

## Chapter 2 What's New

**Requirements §201.6(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.**

The 2011 Sacramento County Local Hazard Mitigation Plan contained a detailed description of the planning process, a risk assessment of identified hazards for the Sacramento County Planning Area and an overall mitigation strategy for reducing the risk and vulnerability from these hazards. Since approval of the plan by FEMA, much progress has been made by Sacramento County and the participating communities on implementation of the mitigation strategy. As part of this 2016 LHMP Update, a thorough review and update of the 2011 plan was conducted to ensure that this update reflects current community conditions and priorities in order to realign the overall mitigation strategy for the next five-year planning period. This section of the plan includes the following:

- **What's New in the Plan Update.** This section provides an overview of the approach to updating the plan and identifies new analyses, data and information included in this Plan Update to reflect current community conditions. This includes a summary of new hazard and risk assessment data as it relates to the Sacramento County Planning Area as well as information on current and future development trends affecting community vulnerability and related issues. The actual updated data, discussions, and associated analyses are contained in their respected sections within this 2016 LHMP Update.
- **Summary of Significant Changes to Current Conditions and Hazard Mitigation Program Priorities.** This section provides a summary of significant changes in current conditions, changes in vulnerability, and any resulting modifications to the community's mitigation program priorities.
- **2011 Mitigation Strategy Status and Successes.** This section provides a description of the status of mitigation actions from the 2011 plan and also indicates whether a project is no longer relevant or is recommended for inclusion in the updated 2016 mitigation strategy. This section also highlights key mitigation success stories of the County and participating jurisdictions since the 2011 LHMP.

This What's New section provides documentation of Sacramento County Planning Area's progress or changes in their risk and vulnerability to hazards and their overall hazard mitigation program. Completion of this 2016 LHMP Update further provides documentation of the Sacramento County community's continued commitment and engagement in the mitigation planning process

### 2.1 What's New in the Plan Update

This LHMP Update involved a comprehensive review and update of each section of the 2011 plan and includes an assessment of the success of the participating communities in evaluating, monitoring, and implementing the mitigation strategy outlined in the initial plan. Only the information and data still valid from the 2011 plan was carried forward as applicable into this LHMP Update.

Also to be noted, Chapter 7 Implementation and Maintenance of this plan update identifies key requirements for updating future plans:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to inventories; and
- Incorporate new action recommendations or changes in action prioritization.

These requirements and others as detailed throughout this plan were addressed during this Plan Update process.

As part of its comprehensive review and update of each section of the plan, Sacramento County and participating jurisdictions recognized that updated data, if available, would enhance the analysis presented in the risk assessment and utilized in the development of the updated mitigation strategy. Highlights of new data used for this Plan Update is identified below in this Section and is also sourced in context within Chapter 4, Risk Assessment. Specific data used is sourced throughout this plan document. This new data and associated analysis provided valuable input for the development of the mitigation strategy presented in Chapter 5 of this plan.

Highlights of new information and analyses contained in this Plan Update includes the following:

- A new assessment of updated hazards affecting the Sacramento County Planning Area was completed. No existing hazards were eliminated from this update.
- The agriculture hazard was expanded upon to better capture the weather related impacts to this industry in addition to the impacts associated with insects and pests.
- The drought hazard was expanded to include water shortage impacts to the County, to better align with the State of California Hazard Mitigation Plan and to reflect the significant issues related to drought conditions resulting from the current and ongoing drought within the County and State of California.
- The wind hazard was separated out from the heavy rains and storms hazard and included with the tornado hazard to better reflect those high wind events that occur outside of thunderstorm events.
- Climate Change has been addressed both as a standalone hazard and within the hazard profiles of each identified hazard to assist the County in considering climate change issues when identifying future mitigation actions for the Planning Area.
- An entire rework of the risk assessment for each identified hazard. This included reworking the hazard profile and adding new hazard event occurrences; redoing the entire vulnerability analysis to add items identified below and updating the vulnerability assessment based on more recent hazard data as well as using the most current parcel and assessor data for the existing built environment.
- An update of the flood hazard analysis to include an updated analysis of the 100-year flood, an analysis of the 500-year and 200-year flood events and an analysis of the localized/stormwater flooding problems affecting the Planning Area, including the use the new Digital Flood Insurance Rate Map (DFIRMs) dated June 16, 2015) developed by FEMA for the County, the Best Available Maps (BAM) compiled by the state, and input from the County. An analysis of flooded acres in the Planning Area based on new DFIRMs was also conducted.

- New dam data provided by Cal OES was used for the Dam inventory and analysis. This data included an updated hazard classification for identified dams.
- An analysis of the Repetitive Loss (RL) properties within the planning area was completed for this update based on updated Repetitive Loss Area Analysis (RLAA) reports developed by the County and City of Sacramento.
- Utilizing updated critical facility GIS mapping for the City of Sacramento, combined with the critical facility data developed for the 2011 plan, to provide an updated inventory of critical facilities by jurisdiction and a GIS analysis of critical facilities vulnerable to priority hazards.
- An enhanced vulnerability assessment which added an updated GIS analysis of future development areas in the Planning Area and specific to each of the mapped hazards.
- Incorporation and analysis of the new 2010 Census data was utilized for this LHMP update.
- Also, as required by current FEMA planning guidance, an analysis of each jurisdictions' ongoing and continued compliance with the NFIP.
- For the CRS communities of Sacramento County and the City of Sacramento, this plan was developed to maximize CRS credits for CRS Activity 510, Floodplain Management Planning.
- As part of the CRS Activity 510 requirements, a greater emphasis was placed on public involvement and outreach of this LHMP Update as well as Agency coordination and input.

## 2.2 Summary of Significant Changes to Current Conditions, Planning Area Vulnerability, and Hazard Mitigation Priorities

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Agricultural Hazards			X

- Recent drought conditions stressed crops making them more susceptible to insect infestation
- Reduced water supply resulted in land being left out of production reducing overall crop yields
- Noxious weeds are more drought tolerant – better able to compete for water over local crops
- Drought increased the tree mortality in the County further impacting the wildfire hazard.
- Large sell-off of cattle/animals due to drought conditions resulting in economic impacts

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Bird Strike	X		

- Possibly attributed to climate change, the warmer weather (and lack of planted rice fields) altered the normal migration patterns of area birds.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Climate Change			X

- Although the last couple of years have been more normal in temperatures, generally the planning area has seen an increase in warmer weather.
- Other weather related conditions include the recent drought, reduced snowpack; some of which may reduce regional flood conditions.
- Climate change conditions increase vulnerability in multiple hazard areas. Other impacts include, impacts to food sources and food-related diseases, eco-system changes, public health issues, etc.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Dam Failure	X		

- Folsom Dam Improvement projects are near completion that will allow releases at a lower flood stage so the Dam can hold more water for enhanced flood control. This decreases the overall vulnerability in the Folsom Dam inundation areas.
- Jurisdictional dams generally have no change in vulnerability as they are highly regulated. However, with more people moving into dam inundation areas, the vulnerability increases due to an increase in potentially affected population, but not due to an increased risk of dam failure.
- Non-jurisdictional dams pose the biggest risk and, over time with little regular maintenance and often located in remote areas with little security, result in an increase in vulnerability to Sacramento.
- The Dam at Mather AFB is under construction to upsize the spillway. This structural project will reduce the risk and vulnerability associated with this dam.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Drought and Water Shortage			X

- Since the 2011 planning process, current drought conditions, including water supply issues, have had a significant impact on the Sacramento County Planning Area and California. As a result the drought hazard has become a significant priority for mitigation planning.
- As previously mentioned, the drought has contributed to an increase in vulnerability of the County due to increase tree mortality issues and general increase in wildfire conditions.
- Water Supply has been adversely affected as noted by recent modifications made to the Sacramento Water Treatment Plant to improve distribution, intakes, and other improvements.
- Water quality issues have been more significant with less flows in streams, combined with drawing down the water table. Saltwater intrusion is a concern. Economic impacts associated with new NPDES permits.
- Over the last few years, the drought has had a significant economic impact on recreation in the County, with rivers running substantially lower, less people have been vacationing and undertaking water dependent recreational activities, such as boating.
- In California, SBA funds were made available for those business' in the Salmon Industry due to loss of revenue associated with less salmon in the streams.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Earthquakes and Earthquake Liquefaction		X	

- The primary factor that might change the earthquake vulnerability, is additional development and more people moving to the area.
- Lake County had a 5.2 earthquake on a previously unknown fault. Napa had recent damaging earthquakes. There is the potential for effects from earthquake activity from adjacent and nearby counties.
- A primary vulnerability to earthquake is to the Delta and potential impacts to the water supply.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Floods:100-/200-/500-year		X	

- Overall, the net increase or decrease in vulnerability depends on the location within the Planning Area.
- With the most recent FEMA flood maps, flood depths have been established in some areas and the regulatory Special Flood Hazard Area has changed. With these changes, flood mitigation projects, including flood insurance promotion and continued participation in the NFIP's CRS program, is a priority.
- Although the FEMA mapped floodplains have changed based on new data, the risk and vulnerability of 100/200/500-year flood remains somewhat constant. Ongoing implementation of regional flood control projects and effective land use planning and adherence to development requirements in identified floodplains have minimized additional exposure to this hazard in the County.
- The 200-year requirements for urbanizing areas are reducing vulnerability.
- Notable recent levee improvement projects include those in Natomas, the South Streams Group and other planned and in process projects.
- The Folsom Dam project has changed the risk and vulnerability, allowing for increased flood flows and enhanced levels flood of protection.
- Enhanced technologies provide earlier and more accurate storm predictions that provide advanced notice to residents
- Emergency Action Planning that includes elements of evacuation planning improves flood fighting, reduces loss of life, etc.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Floods: Localized Flooding		X	

- Increased development in unmapped flood hazard areas could result in a net increase in vulnerability should these areas experience increased stormwater/localized flooding. However, development requirements that require mitigation of stormwater runoff effectively mitigates this hazard.
- Climate change issues may result in more localized flooding as the climate warms and the wetter storms create more runoff.
- CRS Activity 450, Watershed Management Plan, developed on a regional basis, better manages localized flooding issues.

- Educational efforts of Stormwater.org also contributes to better stormwater management to the County.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Landslide and Debris Flows		X	

- Over the last couple of years, with the severe drought, much of the vegetation along slopes areas is failing to thrive, thus there is a lack of vegetation to hold soil contributing to the landslide/mudslide potential. However, due to the relative flat topography of the Planning Area, landslide risk and vulnerability remains limited.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Levee Failure	X	X	

- Similar to flood, the net increase or decrease in vulnerability depends on the location within the Planning Area.
- Levee vulnerability for the urbanizing areas has seen some improvements, with new structural flood control projects and the development of new development requirements reflected in updated General Plans and Flood Management Ordinances.
- Levee vulnerability for non -urbanizing areas, such as the Delta, mostly remain unchanged with a variety of structural and non-structural flood projects under consideration.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
River/Stream/Creek Bank Erosion		X	

- Drought conditions have increase the occurrence of stream bank erosion, with soils drying out and becoming more friable, they tend to slough off the banks causing increased areas of erosion.
- Erosion of levees remains the most significant issue.
- However, stormwater hydro-modification projects are being assessed by area jurisdictions that will limit flows thus reducing erosion impacts in some local streams.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Temperatures - Heat			X

- Climate change issues create the potential for additional heat related impacts in the future
- While the first few years since the 2011 planning effort saw an increase in area temperatures, the last couple of years have been near normal.
- The heat, combined with drought conditions, has increased the potential for wildfires.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Temperatures- Cold and Freeze		X	

- Over the last five years of mild winters, there has been a notable decrease in vulnerability of Sacramento County to freeze and severe winter storms.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Fog		X	

- This low priority hazard has not changed over the last five years.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Heavy Rains and Storms		X	

- The HMPC estimated that each year there are 2-3 high intensity storms; although the last five years have been on the mild side.
- However, climate change brings renewed concern moving forward for heavy rains, storms and associated issues to the County.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Winds and Tornadoes		X	

- This hazard has not changed in the Planning Area over the last five years.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Subsidence		X	

- Drought conditions have contributed to increased subsidence statewide. In Sacramento County, this is likely more of a Delta issue where subsidence concerns have actually decreased with the implementation of better farming practices over the years.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Volcano		X	



- This low priority hazard has not changed over the last five years.

2016 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Wildfire			X

- Compounded by current drought conditions, the wildfire hazard has substantially increased and is no longer just a seasonal issue. The wildfire season, including the potential for a catastrophic wildfire, is now a year around concern.
- The vulnerability of Sacramento County to increased occurrence of a devastating wildfire has increased as exacerbated by the recent drought, increases in tree mortality, and overall increase in wildfire conditions.
- The increased development in WUI areas within the County also contributes to an increase in vulnerability.
- With large wildfires occurring throughout California, the Planning Area has seen a significant change in air quality from smoke resulting in more recorded bad air days.

