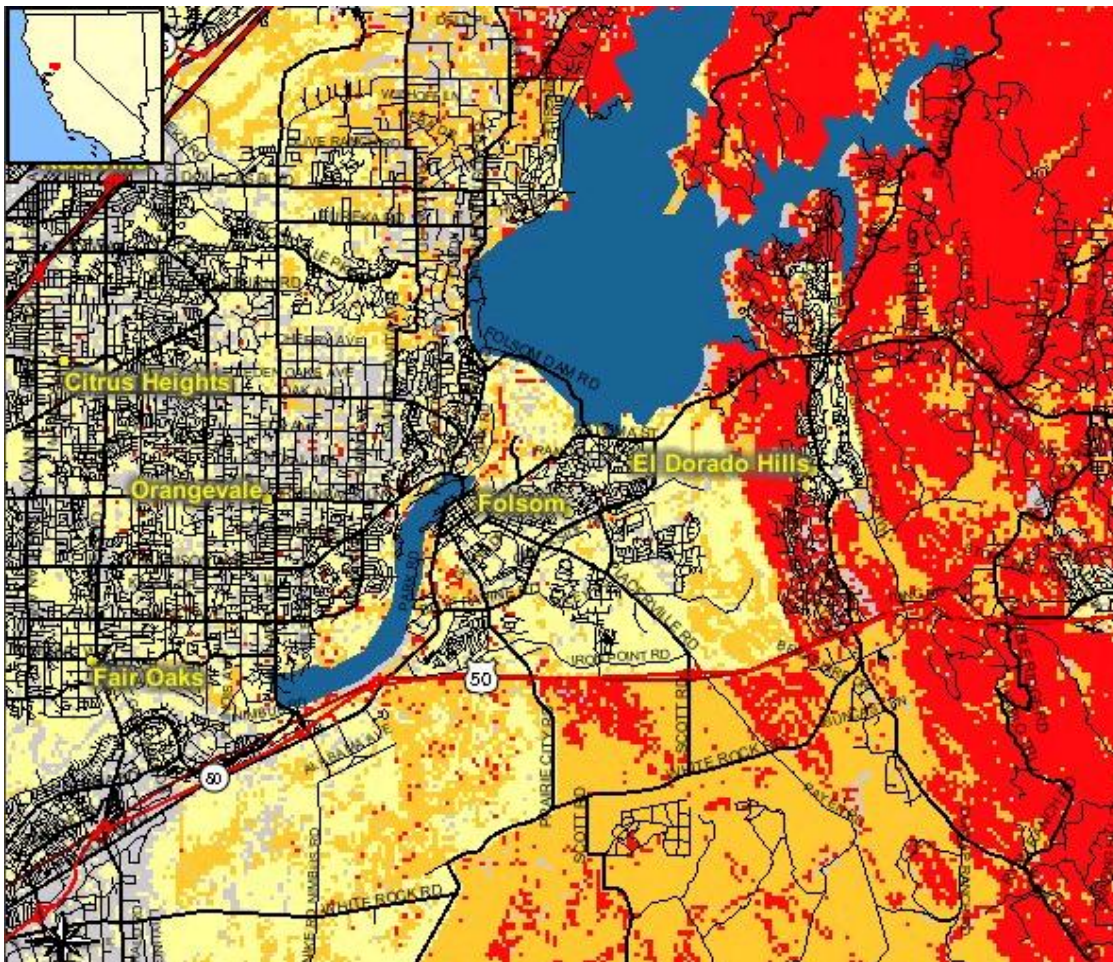
However, in addition to Folsom Dam, there are a series of earth dams or dykes that have also created Folsom Lake. These dykes form most of the northern boundary of the City. Failure of any of these facilities has the potential to cause significant property damage and loss of life in the City. The degree of impact would be affected by the water level of the lake at the time of failure.