## 2.3 2011 LHMP Mitigation Strategy Successes and Status

Sacramento County and participating jurisdictions have been very successful in implementing actions identified in the 2011 LHMP Mitigation Strategy, thus, working diligently towards meeting their 2011 goals and objectives of:

### Goal 1: Minimize the loss of life, injury, and property damage from natural hazards (reduce the risk and vulnerability of the community to hazards through mitigation efforts)

- Objective 1.1 Assure long term protection of existing and future development from natural hazards
- Objective 1.2 Protect critical facilities from natural hazards
- Objective 1.3 Protect the environment from natural hazards
  - ✓ 1.3.1 Protect and enhance water quality, critical aquatic resources and habitat for beneficial uses.
- Objective 1.4 Maintain/enhance the flood mitigation program to provide 100/200/500 year flood protection
  - ✓ 1.4.1 Protect, create, and restore flood control facilities and waterways to convey flood waters and to provide flood control services to surrounding areas.
  - ✓ 1.4.2 Mitigate Repetitive Loss Properties.
  - ✓ 1.4.3 Flood mitigation efforts should include considerations for protecting water supply from contamination.
- Objective 1.5 Minimize risk of levee breach, overtopping or other failures
  - ✓ 1.5.1 Maintain levees to standards described by state and federal regulations suitable for risk reduction.
  - ✓ 1.5.2 Address levee seepage and erosion issues on a proactive, ongoing basis.
  - ✓ 1.5.3 Obtain funding for identified levee improvement projects.
- Objective 1.6 Reduce the potential of wildfire incidents next to developed communities



- ✓ 1.6.1 Fuels reduction and maintenance of defensible space in the High and Very High Fire Hazard Severity Zones, including the Rollingwood, American River Parkway, Fair Oaks, and Orangevale areas.
- ✓ 1.6.2 Secure funding for staffing Fire Station #33 during red flag conditions.

**GOAL 2: Enhance public awareness of the affects of natural hazards and public understanding of disaster preparedness**

- Objective 2.1 Reduce exposure to hazard related losses
  - ✓ 2.1.1 Fire fuel reduction and defensible space
  - ✓ 2.1.2 Flood hazard awareness and mitigation
  - ✓ 2.1.3 Insurance is the last but certain defense
- Objective 2.2 Implement outreach/education programs pre- and post-disaster
  - ✓ 2.2.1 Target outreach and education for each hazard type and risk area.
- Objective 2.3 Develop, enhance, and integrate disaster response planning and training
  - ✓ 2.3.1 Encourage at risk populations to develop and practice emergency plans, including procedures for evacuation and shelter-in-place.
    - 2.3.1.1 Consider utilizing a neighborhood approach to evacuation planning and disaster response to assist first responders.

**GOAL 3: Improve the capabilities of the community to mitigate or reduce losses from natural hazards**

- Objective 3.1 Minimize hazard-related damage in order to maintain current service levels
- Objective 3.2 Maximize resources to provide mitigation from natural hazards
  - ✓ 3.2.1 Coordinate jurisdictional responsibilities to various hazards through City and Community Disaster/Emergency Response Plans and Exercises.
- Objective 3.3 Increase the use of shared resources between agencies
  - ✓ 3.3.1 GIS, Lidar, DFIRM
  - ✓ 3.3.2 Water Supply
- Objective 3.4 Strengthen Intergovernmental and Interagency partnerships
  - ✓ 3.4.1 Transportation, waste disposal, fire districts
- Objective 3.5 Promote public/private partnerships in hazard mitigation and education programs
- Objective 3.6 Increase coordination and communication among federal, state and local agencies
  - ✓ 3.6.1 Identify and implement mitigation projects that are mutually beneficial

**GOAL 4: Position Jurisdictions for Federal and State Grant Funding**

- Objective 4.1 Maintain good standing with FEMA and State hazard mitigation programs, regulations and requirements
- Objective 4.2 Maximize funding opportunities through identification and tracking of all types of Federal and state grant programs
  - ✓ 4.2.1 Monitor and communicate to all communities: available grant programs, timelines, and processes

Where possible, Sacramento County and the participating jurisdictions used existing plans and programs to implement the 2011 mitigation strategy. Examples include implementation of wildfire mitigation actions

through Fire Safe Alliances and existing community wildfire protection plans (CWPPs), implementation of flood mitigation actions through County programs including existing plans, studies, and projects, and implementation of a variety of projects through the County's Capital Improvement Program.

### **2.3.1. Success Stories**

Sacramento County and all participating jurisdictions have been successful in completing actions from the previous plan. Some of these success stories are highlighted below.

#### ***County Flood Reduction Projects***

Sacramento County continues to implement various flood reduction projects on an annual basis. Recently completed projects include:

- El Camino Avenue drainage improvements – this project involved adding larger storm drain pipes and extended drain inlets to improve collection of neighborhood storm drain run-off.
- Vineyard Road at Laguna Creek Bridge Replacement – this project raised the bridge by several feet over the creek to reduce flooding during heavy rains.
- Freedom Park Drive – this project involved adding drainage swales to absorb runoff into landscaped area before going into storm drain pipes with the goal of reducing peak flows into creeks. The reduced runoff lessens flooding concerns in the area.
- Acquisitions – property acquisition in the South County has added acres into the NVS Preserve to secure and maintain flood storage capacity as development expands.
- Emergency Action Plan for the Delta communities has been completed.

#### ***City of Sacramento – South Sacramento Streams Group (SSSG)***

On May 12, 2014, approximately 3,000 properties within the South Sacramento Streams Group were remapped by the Federal Emergency Management Agency. The new floodplain designation removed a large area from the Special Flood Hazard Area and allowed residents and businesses to be eligible for lower-cost Preferred Risk Policy Flood Insurance.

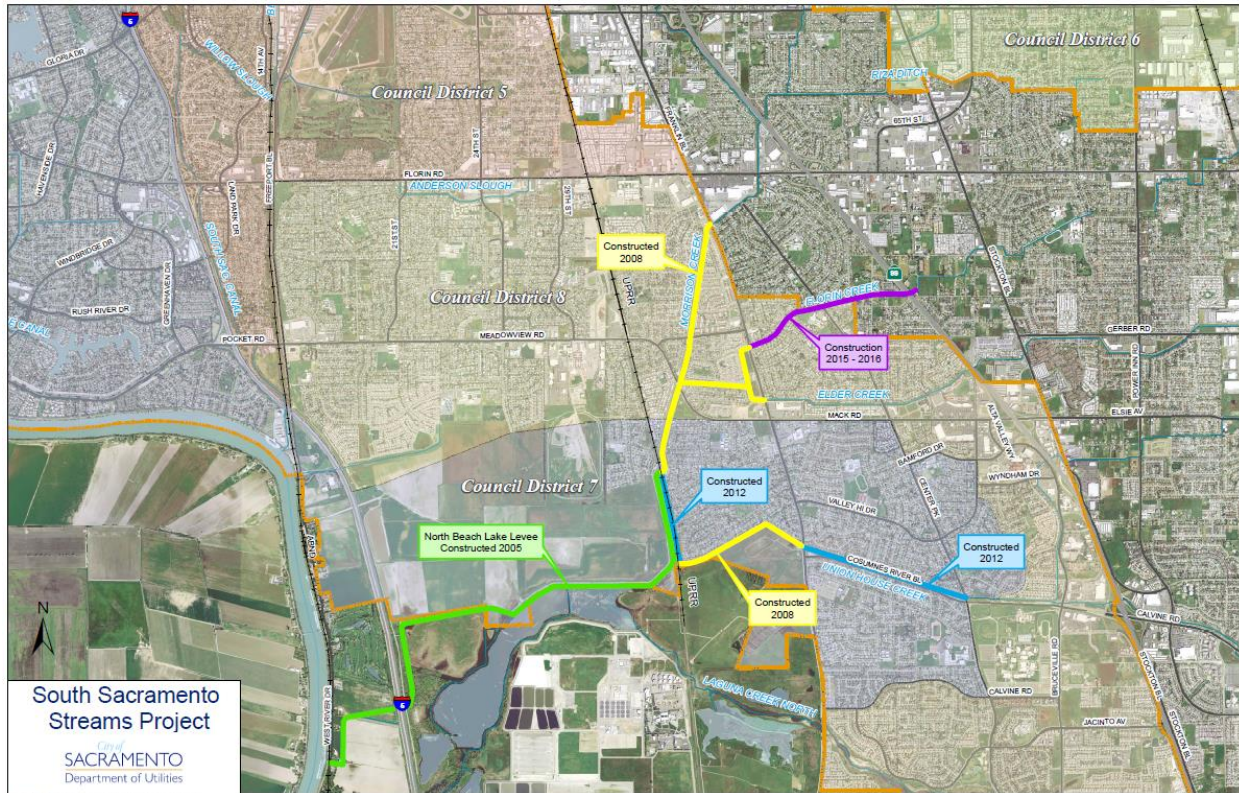
#### **Morrison Creek Levee System**

The existing levee system along Morrison Creek and its major tributaries was found to have insufficient capacity to carry a 100-year flood event. The decrease in flood protection provided by the system is based on: (1) increased water surface elevations projected in the Delta; and (2) higher flows coming through the system from the upper reaches of the watershed. The problem could be further exacerbated as new development occurs upstream, unless the additional run-off is either detained upstream or the downstream channel capacity is increased.

The US Army Corp of Engineers (USACE), in cooperation with the Sacramento Area Flood Control Agency (SAFCA) and the City and County of Sacramento, completed a study of alternatives, including both upstream detention and modifications to the downstream levee system. Results of the study supported work to be done to the existing Morrison Creek levees as well as to the Unionhouse, Florin, and Elder Creek levees. The County is also collecting development impact fees from upstream developers, which will be

used to build detention basins to hold the additional run-off generated as new development occurs. A map of the affected area is shown in Figure 2-1 below.

*Figure 2-1 Areas Benefited by Improvements to the Morrison Creek, Unionhouse, Florin, and Elder Creek Levees*



Source: DOU

In 2005, USACE completed construction of nearly four miles of levee from Freeport Boulevard/Sacramento River Levee on the west to the Union Pacific Railroad to the east, raising the existing levee system to protect against a 200-year storm.

USACE constructed floodwalls along the four creeks (Elder, Unionhouse, Florin, and Morrison) up to Franklin Boulevard. At the end of 2012, a piece of the Morrison Creek project downstream of Franklin was completed. A 3,300-ft floodwall was constructed along the Union Pacific Railroad tracks on the east bank. The cost of this floodwall was \$5.9 million.

### Unionhouse Creek Channel Improvements

In 2012, SAFCA, in partnership with the City of Sacramento and Sacramento County Department of Water Resources (DWR), improved over a mile and a half of Unionhouse Creek between Franklin Blvd. and Bruceville Road. The project increased the amount of water that can be contained in the channel, resulting in 100-year flood protection. The cost of the construction project was a little under \$2.5 million.



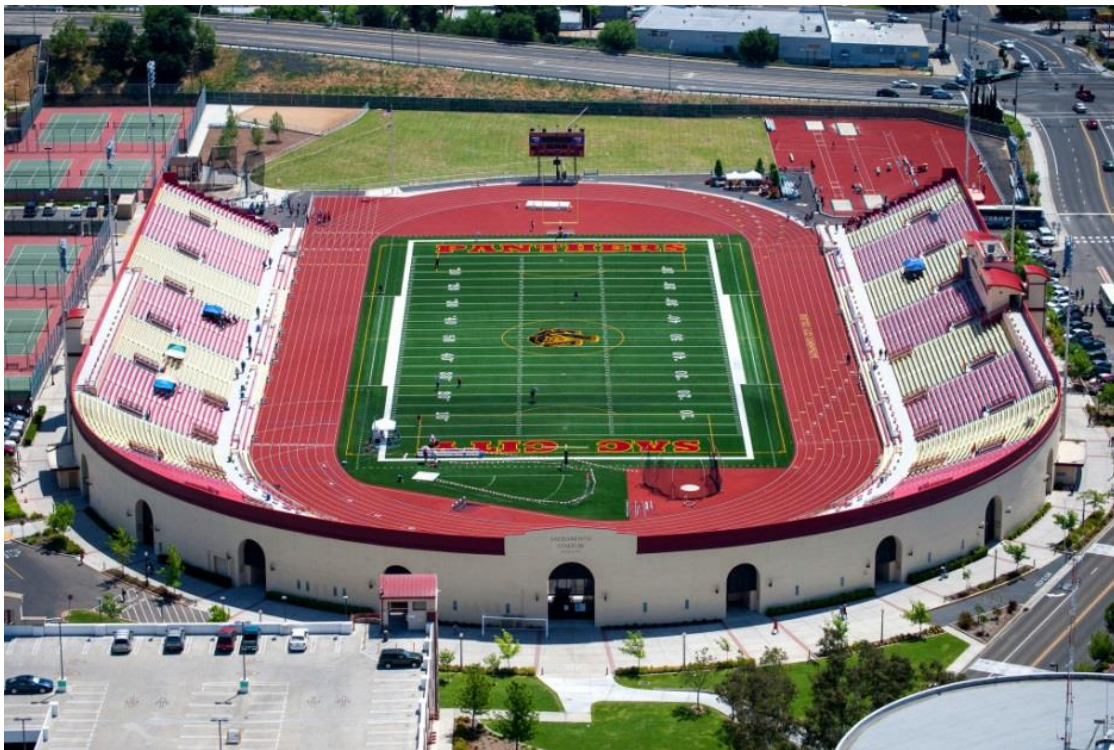
## Florin Creek Improvements

SAFCA, in partnership with the City of Sacramento and DWR, is constructing a detention basin along Florin Creek near Persimmon Avenue which, in conjunction with channel improvements completed in 2016 by USACE in cooperation with the Central Valley Flood Protection Board (CVFPB) and SAFCA, will provide FEMA level of flood protection along much of Florin Creek from Highway 99 downstream to Franklin Blvd.

## *Los Rios Community College*

In 2012 Los Rios Community College District completed seismic and structural deficiency repairs and upgrades to Hughes Stadium. Originally built in 1928, the stadium underwent various cosmetic, structural and utility upgrades over time. However, in recent years, the facility experienced a great deal of water intrusion through the stadium decking which affected its structural integrity. In order to bring the facility up to current seismic and building code requirements, as well as to provide new support spaces, a new track, a new synthetic grass field, and numerous ADA improvements, the District completed a \$12 million dollar renovation and upgrade. The project was successfully completed on schedule and mitigated our exposure to loss of life, injury and property damage. The improved Hughes Stadium, a 21,000 seat venue which re-opened in October 2012 for Sacramento City College athletic teams, football bowls, high school playoff games, and commencement events also experienced an increase in the use and rental of the facility.

*Figure 2-2 Hughes Stadium*



Source: Los Rios Community College

### 2.3.2. 2011 Mitigation Strategy Update

The 2011 mitigation strategy contained 158 separate mitigation actions benefiting one or more communities within the Sacramento County Planning Area. Of these 158 actions, 21 have been completed, 15 are completed but are still ongoing, 91 are ongoing, 3 are ongoing but not yet started, and 28 have not been started. Because many of these projects, such as the various fuels management projects, are implemented on an annual or other continuous basis and some of the projects have yet to be funded or have otherwise not been initiated, 43 2011 projects have been identified for inclusion in this Plan Update.

Table 2-1 provides a status summary of the mitigation action projects from the 2011 LHMP. Following the table is a description of the status of each project.

*Table 2-1 Sacramento County's 2011 LHMP Update: Mitigation Action Status Summary*

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
<b>Multi-Hazard Mitigation Actions</b>					
Enhance Public Awareness of the Affects of Natural Hazards and Public Understanding of Disaster Preparedness	Sacramento County		X		N
CRS Public Information Pilot Program	Sacramento County, City of Sacramento	X (City)	X (County)		N
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Sacramento County City of Citrus Heights City of Elk Grove City of Folsom City of Galt City of Rancho Cordova City of Sacramento	X (Sacramento County) X (City of Galt) X (City of Sacramento)	X (City of Citrus Heights) X (City of Rancho Cordova)		Y (County)
Flood Insurance Promotion	Sacramento County		X		N
Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas	Sacramento County		X (Sacramento County) X (City of Sacramento)		N
Finalize and Implement the Actions of the South Sacrament Habitat Conservation Plan	Sacramento County City of Elk Grove City of Galt City of Rancho Cordova Sacramento Regional County Sanitation District Sacramento County Water Agency Southeastern Connector	X			N
SAFELY OUT™ Evacuation Preparedness	Sacramento County Citizen Voice			X	N

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Public Education Program	City of Elk Grove		X		N
Alerts and Warning System	City of Elk Grove		X		N
Emergency Operation Center (EOC)	City of Elk Grove		X		N
Critical Facilities Database Development and Data Maintenance Processes	City of Elk Grove		X		N
Increase Redundancy/ Functionality of Water Wells and Sewer Lift Stations	City of Galt		X		Y
Increase Data Capacity of Emergency Frequencies	City of Galt			X	Y
Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas	City of Sacramento		X		N
Data Center Disaster Recovery Improvement	Los Rios Community College District	X			N
Community Emergency Response Training (CERT)	Los Rios Community College District			X	N
Update the critical facilities identified during this DMA planning effort with the City's GIS technical group to support emergency management efforts.	City of Sacramento	X			N
<b>Bird Strike Mitigation Actions</b>					
Wildlife Hazard Management Plan	Sacramento County Airport System	X			N
<b>Dam Failure Mitigation Actions</b>					
Mather Dam Improvements	Sacramento County		X		N
Alder Creek Miners Dam	Sacramento County			X	N
Improved Flood Inundation and Evacuation Plan for Probable maximum flow from New Spillway at Folsom Dam	Sacramento County		X		N
Folsom Dam Joint Federal Project	SAFCA		X		N
Folsom Dam Raise	SAFCA		X		N
<b>Drought Mitigation Actions</b>					
Drought Contingency Plan	Southgate Park & Recreation District		X		Y
<b>Earthquake Mitigation Actions</b>					
Hughes Stadium Renovation at Sacramento City College	Los Rios Community College District	X			N
<b>Flood Mitigation Actions</b>					

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Improve County ALERT (Automated Local Evaluation in Real Time) system of stream and rain gages	Sacramento County		X		N
Elevation Projects to Mitigate Flood Risk	Sacramento County		X		N
Arcade Creek Corridor Plan	Sacramento County		X		N
Elevate up to Three Homes on Long Island (Grand Island Road, Sacramento River)	Sacramento County		X		N
Mitigation Projects for Repetitive Loss Structures/Areas	Sacramento County		X		N
Improve Strawberry Creek Basins at East Stockton Blvd	Sacramento County	X	X		N
Triangle Detention Basin	Sacramento County		X		N
Unionhouse Detention Basin Upstream of East Stockton Blvd Partnering with Park District and SAFCA	Sacramento County		X		N
Unionhouse Creek Joint Use Detention Basins – Park Active or Passive Joint Use	Sacramento County		X		N
South Sacramento Stream Group Detention Basins	Sacramento County		X		N
Elder and Gerber Creek	Sacramento County		X		N
Florin Creek Basins –Florin Vineyard Drainage Master Plan	Sacramento County		X		N
Joint Use Detention-Park Basins on Laguna Creek	Sacramento County	X	X		N
Pasa Robles Drive - Concrete Channel Lining Rehabilitation	Sacramento County			X	N
Chicken Ranch Slough - Concrete Channel Lining Rehabilitation	Sacramento County		X		N
Morrison Creek - Concrete Channel Lining Rehabilitation	Sacramento County			X	N
Mayhew Slough - Concrete Channel Lining Rehabilitation	Sacramento County			X	N
Strong Ranch Slough - Concrete Channel Lining Rehabilitation	Sacramento County			X	N
Keep Watershed Management Plan Current CRS Activity 450 (county and cities)	Sacramento County		X		N
Woodside Condominiums Repetitive Flood Loss Property	Sacramento County			X	N



Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Conversion to NAVD88 vertical datum (from NGVD29)	Sacramento County		X		N
Mitigation projects to reduce flood risk to critical facilities.	Sacramento County		X		N
Hydrologic and Hydraulic Modeling in Compliance with 2012 Central Valley Flood Protection Plan	Sacramento County		X		N
Delta Area Fire Station Needs to be Elevated or Flood Proofed to Protect Against Levee Breach Flooding to Assure Function in that Disaster Event.	Sacramento County			X	N
Update and Adopt Floodplain Management Ordinance in Light of Levee De-accreditation	Sacramento County	X	X		N
Mitigate Peak Flow on Dry Creek and Tributaries (including Sacramento County and City of Roseville)	Sacramento County		X		N
Repetitive Loss Church Building on Dry Creek	Sacramento County		X		N
Determine Cause and Mitigate Mercury and Methyl Mercury Coming from Tributaries of American River	Sacramento County		X		N
Pump Stations	Sacramento County	X	X		N
Public Outreach Mailers	Sacramento County		X		Y
Drainage improvements to reduce flooding on key evacuation routes	Sacramento County		X		N
South Branch Arcade Creek – Gum Ranch Basin (with Fair Oaks Park District)	Sacramento County			X	N
Dry Creek Flood Hazard Mitigation Acquisitions with County Park Dept	Sacramento County			X	N
Arcade Creek at Evergreen Estates Floodwall improvements	Sacramento County		X		N
Linda Creek Peak Flow Mitigation	Sacramento County		X		N
Improve flood protection and/or Evacuation Planning for Mobile Home/RV Park at Manzanita/Auburn. Alternatively, the park Should Establish Flood Warning and Evacuation Procedures.	Sacramento County		X	X	N

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Capital Improvement Projects – Pipelines (2012-13)	Sacramento County	X	X		N
Capital Improvement Projects – Pipelines (2014-15)	Sacramento County	X	X		N
New City Sump 90 Operation Plan	Sacramento County		X	X	N
Land Acquisition	Southgate Park & Recreation District		X		Y
Conservation Easements	Southgate Park & Recreation District		X		Y
Multi-jurisdictional Cooperation within Watersheds	Southgate Park & Recreation District		X		Y
South Sacramento Streams Group	SAFCA		X		N
American River Common Features	SAFCA		X		N
CVFPP - Flood Emergency Plan	City of Sacramento		X		N
Adopt Additional Floodplain Development Standards	City of Sacramento		X		Y
Update the General Plan to include the requirements of the CVFPP	City of Sacramento	X			N
Historic Magpie Creek Study	City of Sacramento	X	X		Y
South Sacramento Streams Project: Union Pacific Railroad Flood Wall	City of Sacramento	X			N
Natomas Levee Improvement Project (NLIP)	City of Sacramento	X	X		Y
Retrofit of Repetitive Loss Properties	City of Sacramento	X	X		Y
Preferred Risk Policy (PRP) Outreach Campaign	City of Sacramento		X		N
Drainage Projects for Repetitive Loss Properties	City of Sacramento	X	X		Y
Unionhouse Creek Existing Conditions LOMR and Channel Improvements	City of Sacramento	X			N
Emergency Notification and Evacuation Planning	City of Sacramento	X			Y
Drainage Projects from the City's Priority Drainage Project List	City of Sacramento	X	X		Y
Riconada Flood Wall	City of Citrus Heights		X		N
Storm Debris Removal	City of Elk Grove		X		N
Drainage and Flood Control Programs	City of Elk Grove		X		N
LID Rain Garden Plaza	City of Elk Grove	X	X		N

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
School Street Alley Drainage Improvements	City of Elk Grove	X			N
Elk Grove Creek Outfalls	City of Elk Grove	X			N
Elk Grove Creek Restoration	City of Elk Grove	X			N
Waterman Road Culvert Repair and Replacement	City of Elk Grove	X			N
Waterman Road Culvert Replacement	City of Elk Grove	X			N
Elk Grove Creek Flood Protection and Clean Water	City of Elk Grove		X		N
Elk Grove Watershed Recommended Improvements	City of Elk Grove	X			N
Multi-Functional Drainage Corridor for Shed C	City of Elk Grove		X		N
9816 Sheldon Road – Enlarge Culverts	City of Elk Grove	X			N
Sheldon Road Drainage Project	City of Elk Grove	X			N
Sleepy Hollow Detention Basin Retrofit	City of Elk Grove		X		N
Sleepy Hollow Lane Drainage Improvements	City of Elk Grove			X	N
East Elk Grove Area/ Rural Region Improvements	City of Elk Grove			X	N
Sheldon Road Ditch Improvements and Multi-Use Trails	City of Elk Grove			X	N
Laguna Creek Watershed Improvements (New Pipeline and Enlarge Existing Pipelines)	City of Elk Grove	X			N
Deer Creek Watershed Improvements (New Detention Basins)	City of Elk Grove			X	N
SCADA System for the Stormwater Pump Stations	City of Elk Grove		X		N
Dry Well Installation at Kent Street and St. Anthony Court	City of Elk Grove	X			N
Elk Crest Drive Pipes	City of Elk Grove	X			N
Strawberry Creek Detention Basin Retrofit	City of Elk Grove		X		N
Laguna Creek and Whitehouse Creek Multi-Functional Corridor Enhancement	City of Elk Grove		X		N
Whitehouse Creek Watershed Improvements	City of Elk Grove		X		N