In a sudden failure, there would be little warning and evacuation time. In a gradual failure, there should be at least several hours warning time. If a failure were to occur, the most likely cause would be a situation where there is more water coming into the lake than the spillways can handle, causing overtopping of the dykes. Over topping can cause erosion of the dyke, resulting in gradual failure. A more detailed discussion can be found in the City's Local Emergency Management Plan.

## Vulnerability to Wildfires

The planning process identified Folsom as having the greatest density of housing subject to wildfire within Sacramento County. The map below was created from the California Fire Alliance website and shows the fire threat in the Folsom area. Deeper shades of red indicate a higher fire threat along the eastern and southern city limits.

**Wildland Fire Threat Map – Folsom Area**



Source: <http://wildfire.cr.usgs.gov/fireplanning/> interactive web map

# CAPABILITY ASSESSMENT -

A capability assessment revealed several resources the City of Folsom has in-place to help reduce risk of natural hazards including: a certified floodplain manager; cable override emergency notification system; few buildings located in the floodplain; detention ponds; and important public emergency information online with contacts for police and fire departments; an online "family disaster plan"; and a recently adopted Local Emergency Management Plan (4/27/04).

## EXPLANATION OF CAPABILITY ASSESSMENT MATRIX

### *Does the Community have:*

**Comp Plan:** A Comprehensive Long-Term Community Growth Plan?

**Land Use Plan:** A plan that designates type of Land Use desired/required; uses Zoning

**Subdivision Ordinance:** A regulation that dictates lot sizes, density, setbacks and construction type

**Zoning Ordinance:** An ordinance that dictates type of Use and Occupancy, Implements Land Use Plan

**NFIP/FPM Ord:** A Floodplain Management Ordinance: Directs development in identified Flood Hazard Areas. Required for Participation in NFIP and Availability of Flood Insurance

**Sub. Damage:** Does your FPM Ordinance contain language on Substantial Damage/Improvements?

**Administrator:** Do you have a Floodplain Management Administrator (someone with the responsibility of enforcing the ordinance and providing ancillary services (e.g., map reading, public education)

**# of FP Bldgs:** How many buildings are in the mapped Floodplain?

**# of policies?** How many buildings are insured against flood through the NFIP?

**# of RL's:** # of Repetitive Losses: (Paid more than \$1,000, twice in 10 years)

**CRS Rating:** A Community Rating System rating from the NFIP, and if so, what is it?

**BCEGS:** A Building Code Effectiveness Grading System Rating

**LEOP:** A Local Emergency Operations Plan – a disaster RESPONSE plan

**HM Plan:** A Hazard Mitigation Plan

**Warning:** Any type of system, such as "Storm Ready" Certification from NWS, NOAA Weather Radio reception, outdoor sirens, Cable (TV) Override, or an Emergency Warning Notification System?

**GIS:** A Geographic Information System

**Structural Protection Projects:** (levees, drainage facilities, detention/retention basins)

**Property Protection Projects:** (buy-outs, elevation of structures, floodproofing, small "residential" levees or berms/floodwalls)

**Critical Facility Protection:** (for example, protection of power substations, sewage lift stations, water-supply sources, the EOC, police/fire stations or medical facilities that are at risk)

**Natural And Cultural Inventory:** Do you have an inventory of resources, maps, or special regulations within the community? (wetlands and historic structures/districts, etc.)

**Erosion Or Sediment Control:** Do you have any projects or regulations in place?

**Public Information And/Or Environmental Education Program:** Do you have an ongoing program even if its primary focus is not hazards? Examples would be "regular" fliers included in city utility billings, a website, or an