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Grant Line Channel Improvements (Pump Station and Enlarge Pipes)	City of Elk Grove			X	N
Alder Creek Watershed Council	City of Folsom		X		Y
Redevelopment Area Drainage Improvements	City of Folsom		X		Y
Drainage System Maintenance Tax Assessment	City of Folsom		X		Y
Floodplain Mapping	City of Folsom	X			Y
Drain Inlet Retrofit Capital Improvement Plan (CIP)	City of Galt			X	Y
Creek/Streams Vegetation Management Plan	City of Galt			X	Y
Sunrise Boulevard Widening Kiefer to Jackson	City of Rancho Cordova		X		Y
Flood Response Equipment	Cosumnes Community Services District Fire Department		X		Y
Flood Response Training	Cosumnes Community Services District Fire Department		X		Y
Coordinate with SAFCA, CA-DWR, USACE, and Sacramento County on Proposed Flood Control projects on Magpie Creek	City of Sacramento			X	N
Storm Water Management Practices - Implement Storm Water Management Practices as identified in Stormwater Quality Design Manual	Southgate Park & Recreation District		X		Y
Main Drainage Canal Bank Stabilization and Sediment Removal	Reclamation District #1000			X	N
Security of District Facilities	Reclamation District #1000		X		Y
South River Pump Station Flood Protection Project	Sacramento Regional County Sanitation District		X		Y
SRCSO Critical Facilities Flood Study (Planning)	Sacramento Regional County Sanitation District			X	N
<b>Levee Failure Mitigation Actions</b>					
Hydromodification and Stormwater Quality countywide	Sacramento County			X	N
Ring Levees to Protect Delta Historic Villages	Sacramento County			X	N

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Levee Breach Scenario, Inundation, Evacuation, and Recovery Planning for Rural Areas South of Freeport	Sacramento County		X		N
Improved Flood Inundation and Evacuation Plan for Structural Flood Control System Failure Scenarios in Urban Areas	Sacramento County		X		N
Human Vertical Evacuation Structures in Areas of Widespread Flood Hazard	Sacramento County		X		N
Livestock Vertical Evacuation Mounds in Areas of Widespread Flood Hazard	Sacramento County		X	X	N
Implement the Recommended Actions of the Sherman Island Five Year Plan	Reclamation District #341		X		N
Highway 16 Levee Rehabilitation Project	Reclamation District #800			X	N
Bank and Levee erosion	Reclamation District #1000		X		Y
<b>Severe Weather: Heavy Rains and Storms Mitigation Actions</b>					
Public Education/Outreach Extreme Weather	City of Folsom		X		Y
Heating and Cooling Centers for Extreme Weather	City of Folsom		X		Y
District Wide Roofing Renovations	Los Rios Community College District		X		Y
Tree Management	Southgate Park & Recreation District		X		Y
<b>Wildfire Mitigation Actions</b>					
Fuels Reduction in the American River Parkway	City of Sacramento/Sacramento Metropolitan Fire District	X	X		N
Coordinate with the County and State to Create defensible space to protect vital infrastructure located in the American River Parkway from wildfires (from 2005 Plan)	City of Sacramento		X		N
Fuel Reduction and Modification	City of Folsom		X		N
Wildfire Prevention Outreach	City of Folsom		X		Y
Wildfire Hazard Identification	City of Folsom		X		Y
Arson Prevention & Control Outreach	City of Folsom		X		Y

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Ignition Resistant Building Construction Upgrades	City of Folsom		X		Y
Reduction of Fire Hazard SRCSD Bufferlands	Sacramento Regional County Sanitation District		X		Y
<b>Twin Rivers School District Annex*</b>					
Reduce Risk to Flooding of Northern Area Schools	Twin Rivers School District			X	N
New drainage plans to sites within the flood areas including, site drainage, storm drain upgrades and re-grading fields to shed water (on-site) away from buildings	Twin Rivers School District		X		Y
Work with City/County/Water departments to create defensible spaces at sites where nearby creeks are prone to flooding. Build-up earthen berms (off-site) to shed water away from critically located schools.	Twin Rivers School District		X		Y
Update the Emergency Preparedness Plan and the Emergency Operations Plan so that in event of emergency or disastrous event, personnel and procedures are in place and streamlined. This will include purchase of new equipment not reliant on typical system power; including communications equipment, emergency housing and supplies.	Twin Rivers School District		X		N
Working with the Department of the State Architect (DSA) on Earthquake Retrofit Plan on all sites.	Twin Rivers School District		X		Y
Revise and update district-wide Storm Water Prevention Plan	Twin Rivers School District		X		Y
Create email notification system for families for emergency situations.	Twin Rivers School District		X		N
Incorporate new rules for M&O department to keep drains clear, trees trimmed and vegetation removed to minimize impact during heavy rains.	Twin Rivers School District		X		N
Create defensible perimeter space – for fire areas. Trees trimmed and vegetation removed to minimize impact during fire season.	Twin Rivers School District		X		Y

Mitigation Action	Lead Jurisdiction	Complete	Ongoing	Not Started	Project in 2016 Update
Updating Evacuation Plans.	Twin Rivers School District		X		N
Updating District Policy for new Construction.	Twin Rivers School District		X		N
Updating Evacuation Plans for Excessive Heat	Twin Rivers School District		X		N
Updating Evacuation Plans for Streambank Erosion	Twin Rivers School District			X	N
Updating Evacuation Plans for Fog	Twin Rivers School District			X	N

\*The Twin Rivers School District was a participant in the 2011 Plan Update after the fact. As such, their mitigation actions were arranged in their 2011 annex in this order, and not by hazard.



## *Multi-Hazard Mitigation Actions*

### Enhance Public Awareness of the Effects of Natural Hazards and Public Understanding of Disaster Preparedness

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

Cal OES has developed a website for multi-agency initiatives and projects such as California Flood Preparedness Week; County Water Resources will include the link on its website and in its outreach campaigns. A multi-agency committee has been established to plan, develop and manage an annual campaign to educate California residents about their flood risk and how to prepare for potential flooding. The outreach components include:

- Preparing brochures and flyers to be handed out to the public at events,
- Developing consistent messages for individual agency websites
- Preparing radio messages for earned media and paid advertising utilizing a variety of social media tools to reach various populations including people with disabilities and those with access and functional needs

The County continues to develop methods to communicate with the community including Internet, direct mail, traditional media, and social media. Every year Water Resources works with public information professionals to improve messaging in the hope of helping County residents understand the risk of natural hazards, particularly flood, but also drought conditions.

### CRS Public Information Pilot Program

**Lead jurisdiction:** Sacramento County, City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

- City of Sacramento – The City completed a Program for Public Information (PPI) in February 2015 as part of the Comprehensive Flood Management Plan. The City Council will be adopting the PPI in the fall of 2015.
- Sacramento County – This is no longer a pilot program. The Program for Public Information is now within the 2013 Coordinator’s Manual for the CRS program in Activity 330. County Water Resources continues and improves its outreach efforts and will be looking to develop the Program for Public Information in the coming year. Working with the County office of emergency services and the levee maintaining agencies, there will be additional outreach efforts as required under the flood emergency action planning activity. The County is encouraged by Central Valley flood protection laws and by the NFIP Community Rating System to outreach levee and dam breach disaster scenario information to the potentially affected public. The County with the City of Sacramento and the levee maintaining agencies is establishing updated flood emergency action protocols and will outreach information to the public over coming months.

## Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

**Lead jurisdiction:** Sacramento County, City of Citrus Heights, City of Elk Grove, City of Folsom, City of Galt, City of Rancho Cordova, City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

- City of Citrus Heights – The General Plan and Zoning Code have been updated to mitigate most of the hazards identified in the LHMP as well as new state regulations. The General Plan and Zoning Code have a new flood hazard map showing an updated floodplain (August 2012) and known flooding areas. The General Plan and Zoning Code provide very stringent code to prevent future development within the flood hazards of the city. As much as possible, hazard mapping is updated yearly within the City’s website and Geographical Information System. The GIS mapping site has updated General Plan Layers, topographic LIDAR data and over 1000 FEMA elevation certificates. The result of the intergration of the LHMP into the General Plan has resulted in no reclamation of flood hazard property, less dense development near a flood hazard and a greater setback from the flood hazard. Furthermore, the Rinconanda Flood Wall indentified in the prior LHMP has been replaced with an improved drainage project. This project is over 50% complete and should be completed in 2017.
- City of Elk Grove – Language integrating the LHMP into the Safety Element of the General Plan is expected to be completed during the General Plan update anticipated to be completed by the summer of 2017.
- City of Folsom – The LHMP was implemented into General Plan update to be adopted in November 2017. The LHMP was also implemented into the Stormwater Basin Plan, Emergency Operations Plan, and various Capital Improvement Projects. The implementation helped in reducing risk. Implementation provided for loss avoidance.
- City of Galt – The LHMP wasn’t incorporated into our Safety Element of the City’s General Plan as it has not been updated since 2009. It will be incorporated in the General Plan when it is revised.
- City of Rancho Cordova - LHMP will be incorporated in next GP update.
- City of Sacramento – The LHMP was incorporated into our Safety Element of the City’s General Plan in 2007. It will remain in the General Plan in future revisions.
- Sacramento County – Complete. References to the Local Hazard Mitigation Plan (aka Multi-Hazard Mitigation Plan) were incorporated into the Safety Element of the General Plan amendment adopted on November 9, 2011. In addition to references on pages 3 and 10, the Multi-Hazard Mitigation Plan is the topic of Policy SA-32, in the Section on “Emergency Response”: “SA-32 The County will implement the Multi-Hazard Mitigation Plan in the planning and operations of the County to achieve the goals, objectives, and actions of the County’s Multi-Hazard Mitigation Plan.” The Multi-Hazard Mitigation Plan was adopted by the Board independent of the General Plan. It would seem that compliance with the requirement is fully met, even though the Hazard Mitigation Plan is not “adopted” in the Safety Element.

## Flood Insurance Promotion

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This is an on-going activity that is approached in several ways throughout the year. Extensive flood insurance outreach was conducted in conjunction with the digital flood insurance rate map (DFIRM) program and the levee decertification in the south Sacramento

county Delta areas. Several public meetings helped to inform residents of the importance of obtaining flood insurance. Direct mail newsletters were sent out to all residents impacted by a map change. Newsletters were posted in public areas and flood insurance rate maps and flood insurance materials were placed in public libraries.

In light of the National Flood Insurance Program (NFIP) reform eliminating subsidies and grandfathering rule that were enjoyed by many County property owners, there will be much effort to outreach to the public in the coming months.

It will become increasingly important for owners of buildings that were constructed prior to March 15, 1979 (enjoying 'pre-FIRM' subsidized flood insurance rates) to obtain elevation certificates. Several private engineers and surveyors are equipped to perform this service and the County Department of Water Resources offers this service for a fee.

Water Resources stays apprised of news related to NFIP reform and will work on effective messaging to the public. We continue outreach to the public pursuant to Activity 300 of the CRS program. Status: The flood insurance reform act of 2012 was revised in 2014 and subsequently FEMA has been working to understand the requirements moving forward. In that light, Water Resources floodplain management staff has been working to outreach the message to the public. For example, it was recently learned there is potential penalty to those property owners who do not carry flood insurance in areas recently mapped from Zone X to Zone AE. The deadline to acquire insurance is (within one year of the re-map?), for eligibility to 'grandfather' in at lower rates.. Further, upon transfer, a new owner must take over the existing flood insurance policy to maintain the 'grandfathered' status. (ref. WYO Bulletin 14053). As the details of the 2014 NFIP reform are fleshed out, it is important to communicate with our public.

## Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

- City of Sacramento – Much work has been accomplished to map critical facilities and to assess risks in the LHMP. Further analysis of critical facilities was accomplished in early 2014 with the CRS reverification process. The list is currently being updated again as part of the City's new Emergency Action Plan.
- Sacramento County – Sacramento City, American River Flood Protection District, Reclamation District 1000 and Sacramento County are developing a Comprehensive Flood ? Plan for the American and Sacramento Rivers, a standardized Emergency Safety Plan (ESP) for all four jurisdictions and both the City and County are installing new river flow gauges on both rivers. Sacramento Metropolitan Fire District is developing an emergency rescue response plan for the American River utilizing the up dated river data. These actions will unify the response to flooding and or levee emergencies with a shared language and operational plan for the two rivers. The County received grants from the CA Dept of Water Resources to financially assist levee maintaining agencies and for the City and County to develop levee breach flood evacuation and emergency action plans. This work is scheduled to be completed in 2016.

## Finalize and Implement the Actions of the South Sacramento Habitat Conservation Plan

**Lead jurisdiction:** Sacramento County, City of Elk Grove, City of Galt, City of Rancho Cordova, Sacramento Regional County Sanitation District, Sacramento County Water Agency, Southeastern Connector

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The South Sacramento Habitat Conservation Plan and Aquatic Resources Plan documents were completed in the summer of 2015. Final adoption of the SSHCP is expected in Summer/Fall of 2016.

## SAFELY OUT™ Evacuation Preparedness

**Lead jurisdiction:** Sacramento County, Citizen Voice

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort was not deemed to be as effective as some other outreach activities, so it is on hold.

## Public Education Program

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Public Education Program will continually be implemented to help reduce risk and help the City's residents be prepared for all types of hazards, preparedness and mitigation measures, and responses during hazard events.

## Alerts and Warning System

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City's reverse 911 program has been implemented and will help reduce all types of hazardous risks.

**Lead jurisdiction:** City of Elk Grove

## Emergency Operation Center (EOC)

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is still ongoing.

## Critical Facilities Database Development and Data Maintenance Processes

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

The critical facilities database was developed and is being updated as needed. This will help reduce risks by identifying the locations of critical facilities.

## Increase Redundancy/ Functionality of Water Wells and Sewer Lift Stations

**Lead jurisdiction:** City of Galt

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The mitigation has been implemented within the CIP. Some water wells were rehabilitated. Some Sewer Lift Stations were rebuilt and/or rehabilitated. No evidence of risk reduction or loss avoidance.

## Increase Data Capacity of Emergency Frequencies

**Lead jurisdiction:** City of Galt

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** No money has been budgeted nor grants found to implement mitigation.

## Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

## Data Center Disaster Recovery Improvement

**Lead jurisdiction:** Los Rios Community College District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Project completed successfully and was funded by District funds.

## Community Emergency Response Training (CERT)

**Lead jurisdiction:** Los Rios Community College District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Funding was not available for this project and it will not be pursued in the future. We continue to train employees on Campus Community Emergency Response Training (CCERT)

Update the critical facilities identified during this DMA planning effort with the City's GIS technical group to support emergency management efforts.

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Critical facilities list will be updated by City OES and Utilities with the current efforts on the Emergency Action Plan grant. It should be completed in late 2015.

### *Bird Strike Mitigation Actions*

#### Wildlife Hazard Management Plan

**Lead jurisdiction:** Sacramento County Airport System

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Wildlife Hazard Management Plan (WHMP) for Sacramento International Airport (SMF) was approved by the Federal Aviation Administration (FAA) on April 8, 2013.

### *Dam Failure Mitigation Actions*

#### Mather Dam Improvements

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** On December 11, 2012, County Board of Supervisors approved a Cooperative Agreement with the US Air Force to provide up to \$5,350,000 to fund the study, design, and construction of dam improvements to bring the dam into compliance with Division of Safety of Dams (DSOD) requirements. The US Air Force transferred ownership of the dam to Sacramento County in May 2013. County Water Resources, with design consultant AECOM, continue to coordinate the study and design of dam improvements with DSOD.

As of 2015, hydrology & hydraulic analysis, environmental surveys, and permit investigations occurred over the past year. Design work continues to progress.

#### Alder Creek Miners Dam

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** It was noted in 2012 that this site is in the City of Folsom, on the Aerojet property, in Alder Creek within the drainage area of the Glenborough planning area. The Developer, Gencorp, is working with the City of Folsom and the County Dept of Water Resources to determine what should be done to assure safety of the dam. The Division of Dam Safety has stated, in an April 22, 2010 email to the County Water Resources that the dam is not of a size that requires certification through their office (being 21’ high and 35AF volume). Nevertheless, catastrophic failure could cause some short term flooding of Folsom Blvd and Hwy 50, possibly of greater interest is the many feet of sediment that has accumulated in the reservoir.

As of late 2014, there is no news on this subject; this should be addressed, with the City of Folsom as the Aerojet redevelopment proceeds. 2015 again noted no change. The Glenborough project consultant is working to respond to questions from FEMA regarding the functionality of the dam. The reservoir is property owned by the City of Folsom, while the ramifications could affect the County.

### **Improved Flood Inundation and Evacuation Plan for Probable maximum flow from New Spillway at Folsom Dam**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Folsom Dam Joint Federal Project is well underway with construction expected to be completed in Late 2017. The next project at Folsom will be to raise the dam providing additional volume. It is expected that the completed dam project will reduce the 1:200yr peak flood flow in the lower American River to about what the mean 1:100yr flow is today. Thus, allowing for certification of the levee system in accordance with the requirements of Central Valley Flood Protection legislation (2007-SB-5 and subsequent bills). Meanwhile, SAFCA is working to certify the American River levees to the 1:100yr FEMA standard.

In 2014, we received the 200-yr flood maps from the California Department of Water Resources, assuming a release of 230,000 cubic feet per second from the dam. Based on this information and other flow rates the City and County of Sacramento will prepare inundation and evacuation maps (funded by a grant from the state). In 2015, the City and County with Reclamation District 1000 and American River Flood Control are preparing a flood emergency action plan update.

### **Folsom Dam Joint Federal Project**

**Lead jurisdiction:** SAFCA

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

### **Folsom Dam Raise**

**Lead jurisdiction:** SAFCA



**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):**

### *Drought Mitigation Actions*

#### **Drought Contingency Plan**

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Southgate RPD has taken measures consistent with the State’s mandatory drought emergency water conservation guidelines to reduce water consumption since 2014 and has continued to do so through 2016. Since our parks and facilities depend on water to remain viable as recreation opportunities, Southgate RPD is always trying to identify water-saving measures. Southgate RPD has taken steps to use water more efficiently, such as replacement of more efficient sprinkler heads, fixing line breaks immediately, replanting underutilized areas with drought-tolerant plants, and reseeding with grasses that perform well under drought conditions when possible.

Loss Avoidance: Cannot be determined

### *Earthquake Mitigation Actions*

#### **Hughes Stadium Renovation at Sacramento City College**

**Lead jurisdiction:** Los Rios Community College District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Was successfully completed with District funds.

### *Flood Mitigation Actions*

#### **Improve County ALERT (Automated Local Evaluation in Real Time) system of stream and rain gages**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2014 with partial funding from a State grant, this project was launched. County Water Resources is working to assure that the computer system is working properly (indoors) before we begin upgrading the units at the ALERT sites (outdoors). 2015 Status: The ALERT system is functioning well to serve the community as the upgrades continue. Expansion of the ALERT system will depend upon land development and interests in monitoring the streams.

#### **Elevation Projects to Mitigate Flood Risk**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: as the County looks ahead to implementation of the flood insurance reform, there is a strong possibility that property owners may become more interested in flood risk mitigation. There is one home elevation project slated for 2016 in the Delta area. Water Resources anticipates increased interest in flood hazard mitigation prompted by increasing flood insurance cost.

### Arcade Creek Corridor Plan

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The County remains interest in construction of two bike trails crossings over Arcade Creek. and in other actions recommended by the Watershed Group.

### Elevate up to Three Homes on Long Island (Grand Island Road, Sacramento River)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** urrently, one applicant/ resident on Long Island has begun design work to elevate their home under a HMGP grant fund. The project is progressing.

### Mitigation Projects for Repetitive Loss Structures/Areas

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: as the County looks ahead to implementation of flood insurance reform, there is a strong possibility that property owners may become more interested in flood risk mitigation.

### Improve Strawberry Creek Basins at East Stockton Blvd

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: the City of Sacramento and SAFCA constructed berms and channel improvements along a portion of Strawberry Creek in 2013 to protect existing residential areas form overbank flooding. These areas were removed from the FEMA floodplain in 2014 floodplain map revision (LOMR) based on the model developed for the US Army Corps and the channel improvement constructed. The work by the City largely resolved downstream flooding concerns. However the updated LOMR model will be used to evaluate potential impacts to these channel improvements and flood control system due to future development in upstream areas of Strawberry Creek with Sacramento County and Elk Grove.

## Triangle Detention Basin

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: the County is seeking additional right of way at the inter-basin transfer to construct a second detention basin. Both the Triangle Rock Basin and the second basin will allow the inter-basin transfer of flow from Laguna Creek to Gerber Creek to be cut-off. A Conditional Letter of Map Revision (CLOMR) will be submitted to FEMA once the right-of-way for the second basin has been acquired and a basin design prepared.

## Unionhouse Detention Basin Upstream of East Stockton Blvd Partnering with Park District and SAFCA

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2012 it was reported that Water Resources continues to work with the City of Sacramento, the Corps of Engineers and Sacramento Area Flood Control Agency. As of 2014, there was nothing new to report on this measure.

## Unionhouse Creek Joint Use Detention Basins – Park Active or Passive Joint Use

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: This measure is moving forward as development is planned in the watershed area.

## South Sacramento Stream Group Detention Basins

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: Sacramento County continues to evaluate development planning in the County to ensure there will be no impacts to FEMA flood insurance study base flood elevations within the City of Sacramento and is working closely with the City of Sacramento and SAFCA to evaluate impacts that development projects may have on recently constructed state and federal flood control projects. Sacramento County is working with the US Army Corps, SAFCA and the City of Sacramento to construct improvements along Florin Creek including an off-line detention basin at a park site owned by Southgate Recreation and Park District. The project will reduce out bank flooding and remove about 500 homes in the City and 20 homes in the County from the FEMA floodplain.

## Elder and Gerber Creek

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** in 2012 it was reported that Water Resources continues to seek opportunities prepare this project for further advancement by development interests. In 2013, it was stated that the land development interests are engaging again with Water Resources after a long recession. There should be more to report next year. In 2014, Water Resources was actively working with County Real Estate Division to acquire channel right-of-way. Development interests intend to construct the lower reach of Elder Creek, the upper reach of Elder Creek, and the upper reach of Gerber Creek in the next two construction seasons. 2015 saw ground breaking, with target to complete in 2018.

### Florin Creek Basins –Florin Vineyard Drainage Master Plan

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2012 there was very little development activity at the time. The finance plans are not yet implemented. In 2013, there seemed to be some renewed land development interest; there might be more to report next year. In 2014, the developer of a proposed subdivision named Florin Vineyards is working on a drainage study to detail a proposed reach of concrete lined channel to serve the fact that downstream drainage flowline is too high for the pipe that had been a part of the original drainage master plan document. As of 2015, developers continue to work on a drainage study to evaluate creek drainage improvements that mitigate flood impacts and address environmental constraints.

### Joint Use Detention-Park Basins on Laguna Creek

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2012, it was reported that this project can be ready for a Vineyard Springs Developer to construct after the Triangle weir is in place and subject to hydraulic analysis and an approved FEMA map revision submittal. Water Resources continues to pursue this goal. It was reported in 2013 that there seems to be some renewed land development interest; there might be more to report next year. As of 2014, the weir was constructed at Triangle Aggregate.

Southgate Basin - The County is working to obtain the Corps permit. The preliminary design is complete for the Southgate detention basin, construction will await developer interest in obtaining the fill material from the basin.

### Pasa Robles Drive - Concrete Channel Lining Rehabilitation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started.

### Chicken Ranch Slough - Concrete Channel Lining Rehabilitation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started. Funding for initial studies is included in the current fiscal year budget.

### Morrison Creek - Concrete Channel Lining Rehabilitation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started.

### Mayhew Slough - Concrete Channel Lining Rehabilitation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started.

### Strong Ranch Slough - Concrete Channel Lining Rehabilitation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started.

### Keep Watershed Management Plan Current CRS Activity 450 (county and cities)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Every year the County receives development plans, FEMA floodplain studies, hydrology and hydraulic analyses and, of late, a state mandated 200-year flood hazard mitigation requirement; meanwhile, watersheds know no political boundaries. No adverse impact is a CEQA mandate yet watershed models may show unintended consequences farther downstream from a development area. Consequently, Sacramento County and the cities must maintain a continuous dialogue to assure each other that flood hazards are not exacerbated. To accomplish this, in 2012, the County Water Resources developed the Watershed Management Plan (WMP) as appendix to the Countywide Hazard Mitigation Plan. The WMP is updated every five years in concert with this LHMP. The 2016 WMP update was outreached to the cities and is currently being evaluated (for Community Rating System credit) by the Insurance Services Office.

## Woodside Condominiums Repetitive Flood Loss Property

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** There has been no activity on this mitigation measure. Water Resources stands ready to assist Woodside including the pursuit of mitigation project grant funding. Status: National Flood Insurance Program, as reformed in 2014, will continue to increase insurance rates. It was recommended to the homeowners' association to retain the services of an engineering consultant who could prepare elevation information to assure that their insurance agent correctly rates their policy. Meanwhile, Water Resources annually discusses flood preparedness and flood hazard mitigation measure with the Woodside manager and HOA president.

## Conversion to NAVD88 vertical datum (from NGVD29)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** As of 2014, this effort is progressing. Conversion to NAVD 88 Vertical Datum – Status: This effort continues, it was suggested that the County consider seeking a FEMA grant to assist in the assurance that NAVD88 benchmarks are widely available for those surveyors who do not use GPS survey systems.

## Mitigation projects to reduce flood risk to critical facilities.

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Starting in the fall of 2014, Sacramento City and County will be updating flood plain maps and information for the American River Flood Plain utilizing the new river flow rates provided by the US Bureau of Reclamation. The new flood plain maps will be used to develop evacuation planning, strengthening infrastructure facilities based on the new information.