## Capability Assessment Matrix

	FOLSOM
Comp Plan/General Plan	Y
Land Use Plan	Y
Subdivision Ord	Y
Zoning Ordinance	Y
NFIP/FPM Ordinance	Y
- Map Date	various
- Substantial Damage language?	Y
- Certified Floodplain Manager?	Y
- # of Floodprone Buildings?	0
- # of NFIP policies	0
- Maintain Elevation Certificates?	N
- # of Repetitive Losses?	0
CRS Rating, if applicable	N/A
Stormwater Program?	Y
Building Code Version	1997 UBC
Full-time Building Official	Y
- Conduct "as-built" inspections?	Y
BCEGS Rating	Y - 6
Local Emergency Operations Plan	Y
Hazard Mitigation Plan	N
Warning System in Place?	N
- Storm Ready Certified?	N
- Weather Radio reception?	N
- Outdoor Warning Sirens?	N
- Emergency Notification (R-311)?	N
- Other? (e.g., cable over-ride)	Y- Cable over-ride
GIS System?	limited
- Hazard Data?	N
- Building footprints?	N
- Tied to Assessor data?	N
- Land-Use designations?	N
Structural Protection Projects	Y- detention ponds
Property Owner Protection Projects	N/A
Critical Facilities Protected?	Y
Natural Resources Inventory?	various
Cultural Resources Inventory?	various
Erosion Control procedures?	Y
Sediment Control procedures?	Y
Public Information Program/Outlet	Y
Environmental Education Program?	Y

## General Plan

Folsom's General Plan (1988) is a long-term policy guide for the physical, economic and environmental growth of the City. The plan's Safety Element aims at reducing death, injuries, damage to property and economic and social dislocation resulting from fire, flood and geological hazards. The plan is in the process of being updated. The following policies related to hazard mitigation are listed in the plan:

**Goal 29:** To protect lives and property from unacceptable risks resulting from natural or manmade hazards.

**Policy 29.3** The City shall develop standards for building within the 100-year floodway to assure that the water flows above stream and downstream from a property will not be altered from existing levels.

**Policy 29.4** The City shall work with the U.S. Army Corp of Engineers in developing standards for development within the inundation boundary resulting from a failure of Folsom Dam or the dikes retaining Folsom Lake.

## Municipal Code (3/04) Excerpts

### Health, Sanitation and Welfare, Title 8

- Chapter 8.36, Fire Protection. This chapter describes that buildings in outlying districts require inspections by the fire chief at least twice per year and buildings in closely built portions of the City of Folsom at least four times per year (with the exception of the interior of private dwellings).
- Chapter 8.70, Stormwater Management and Discharge Control. The purpose of this chapter is to protect and enhance the water quality of watercourses, water bodies within the City. Includes policies to limit urban pollutants to stormwater runoff.

### Floodplain Management Ordinance (Buildings and Construction, Title 14; Chapter 14.32, Flood Damage and Prevention)

This chapter is very similar to the City of Sacramento's floodplain management ordinance and includes some identical policies. This chapter aims to minimize public and private losses due to flood conditions. It includes standards for preventing flood damage for the following: construction, utilities, subdivisions, manufactured homes, recreation vehicles, and floodways. It requires that residential construction, new or substantial improvement, shall have the lowest floor, including basement, elevated at least **two feet** above the flood elevation. Further, the elevation of the lowest floor must be certified by a California registered professional engineer or land surveyor and verified by the chief building official.

## **Subdivision Ordinance, Title 16**

**Section 16.16.040, Geotechnical reports.** This section requires that an engineer's soils report and engineering geology report, prepared by a civil engineer and engineering geologist registered in the state and based upon adequate borings, shall be submitted to the city engineer for subdivisions of five or more parcels. The city engineer may require that such reports be submitted for subdivisions of four or less parcels.

## **Zoning Ordinance, Title 17**

- Chapter 17.39, Open Space and Conservation District, permitted land uses include river or stream courses and floodplain areas;
- Chapter 17.52, Historical District, aims to preserve and enhance the atmosphere of the historic district as it developed between 1850 and 1950;
- Chapter 17.74, RMH, Trailers and Trailer Parks. Construction standards require that adequate underground storm drains be provided to prevent flooding of mobile home sites; and
- Chapter 17.95, Drainage Facility Improvement Charges, states, "The city council declares and finds that it is necessary to adopt and establish the entire city as a zone for the improvement and construction of trunk and collection drainage facilities, including waterways, pumping plants, levees and other facilities utilized for controlling drainage and storm waters within the city in order to promote and protect the public health, safety, comfort, convenience and general welfare from uncontrolled drainage and storm water. The fee for residential structures is \$540 per dwelling unit; fee for commercial, industrial, other is \$3,280 per acre."