## Hydrologic and Hydraulic Modeling in Compliance with 2012 Central Valley Flood Protection Plan

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** in 2012, the standards and applicability are not yet clearly stated by California officials. It was noted in 2014 that there should be more to report on this in 2015-2016. The CVFPP Urban Level of Protection Criteria “ULOP” is published by the state and the County intends to implement it. The City and County of Sacramento and the City of Elk Grove will work with SAFCA to develop a plan to achieve 200-yr flood protection before 2025, in accordance with ULOP, for urban areas protected by levees. ULOP also applies to streams with more than 10 square miles of contributing watershed area. Update 2015 Status: the CVFPP Urban Level of Flood Protection Criteria

requires analysis of the 1:200yr storm event. In discussions with weather and climatology professionals there seems to be some uncertainty in the determination of the depth, duration and intensity of such a statistically improbable event particularly in light of the President's Executive Order 13690, recommending consideration of global climate change. It was suggested that the County seek a FEMA grant to assist in this analysis.

### **Delta Area Fire Station Needs to be Elevated or Flood Proofed to Protect Against Levee Breach Flooding to Assure Function in that Disaster Event.**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Not started.

### **Update and Adopt Floodplain Management Ordinance in Light of Levee De-accreditation**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Board of Supervisors adopted the updated floodplain management ordinance. This activity is completed as of 2014. In 2015, it was reported that the California Central Valley Flood Protection law requires amendment to the Ordinance to assure reasonable level of protection from the 1:200yr flood hazard in urban areas where the contributing watershed exceeds ten square miles. The Central Valley Flood Protection Plan Urban Level of Flood Protection Criteria requires inclusion of mitigation for the 1:200 year flood hazard in the Zoning Code, thus a revision to the County's Floodplain Management Ordinance. Water Resources staff are working on this.

### **Mitigate Peak Flow on Dry Creek and Tributaries (including Sacramento County and City of Roseville)**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** There is no regional flood control basin proposed for Dry Creek. As of 2015, Placer County Flood Control with the City of Roseville is planning a basin on Antelope Creek that is reported to reduce peak flow in Dry Creek, measured at Vernon Street by ultimately to 800 cubic feet per second. Phase 1 work should begin in coming few years.

### **Repetitive Loss Church Building on Dry Creek**

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Water Resources stands ready to provide technical assistance and/or to apply for FEMA grant opportunities to help mitigate this situation. Annual outreach efforts should serve to keep this in the mind of the owners. In 2014, as the County looks ahead to



implementation of the flood insurance reform, there is a strong possibility that property owners may become more interested in flood risk mitigation.

## Determine Cause and Mitigate Mercury and Methyl Mercury Coming from Tributaries of American River

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** As reported in 2012, the County Stormwater Program is pursuing the following actions, primarily as part of the Sacramento Stormwater Quality Partnership (SSQP, a collaboration of the County and the cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova, and Sacramento):

1. Continuing to implement the Mercury Plan submitted in 2004 to the Central Valley Regional Water Quality Control Board. This plan includes provisions for mercury control, including proper management of mercury wastes (proper lamp disposal by County maintenance, and household hazardous waste services for the public), control of industrial sites with the potential to discharge mercury, municipal operations (e.g. street sweeping, channel cleaning) and public outreach efforts.
2. Developing a quantitative model to better estimate the contribution of structural Best Management Practices (BMPs) at new and existing developments for removing mercury (and other pollutants).
3. Completed Phase I control study of structural BMPs done in compliance with the Delta Mercury Total Maximum Daily Loads (TMDL). The results of the control study will be utilized to refine estimates of the effectiveness and feasibility of controlling mercury within the urban watershed.
4. Contributed to the development and funding of the Methylmercury Exposure Reduction Plan (a program implemented by the California Department of Public Health), as required by the Delta Mercury TMDL.
5. Explore opportunities to work with other parties subject to mercury TMDLs to develop approaches for reducing key mercury sources cost effectively on a watershed basis. This may include working with entities such as the California Department of Water Resources and others that are involved in managing Delta waterways, levees, islands, and other land uses and activities that have the potential to impact methylmercury levels.

The County was unable to reach agreement with the US Bureau of Reclamation to support a joint study of mercury discharges from Alder Creek. The County is interested in continuing to explore funding sources and partners to characterize and mitigate as necessary the potential hazard of mercury laden sediment in Alder Creek including that in the impoundment created by the small dam on the creek. upstream from Folsom Boulevard.

6. Continuing support California Product Stewardship Council efforts to promote Extended Producer Responsibility for mercury lamps and other mercury containing products.

## Pump Stations

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** 2015 status: D05 Howe Avenue is scheduled for construction in 2016. D02 Kadema and D09 Mayhew are currently under construction. D45 Franklin Morrison and D06 North Mayhew design is scheduled for 2016. D11 West Coloma was removed from the list when the City of Rancho Cordova assumed ownership of the facility this past year.

## Public Outreach Mailers

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** These mailers go out every year, September through November. This year approximately 10, 300 tri-fold mailers were sent to County residents within both FEMA and locally identified flood zones. Mailer information subscribe to all CRS required information such as informing residents they are in a flood zone, encouraging them to maintain flood insurance and offering contact information for additional information.

## Drainage improvements to reduce flooding on key evacuation routes

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2014, it was reported that the County will be working on evacuation routing as part of the urban flood emergency action planning project with the City of Sacramento. This will occur over the next few years {under a grant from the state}. Furthermore, when the Capital Southeast Connector Project is constructed it will be a facility that can serve as a major evacuation route to the region.

## South Branch Arcade Creek – Gum Ranch Basin (with Fair Oaks Park District)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2014, there was no developer for this project. 2015 Status: The schedule for land development is in the hands of the landowner to decide.

## Dry Creek Flood Hazard Mitigation Acquisitions with County Park Dept

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** As the County looks ahead to implementation of

the flood insurance reform, there is a strong possibility that property owners may become more interested in flood risk mitigation.

### Arcade Creek at Evergreen Estates Floodwall improvements

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The levee-floodwall system is shown on the FEMA flood insurance rate maps as provisionally accredited, however that status has expired and the neighborhood will be mapped as a special flood hazard area in the next FEMA map revision. The project necessary to bring the wall into FEMA 100-yr and California 200-yr design standard is very expensive and involved disturbance to non-benefitting property owners. Meanwhile, the wall has served the neighborhood well saving them from at least three floods (1995, 1997, 2005) since it was constructed. Physical flood fighting is necessary during exceptional high water events. The improvement necessary, to assure flood protection by the floodwall system, is very expensive, affecting Winding Way and several private properties. There is a developer holding the vacant land to the west of Evergreen Estates who is motivated, but the cost of the flood control improvements are prohibitive. This will become a greater concern as the NFIP reform is implemented. There may be motivation to consider alternatives such as home elevation. 2015 Status: The City of Sacramento plans to reconstruct the Auburn Blvd bridge crossing Arcade Creek, immediately downstream of the subject floodwall. Water Resources is working with the City to determine if there is anything that can be done to improve conveyance, knowing that the existing condition leaves Auburn Blvd vulnerable to flood water overtopping in the 1:20 year storm event (e.g. Dec 31, 2005). Meanwhile, Water Resources is talking to FEMA about levee mapping procedures in hope of lowering the base flood elevation in Evergreen Estates.

### Linda Creek Peak Flow Mitigation

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Any development in this watershed pays the Zone 11C supplemental fee for Linda Creek ‘fair share’ mitigation. The funds are transferred to Placer County Flood Control as compensation for impacts to the watershed. FEMA flood insurance rate mapping, dated August 16, 2012, includes the latest study prepared by Nolte Engineering (under a FEMA cooperating technical partnership agreement), and Placer County prepared an updated model of the Dry Creek watershed. County Water Resources has no significant flood control projects planned in this watershed, but intends to cooperate with Placer County as mitigation projects are contemplated.

In 2014, Placer County Flood Control developed a new nexus study, there may be a minor adjustment to the fee in this area as the Zone 11 Fee Study is updated it will be outreached to Placer County for comment.

Improve flood protection and/or Evacuation Planning for Mobile Home/RV Park at Manzanita/Auburn. Alternatively, the park Should Establish Flood Warning and Evacuation Procedures.

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The property owner hired an engineer (Watermark) to consider mitigation measures. – Status: nothing to report at this time.

### Capital Improvement Projects – Pipelines (2012-13)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The following projects were constructed in 2012: El Sur/Arden Way, Elkhorn Boulevard/Schofield Way – Phase 2, Flagstone Street/Agate Way, and New York Avenue/Oriana Court.

Projects under construction in 2013: Elkhorn Boulevard/Schofield Way – Phase 3. The Ravenwood Avenue project was re-assessed and the construction date was revised to 2015. The Barrington Road project investigation determined the project was not needed and the project was deleted. A portion of the Kings Way/Verna Way project was pulled from the project to create the El Camino Ave – Transportation Project Phase I project. This project was scheduled for construction in 2013 as a part of an Additive bid section of a County Transportation project. Due to high bids on the Base Bid, County Transportation did not add any Additives to their project. As a result, the El Camino Ave – Transportation Project Phase I project was deleted and the planned work was returned to the Kings Way/Verna Way project. In addition, the Kings Way/Verna Way project was re-assessed and the construction date was revised to 2017. The 3509 El Camino Avenue project was re-assessed and combined with other adjacent projects resulting in the revised name of Kentfield Way/Watt Avenue and construction date of 2014.

In 2015, it was reported that the Ravenwood and Kentfield Way/Watt Avenue projects are currently under construction. The Kings Way/Verna Way project remains on schedule for 2017.

### Capital Improvement Projects – Pipelines (2014-15)

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Somersby/Wixford and Eastern/Arden projects were re-assessed and their construction dates were revised to be beyond 2018. The Rich Hill Drive project was re-assessed and the construction date was revised to 2018. The following projects have been added to replace the three previously scheduled projects with construction dates noted in parenthesis:

- Femoyer Street Outfall (2014)
- Florin Road/Frasinetti Road (2014)

- Kentfield Way/Watt Avenue (2014)
- Kovanda Avenue (2014)
- Rowena Way (2014)
- Ravenwood Avenue (2015)

As of 2015, the Kentfield Way/Watt Avenue and Ravenwood projects are currently under construction. The Florin Road/Frasinetti Road project is under review and may no longer be needed due to recent upstream private development improvements.

### New City Sump 90 Operation Plan

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Nothing to report. The schedule is led by the City of Sacramento Department of Utilities as the pump operator.

### Land Acquisition

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Park lands within the North Vineyard Station Specific Plan area have been designated in locations adjacent to Elder Creek, Gerber Creek and Laguna Creek. The park sites will have storm water detentions basins with water quality treatment functions, and trail facilities. In addition there is also a proposed park with an integrated multi-use storm water detention basin with soccer fields adjacent to Laguna Creek within the Vineyard Springs Comprehensive Plan area. In 2016 Florin Creek Park was expanded and converted to a multi-use basin for recreational use. The basin will provide flood control for areas within the 100-year flood plain of Florin Creek and improve recreational benefits at the park site. Southgate RPD continues to pursue the acquisition of open space land when it makes geographic and economic sense and proves beneficial to Southgate RPD’s long term acquisition goals.

Loss Avoidance: TBD

### Conservation Easements

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Southgate RPD is in the process of acquiring property within the North Vineyard Station Specific Plan – Elder Creek and Gerber Creek open space preserve area associated with current subdivision developments and as a required by the U.S. Army Corps of Engineers. A conservation easement will be granted over each portion of the Preserve. The conservation easement will run with the land and protect the Preserve as wetland and wildlife habitat in perpetuity, subject to the long term management responsibilities of Southgate RPD and drainage maintenance

responsibilities of Water Resources for the purpose of flood control maintenance. Wildlife Heritage Foundation will hold the Conservation Easement over the Preserve areas. Southgate RPD will manage and maintain the preserve as outline in the Open Space Preserve Operations and Management Plan for the North Vineyard Station Specific Plan – Elder and Gerber Creek.

Loss Avoidance: TBD

### Multi-jurisdictional Cooperation within Watersheds

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Southgate RPD has participated with SAFCA “Sacramento Area Flood Control Agency” to construct a multi-use basin at Florin Creek Park to provide flood control for areas within the 100-year flood plain of Florin Creek. The improvements included the reconstruction of a paved trail along the Florin Creek channel that connects Sheldon Park and Florin Creek Park. The U.S. Army Corps of Engineers proposed the construction of improvements to the creek in conjunction with SAFCA, the State Department of Water Resources, City of Sacramento and County of Sacramento.

Loss Avoidance: TBD

### South Sacramento Streams Group

**Lead jurisdiction:** SAFCA

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** SAFCA is not a participant in this plan process. As such, no update on this action was available from the Agency.

### American River Common Features

**Lead jurisdiction:** SAFCA

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** SAFCA is not a participant in this plan process. As such, no update on this action was available from the Agency.

### CVFPP - Flood Emergency Plan

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** A DWR grant was awarded to the City and County of Sacramento, reclamation districts, and other local partners in September 2013. The grant includes writing a regional emergency action plan, upgrading the ALERT system, funding part of the new reverse 911



system, flood inundation maps, and emergency response training. Currently, the new emergency action plan and flood inundation maps are in draft format.

### Adopt Additional Floodplain Development Standards

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Development Services Task Force has made recommendations on additional floodplain development standards and submitted them to FEMA. These will be added to the City’s Floodplain Ordinance will be taken to City Council this fall of 2015 along with the Comprehensive Flood Management Plan.

### Update the General Plan to include the requirements of the CVFPP

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City updated its General Plan in March 2015 and has incorporated the required maps and policies to comply with the CVFPP and SB 1278. The City will have its zoning code amended by March 2016 to meet other CVFPP and SB1278 requirements.

### Historic Magpie Creek Study

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** FEMA’s new guidelines, “The Revised Analysis and Mapping Procedures for Non-Accredited Levees”, are in final form as of July 2013. Using these guidelines will allow the City and FEMA to map the Magpie Creek floodplain assuming overtopping of the diversion instead of just assuming the diversion is non-existent. This will allow for more accurate and realistic floodplains. FEMA is still working on the physical map revision study for Magpie Creek.

### South Sacramento Streams Project: Union Pacific Railroad Flood Wall

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The flood wall was completed at the 2012. The certification data for the flood wall was submitted to FEMA on June 18, 2013. About 3,200 residents were removed from the floodplain in May 2014.

### Natomas Levee Improvement Project (NLIP)

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The work is complete to meet the A99 Zone criteria in the Natomas Basin. The project received federal authorization from Congress in June 2014 for the NLIP, which was another FEMA A99 requirement. The A99 flood zone became effective on June 16, 2015. For 200-year protection and to obtain X Zone for the basin, it is predicted that this construction work will be completed in approximately 2019 by the Corps.

### Retrofit of Repetitive Loss Properties

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City submitted a request to FEMA in December 2007 and September 2009 to remove 19 properties from the Repetitive Loss List. In the January 2011 repetitive loss data, these 19 properties were removed from the unmitigated Repetitive Loss list. The list has dropped from 40 to 21 properties. Grants were applied for in September 2011 to retrofit 3 repetitive loss properties, but the Local Hazard Mitigation Plan was not approved by FEMA and City Council until June 2012. Grants will be pursued in the future.

### Preferred Risk Policy (PRP) Outreach Campaign

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Since July 2010, the City has engaged in a public education campaign to educate property owners in the City of Sacramento about PRP policies, the benefits of having a PRP to protect your home and investment, and the dangers of living behind levees. In spring of 2011, City staff attended 6 community meetings in Natomas held by the Sacramento Area Flood Control Agency and hosting a table at each of the meetings sharing information regarding the importance of flood insurance. The City also worked with the Sacramento Business Journal and the Natomas Buzz on stories pertaining to the impacts of the Corrective Action Plan and the current flood zone designation in Natomas.

The City also promoted flood insurance by: insertion of the “Be Flood Ready” Brochure in the November City of Sacramento Utility Bills; the billboard on Business Interstate 80 carrying the “Be Flood Ready. Buy Flood Insurance.” Message from November 2010-February 2011; and ads on Regional Transit buses for November and December 2010 stating “Be Flood Ready. Buy Flood Insurance.” The City saw more than a 10% increase in PRP policies from 2008 to 2010. Although, this is hard to measure since Natomas residents were in the 2-year PRP extension program and the floodplain changes from Letter of Map Revisions and Physical Map Revisions.

	<b>AE, A,A0, AH</b>	<b>AR,A99, STD.X</b>	<b>PRP</b>	<b>TOTAL</b>
Apr-08	NA	NA	NA	43,789
Aug-08	737	12,360	30,050	43,147
May-09	1,318	16,984	30,107	48,409
Aug-09	924	30,974	19,459	51,357
May-10	1,047	15,091	33,434	49,572
Sep-10	1,106	15,372	32,722	49,200
Mar-12	791	10,676	36,459	47,926
Oct-13	571	3,788	40,277	44,636

### Drainage Projects for Repetitive Loss Properties

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City submitted a request to FEMA in December 2007 and September 2009 to remove 19 properties from the Repetitive Loss List. In the January 2011 repetitive loss data, these 19 properties were removed from the unmitigated Repetitive Loss list. The list has dropped from 40 to 21 properties. Grants were applied for in September 2011 to retrofit 3 repetitive loss properties, but the LHMP was not approved by FEMA and City Council until June 2012. Grants will be pursued in the future. In addition, the City listed local drainage projects for three repetitive loss sites in the 2013 American River Basin Integrated Water Management Plan, which allows for grant opportunities.

### Unionhouse Creek Existing Conditions LOMR and Channel Improvements

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The construction for channel improvements along Unionhouse Creek was finished at the end of 2012. A conditional letter of map revision (CLOMR) was not completed for Unionhouse Creek because the Base Flood Elevation was not increased with the proposed project. A LOMR was submitted in June 2013 to reflect the Unionhouse Creek project and the other South Sacramento Streams Group floodwalls. In May 2014, the LOMR was approved. Approximately 3,200 parcels were removed from the floodplain.

## Emergency Notification and Evacuation Planning

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Reverse 911 system of emergency notification is complete. Now, in addition to regular testing and deployment, two “self registration portal announcement” system launches were completed (February 2012). These announcements reached 14,145 locations in the North Natomas / 95835 zipcode. Communications Center Staff attended the Natomas Charter School Festival (May 2012) in an effort to educate area residents about the Reverse 911 system’s self registration portal for mobile devices. Staff took a wireless laptop so interested persons could initiate registration on site. The Winter 2012 edition of City Express, a quarterly City of Sacramento newsletter, included an article titled, “What is Reverse 911 and why should I sign up?”. Since 2012, County and City OES have implemented an even faster system than Reverse 911 called Everbridge. The residents who registered for Reverse 911 were transferred to the new system.

## Drainage Projects from the City’s Priority Drainage Project List

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The drainage projects constructed in 2014 included:

- Sump 157 Access Ramp – \$73,000
- PG&E Ditch Improvements - \$888,000
- Sears Ditch Liner Repair Project - \$233,000
- River Park drainage Improvements - \$512,000
- Sump 44 Discharge Main Replacement - \$50,000

The design and/or construction of following projects are currently underway:

- Sump 115 Electrical Rehabilitation - \$160,000
- Sump 117 Electrical Rehabilitation - \$233,000 Sump 38 & 39 Switchgear Replacement - \$280,000
- Sump 22 Generator Control Panel - \$30,000
- Leisure Lane/Hwy 160 Box Culvert - \$250,000
- Drainage Sump Outfall Design - \$300,000
- Sump 90 Inlet Channel Repair - \$118,000
- Sump 142 Site and Outfall Repair - \$90,000
- Sump 138 Site and Outfall Repair - \$149,000
- Sump 34 Load Bank Project - \$254,000
- Sump 28 Load Bank Project - \$180,000
- 65th Avenue/25th Street Drainage Improvement - \$437,000
- Basin 141 Pipe Improvements - \$1,650,000
- Hudson Way Drainage Improvements - \$150,000
- Florin Creek Detention Basin - \$4,000,000

## Riconada Flood Wall

**Lead jurisdiction:** City of Citrus Heights

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Based on the 2012 revisions to the local flood plain hazard, the city changed the project. A new project includes install approximately 500' of 42" Storm drain pipe in an effort to remove 13.1 acres of runoff area that contributed to Riconada. This area is being redirected to a location 250' downstream of the street. The initial 250' of pipe, inlets and outfall has been installed as part of a new development. The City will complete the pipe & inlet installation in 2017.

## Storm Debris Removal

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Based on the 2012 revisions to the local flood plain hazard, the city changed the project. A new project includes install approximately 500' of 42" Storm drain pipe in an effort to remove 13.1 acres of runoff area that contributed to Riconada. This area is being redirected to a location 250' downstream of the street. The initial 250' of pipe, inlets and outfall has been installed as part of a new development. The City will complete the pipe & inlet installation in 2017.

## Drainage and Flood Control Programs

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Drainage and Flood Control Programs are implemented to reduce risk and losses. The Drainage and Flood Control Programs are identified in the City of Elk Grove's Storm Drainage Master Plan.

## LID Rain Garden Plaza

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project has been constructed; however, it is an educational stormwater garden/facility which provides continuous education and outreach efforts on Low Impact Development (LID) practices and using stormwater as a resource.

## School Street Alley Drainage Improvements

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed and it reduced

localized flooding in the alley. The Storm Drainage Master Plan efforts identified this area as being impacted by localized flooding if improvements were not completed.

### Elk Grove Creek Outfalls

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed to prevent backwater flows onto the streets from the creek. This improvement reduces risks of localized flooding on the streets.

### Elk Grove Creek Restoration

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed and helped with habitat restoration efforts.

### Waterman Road Culvert Repair and Replacement

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed and it replaced a damaged 66-inch culvert under the roadway reducing risks to the roadway failing and impacts to drainage flow.

### Waterman Road Culvert Replacement

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed and it replaced a badly deteriorated culvert under the roadway reducing risks to the roadway failing and impacts to drainage flow.

### Elk Grove Creek Flood Protection and Clean Water

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is on-going. The City submitted for a Prop 1 grant for \$2.5 million to construct the project.



## Elk Grove Watershed Recommended Improvements

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed which enlarged existing pipes and constructed 24-acre-feet of detention storage to reduce flooding. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by flooding if improvements were not completed.

## Multi-Functional Drainage Corridor for Shed C

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is on-going and will be constructed as new development is implemented.

## 9816 Sheldon Road – Enlarge Culverts

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed which enlarged existing pipes and constructed 24-acre-feet of detention storage to reduce flooding. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by flooding if improvements were not completed.

## Sheldon Road Drainage Project

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is constructed and replaced existing culverts with two 2x4 foot box culverts under Sheldon Road and one 2x4 foot box culvert under Bader Road to reduced localized flooding. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by localized flooding if improvements were not completed. (same project as above)

## Sleepy Hollow Detention Basin Retrofit

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is on-going and is part of a Prop 84 Stormwater Grant. This project will help mitigate impacts to the surrounding community on reducing the 10-year and 100-year storm elevations in the detention basin; serve as a pilot/demonstration project for

conversion of conventional detention basins into multi-use/benefit detention basins for holistic watershed protection; increase existing groundwater elevations; improve the habitat of local and migrating wildlife species; and provide a valuable recreational space for public with a jogging/walking trail.

### Sleepy Hollow Lane Drainage Improvements

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted as a future project to install an 18-inch pipe to carry stormwater runoff from low spots in the roadway that flood periodically.

### East Elk Grove Area/ Rural Region Improvements

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted as a future project to accommodate future development and existing deficiencies with detention basins, pipelines, culverts, and open channels.

### Sheldon Road Ditch Improvements and Multi-Use Trails

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted as a future project to construct a multi-use ditch along the roadway which addresses the unique rural characteristics of the area.

### Laguna Creek Watershed Improvements (New Pipeline and Enlarge Existing Pipelines)

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed with new pipeline and enlarged existing pipelines to reduce flooding. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by localized flooding if improvements were not completed.

### Deer Creek Watershed Improvements (New Detention Basins)

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted for the future to accommodate future development with a 5 acre-feet of storage detention.

## SCADA System for the Stormwater Pump Stations

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is on-going. Hard line phones wires were installed at all of the pump stations, except for one pump station that has a wireless connection due to access issues. Auto dialers were installed at the pump stations to trigger an alarm to alert staff for high water levels and malfunctions. These improvements will help manage the pump stations during storm events.

## Dry Well Installation at Kent Street and St. Anthony Court

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed. These areas were subject to frequent flooding. The City received calls on an annual basis from residents impacted by the flooding. The installation of dry wells alleviate reoccurring flooding that occurred by improving the conveyance capacity.

## Elk Crest Drive Pipes

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project was constructed which enlarged existing pipes to reduce street and property flooding. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by localized flooding if improvements were not completed.

## Strawberry Creek Detention Basin Retrofit

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is on-going. A portion of the project has been completed by constructing a dry well in the water quality portion of the detention basin. The dry well is part of a Prop 84 Stormwater Grant to help capture, cleanse and infiltrate stormwater to recharge groundwater supplies to help mitigate for the drought and climate change.

## Laguna Creek and Whitehouse Creek Multi-Functional Corridor Enhancement

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted for the future.

## Whitehouse Creek Watershed Improvements

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is in progress and will accommodate future development with new pipelines, enlarge existing pipelines, and detention basins. The Storm Drainage Master Plan modeling efforts identified this area as being impacted by flooding if improvements were not completed. This project will also provide habitat enhancements.

## Grant Line Channel Improvements (Pump Station and Enlarge Pipes)

**Lead jurisdiction:** City of Elk Grove

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is targeted for the future.