## **Hillside Development Guidelines (2/14/95)**

- The City of Folsom has developed Hillside Development Guidelines in order to prepare applicants with site design, architectural design, and landscape design concepts encouraged by the City and are utilized to evaluate compliance with the City's Hillside Ordinance. The Guidelines include requirements for grading, drainage, and landscape measures to be incorporated for hillside development.

## **Local Emergency Management Plan (4/27/04)**

- The City of Folsom adopted a new Local Emergency Management Plan on 4/27/04.

## **HISTORIC PRESERVATION**

Folsom has a large number of historic structures. The following are listed on State and Federal Historic Preservation District Registers:



**Chung Wah Cemetery** (added 1995 - **Site** - #95000999)  
Also known as **Sze Yup--Sam Yup Cemetery**  
Mormon St. vicinity, near Lake Natoma, Folsom

**Cohn House** (added 1982 - **Building** - #82002228)  
305 Scott St., Folsom

**Folsom Depot** (added 1982 - **Site** - #82002229)  
200 Wool St., Folsom

**Folsom Powerhouse** (added 1973 - **Building** - #73000426)  
Off Folsom Blvd. in Folsom Lake State Recreation Area, Folsom

**Natoma Ground Sluice Diggings** (added 1990 - **Site** - #90000682)  
Also known as **Chinese Diggings**  
US 50 and Folsom Blvd., Folsom  
*Source:* <http://www.nationalregisterofhistoricplaces.com/CA/Sacramento/state.html>

## NATURAL RESOURCES IDENTIFIED IN FOLSOM

The following list was generated from The California Natural Diversity Database and contains all known occurrences of rare plants and animals, and terrestrial and aquatic communities located within Folsom city limits.

### City of Folsom

- Northern Hardpan Vernal Pool
- Sacramento orcutt grass
- Valley Needlegrass Grassland
- Great blue heron
- Great egret
- Northwestern pond turtle
- Tri-colored blackbird
- Valley elderberry longhorn beetle
- Vernal pool fairy shrimp

## DEVELOPMENT TRENDS

Folsom has been growing steadily at approximately five to seven percent over the past five years. *Source:* [www.folsom.ca.us](http://www.folsom.ca.us) The relatively undeveloped character of the outlying city limits and proximity to the City of Sacramento has driven the recent growth. According to SACOG, Folsom will grow to 76,333 residents and 29,000 housing units by 2015. That is an increase of 13,433 people and 6967 housing units over the 2005 estimate of 62,900 persons and 22,033 housing units. *Source:* [www.sacog.org](http://www.sacog.org)

Folsom is experiencing rapid retail growth along Highway 50 and East Bidwell Street in southeastern Folsom. The table below documents the general rate of residential growth over the past 8 years.

**Single-family new house construction building permits: FOLSOM**

- 1996: 628 buildings, average cost: \$188,200
- 1997: 826 buildings, average cost: \$184,900
- 1998: 934 buildings, average cost: \$203,300
- 1999: 1087 buildings, average cost: \$216,900
- 2000: 1243 buildings, average cost: \$222,400
- 2001: 867 buildings, average cost: \$218,100
- 2002: 615 buildings, average cost: \$233,500
- 2003: 734 buildings, average cost: \$248,900

## COMMUNITY-SPECIFIC RECOMMENDATIONS

**Folsom Action Item #1:** Encourage Defensible space practices

**Issue/Background Statement:** Good defensible space practices reduce fire potential and increases chances to save structures from fire damage.

**Other Alternatives Considered (including No Action):** No action.

**Responsible Office/Person:** City Fire Department

**Priority (H, M, L):** Medium

**Cost Estimate/Potential Source of Funding:** City staff time

**Cost-Effectiveness Explanation:** Property loss reduction

**Schedule:** Annually, prior to fire season

**Folsom Action Item #2:** Develop Emergency Ingress/Egress Plans

**Issue/Background Statement:**

Dam failure flooding or wildfires could cause problems with emergency vehicle ingress/egress and evacuations unless adequate plans are developed.

**Other Alternatives Considered (including No Action)** None.

**Responsible Office/Person:** Police and Fire Departments along with Public Works Department

**Priority (H, M, L):** Low

**Cost Estimate/Potential Source of Funding:** City staff time

**Cost-Effectiveness Explanation:** Life Safety

**Schedule:** 2005/2006

**Folsom Action Item #3:** Enforce subdivision regulations regarding the following:

- Water
- Access
- Defensible space
- Fencing
- Firebreaks
- Non-combustible materials

**Issue/Background Statement:** To ensure the quality of life to city residents and reduce future fire related losses, these measures are needed as part of the process for new development.

**Other Alternatives Considered (including No Action):** None

**Responsible Office/Person:** Community Development Department

**Priority (H, M, L):** Medium

**Cost Estimate/Potential Source of Funding:** City staff time; Developer

**Cost-Effectiveness Explanation:** Costs are developer's responsibilities.

**Schedule:** On-going enforcement

**Folsom Action Item #4:** Investigate joining the California Fire alliance (See State Hazard Mitigation Plan, Appendix #10)

**Issue/Background Statement:** Many communities in surrounding counties have found it very useful to join the California Fire Alliance. The Alliance helps local fire departments identify hazards, educate property owners, and develop plans for hazard reduction activities such as fuels management programs (thinning).

**Other Alternatives Considered (including No Action):** No action

**Responsible Office/Person:** City Fire Department

**Priority (H, M, L):** Low: Waiting for Fire Department feedback

**Cost Estimate/Potential Source of Funding:** Existing Fire Department budget

**Cost-Effectiveness Explanation:** Life Safety and reduced fire losses

**Schedule:** 2005

**Folsom Action Item #5:** Participate with the development of a seasonal multi-hazard public education campaign to be implemented annually

**Issue/Background Statement:** Refer to Section 5-4 Countywide Mitigation Recommendations. Public Education is one of the primary mechanisms in reducing future hazard related losses, and one that is inexpensive in comparison to other mitigation projects. This effort should be coordinated with the organizations that already have extensive and/or limited programs in place.

The following topics could be addressed through this effort that apply to Folsom:

- Floods
  - Warning system components
  - Regional Evacuation plans/procedures (response to warning)
  - Public Info regarding manhole covers popping off: what they are, what they are for
  - Natural & Beneficial value of floodplains
  - Placing Flood-Depth signs county-wide
- Severe Weather
  - Tree-limb trimming
  - Fog – driving tips
  - Warning (NOAA Weather [All-Hazards] Radio)
- Wildfire (defensible space, subdivision regulations, ingress/egress, severe fire hazard mapping)
- Earthquakes
- Health Hazards (West Nile Virus)
- Water Conservation
- Develop/enhance Business Continuity Planning
- Conduct disaster exercises
- Train consumers/volunteers to be ready to help when disasters strike
- Provide all-hazard curriculum for teachers

**Other Alternatives Considered:** Do nothing

**Responsible Offices/Persons:** City & County Emergency Management offices, City & County Floodplain Management Offices, SAFCA, the America Red Cross, Sacramento County Health Department, the California Fire Alliance, the Institute of Building and Home Safety, CA-OES, CA-DWR, CA-Reclamation Board and FEMA Region IX.

**Priority (H,M,L):** Medium

**Cost Estimate/Potential Source of Funding:** City staff time, plus funds for printing and distribution; up to \$15,000/year

**Cost-Effectiveness Explanation:** Life Safety, reduced losses

**Schedule:** Start in 2005

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