## Alder Creek Watershed Council

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Activities are on-going. The Council provided comprehensive decision making to ensure implementation of the Alder Creek Watershed Management Action Plan with regards to the development of the Folsom Plan Area.

## Redevelopment Area Drainage Improvements

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort is on hold. Through the recession, the redevelopment agency was dissolved. The funding mechanism for redevelopment was lost. Redevelopment will be revived if future funding mechanism becomes available.

## Drainage System Maintenance Tax Assessment

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort is ongoing. A study is being updated and is awaiting City Council action to be placed on a ballot.

## Floodplain Mapping

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The Floodplain Mapping effort is in the final stages of the update. The City is currently working with FEMA to incorporate the update.

### Drain Inlet Retrofit Capital Improvement Plan (CIP)

**Lead jurisdiction:** City of Galt

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** No money has been budgeted nor grants found to implement mitigation.

### Creek/Streams Vegetation Management Plan

**Lead jurisdiction:** City of Galt

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** No money has been budgeted nor grants found to implement mitigation.

### Sunrise Boulevard Widening Kiefer to Jackson

**Lead jurisdiction:** City of Rancho Cordova

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Project is ongoing and is included in this Plan Update.

### Flood Response Equipment

**Lead jurisdiction:** Cosumnes Community Services District Fire Department

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is ongoing and will be carried forward in this Plan Update.

### Flood Response Training

**Lead jurisdiction:** Cosumnes Community Services District Fire Department

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is ongoing and will be carried forward in this Plan Update.

## Coordinate with SAFCA, CA-DWR, USACE, and Sacramento County on Proposed Flood Control projects on Magpie Creek

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In the beginning of 2012, SAFCA purchased four vacant parcels in the Magpie Creek 100-year floodplain with a FEMA grant. The parcels are along Raley Blvd. between Vinci and Santa Ana Ave. The proposed project has not been constructed. It will be years before the Army Corps of Engineers can construct this project.

## Storm Water Management Practices – Implement Storm Water Management Practices as identified in Stormwater Quality Design Manual

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Southgate RPD works collaboratively with the Sacramento County Department of Water Resources (DWR) to plan and design joint-use facilities that will provide both storm water management and recreation use to Southgate RPD residents. These types of projects keep creek drainage corridors in their natural state and provide storm water detention basins with compatible recreational uses such as trails and sports fields. These types of projects help improve the storm water quality and drainage capacity in our neighborhoods while at the same time providing additional recreation opportunities in the community. An example of these joint-use facilities includes the Laguna Creek Parkway open space which has preserved a 130 acre portion of the 100 year flood plain of Laguna Creek while providing a multi-use trail and open space corridor for residents to enjoy. A similar joint-use open space corridor is planned for the Elder and Gerber Creek drainage corridors that traverse Southgate RPD. The Southgate RPD is also in the process of designing two storm water detention projects with the County DWR that will accommodate soccer fields within the basin areas.

Loss Avoidance: TBD

## Main Drainage Canal Bank Stabilization and Sediment Removal

**Lead jurisdiction:** Reclamation District #1000

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project has not been started. The District is looking at the flood safety issues associated with this project and may determine it does not significantly reduce the flood risk. The District may look at other similar projects that provided a more significant reduction in the flood risk.

## Security of District Facilities

**Lead jurisdiction:** Reclamation District #1000



**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District has initiated security risk improvements at some of its critical facility sites. A security fence was installed along a portion of the perimeter fencing system around Pumping Plant No. 1. Since this fence was constructed we have not had a security breach at this location. A contract to construct a security fence around the inner perimeter of Pumping Plant No. 8 has been awarded and the work is being constructed in 2016. Other security measures are in the planning phase.

### South River Pump Station Flood Protection Project

**Lead jurisdiction:** Sacramento Regional County Sanitation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project is ongoing and is being carried forward as a mitigation action in this Plan Update.

### SRCSO Critical Facilities Flood Study (Planning)

**Lead jurisdiction:** Sacramento Regional County Sanitation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** No actions taken on this effort.

### *Levee Failure Mitigation Actions*

### Hydromodification and Stormwater Quality countywide

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The County developed a hydromod basin-sizing calculator (the SAHM Calculator). Status: nothing to report at this time.

### Ring Levees to Protect Delta Historic Villages

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Depends on community interest and funding

### Levee Breach Scenario, Inundation, Evacuation, and Recovery Planning for Rural Areas South of Freeport

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City and County of Sacramento will be

developing an Urban Flood Emergency Action Plan over the next two years, subject to State grant funding. In 2014 it was reported that the County awaits approval of a grant from the State. As of 2015, the grant is approved and contracts are issued. It is anticipated that work will be completed by the end of 2016.

### Improved Flood Inundation and Evacuation Plan for Structural Flood Control System Failure Scenarios in Urban Areas

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City and County of Sacramento will be developing an Urban Flood Emergency Action Plan over the next two years, the State grant funding was approved and the project is underway. As of 2015, the County awaits approval of a grant from the State. As of 2015, the grant is approved and contracts are issued, work is underway for a completion schedule at the end of 2016.

### Human Vertical Evacuation Structures in Areas of Widespread Flood Hazard

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The City and County of Sacramento will be developing an Urban Flood Emergency Action Plan over the next two years. This component will be in discussions during the upcoming LHMP 2017 update.

### Livestock Vertical Evacuation Mounds in Areas of Widespread Flood Hazard

**Lead jurisdiction:** Sacramento County

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Searching for a funding source. This component will be in discussions during the upcoming LHMP 2017 update.

### Implement the Recommended Actions of the Sherman Island Five Year Plan

**Lead jurisdiction:** Reclamation District #341

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** RD 341 has implemented multiple projects mentioned in the 2011 plan. The Projects, along with ongoing annual levee maintenance have reduced the risk of levee failure on Sherman Island.

### Highway 16 Levee Rehabilitation Project

**Lead jurisdiction:** Reclamation District #800

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** RD 800 was unable to secure funding for the HWY 16 Levee Rehabilitation Project.

### Bank and Levee erosion

**Lead jurisdiction:** Reclamation District #1000

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** No work has been initiated on this project other than monitoring the critical sites. Because of the recent drought years with lower than normal river levels, the sites have not significantly eroded any further.

### *Severe Weather: Heavy Rains and Storms Mitigation Actions*

#### Public Education/Outreach Extreme Weather

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

#### Heating and Cooling Centers for Extreme Weather

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

#### District Wide Roofing Renovations

**Lead jurisdiction:** Los Rios Community College District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Project has been ongoing with the majority of the project completed using District funds. Please keep on the list.

#### Tree Management

**Lead jurisdiction:** Southgate Park & Recreation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In 2012 the Southgate RPD received a grant from the Urban Forestry Program Entitled, “An Urban Forest for Every City”. This Program Grant funded the development and implementation of a management plan for our urban forest which determined reasonable

maintenance goals and set a standard maintenance cycle to help the District proactively manage our forest in a way that reflects the values of our community within a set budget. The grant was used to conduct a tree inventory as the first step in better understanding the needs and distribution of its trees and the value of its forest asset. A consulting arborist and certified tree risk assessor provided an inventory of all the trees in the parks, parkways, open space and landscape corridors in the Southgate RPD. The inventory noted the location, species, size, health, and potential for infrastructure conflicts and hazards for each tree on Southgate RPD owned property as well as noting empty planting locations. High risk trees were identified and most have been removed. Southgate RPD is still in the process of developing an Urban Forest Management Plan that aims to identify actions that will support a healthy and regenerative urban forest.

Loss Avoidance: TBD

### *Wildfire Mitigation Actions*

#### **Fuels Reduction in the American River Parkway**

**Lead jurisdiction:** City of Sacramento/Sacramento Metropolitan Fire District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** A CWPP for the American River Parkway was completed in June of 2014.

#### **Previous to 2014 on the American River Parkway**

1. The Invasive Plant Management Plan (IPMP) was initiated in the early 2000's and has since effectively minimized all populations of the highly flammable giant reed, Spanish broom, pampas grass over the entire American River Parkway, and (in pilot project areas) yellow star thistle. This project is being maintained on an annual basis to control these flammable weed species.
2. Sacramento Regional Conservation Corps removed ladder fuels in the wildland urban interface, defined as within 100 feet of private property lines, on the American River Parkway. (These areas were revisited for maintenance in 2014, as listed below).

#### **American River Parkway 2014**

1. Public and maintenance roadways were limbed up to allow adequate emergency vehicle clearance in the River Bend and Sunrise Areas. Maintaining roadway clearance through tree limbing should occur every 4-6 years.
2. Fire fuel reduction within 100 feet of private property lines (including limbing up trees, removing vines, and removing dead wood) was maintained at Fair Oaks Bluff, Lower Sunrise, Sailor Bar and Rossmoor Bar. This was a maintenance effort for a portion of a larger area that was initially treated in 2010. Maintaining fire fuel reduction areas along private property lines should occur every 4-6 years.

3. A firebreak system was initiated along existing maintenance roads in the Woodlake and Cal Expo areas, by mowing 10 feet on either side of existing roads (to create a 30 foot wide firebreak.) These mowed firebreaks should continue to be maintained on an annual basis.
4. The Woodlake and Cal Expo fire road system was mapped and labeled with signs for City of Sacramento Fire Department. Signage should be maintained as needed.
5. Fire breaks were disked at Rossmoor Bar and Lower Sunrise as part our routine annual maintenance routine. These fire breaks should continue to be maintained on an annual basis.
6. County ordinance passed limiting places where barbeques and smoking are permitted in American River Parkway.
7. Maintenance roadways at Sailor Bar and Sacramento Bar were limbed up to allow adequate emergency vehicle access.
8. All park fire hydrants mapped, categorized, tested, and painted for high visibility.
9. Access gates to fire roads painted for high visibility.
10. Brush removed from private property fence line at Lower Sunrise and Sailor Bar.
11. Sacramento City Fire conducted training burns in the open fields in the Woodlake and Cal Expo Area of the American River Parkway. Firefighters were trained in wildland fire suppression techniques, which benefited the Parkway by also reducing the flashy fuel loads in these open fields.
12. New firebreak systems are regularly maintained.
13. Passed County ordinances which limit locations of barbeques and combustibles.
14. Goats and sheep brought into the downstream reach (Cal Expo to Discovery), to reduce ladder fuels in forested areas.

### **Other Regional Park areas**

#### **Dry Creek Parkway:**

- 1) Maintenance roadways were limbed up to allow emergency vehicle access. This was a first time treatment for these firebreaks and will continue to be maintained.
- 2) A prescribed burn was conducted in the open fields on either side of Q Street, as part of an annual maintenance routine. Fuels reduction in these fields, through burning or through an alternative measure should continue each year.
- 3) Mowed fire breaks were maintained along paved bike trail, as part of an annual maintenance routine. These fire breaks should continue to be maintained on an annual basis.

4) In fire break areas, trees were limbed up to allow mowing under trees and to reduce risk of ground to crown fires. This was a first time treatment for these firebreaks. Maintaining the firebreaks through tree limbing should occur every 4-6 year.

#### **Mather Park:**

1) Firebreaks behind homes and along roadways were mowed as part of our annual maintenance routine. These fire breaks should continue to be maintained on an annual basis

#### **Indian Stone Corral:**

1) In 2014: KD Goat Ranch brought 250 goats for 48 days to reduce flashy fuel cover. Goats grazed from late June to early August. Staff is very pleased that the treatment achieved the desired results, with minimal damage to the oak trees. Fuels reduction, through grazing or, through an alternative measure, should continue every one to three years.

2) Goats returned in early summer 2015.

#### **Rollingwood Open Space:**

1) In 2011, and in 2014: Fire fuel reduction within 100 feet of private property lines (including limbing up trees, removing vines, and removing dead wood) was maintained along the western section of the Rollingwood Open Space. This was a maintenance effort on a portion of a larger area that was initially treated in 2010. Maintaining these fire fuel reduction areas should occur every 4-6 years.

### **Coordinate with the County and State to Create defensible space to protect vital infrastructure located in the American River Parkway from wildfires (from 2005 Plan)**

**Lead jurisdiction:** City of Sacramento

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Ongoing. The City of Sacramento Fire Department and City Emergency Services are working with the Sacramento County Parks Department who oversees the American River Parkway. The County Parks Department is currently controlling vegetation growth surrounding Sacramento Municipal Utility District (SMUD), Pacific Gas & Electric (PG&E) and WAPA transmission lines that traverse the parkway.

### **Fuel Reduction and Modification**

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.



## Wildfire Prevention Outreach

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

## Wildfire Hazard Identification

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

## Arson Prevention & Control Outreach

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

## Ignition Resistant Building Construction Upgrades

**Lead jurisdiction:** City of Folsom

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This effort has been implemented and is ongoing. The program continues to reduce risk and provides for loss avoidance.

## Reduction of Fire Hazard SRCSD Bufferlands

**Lead jurisdiction:** Sacramento Regional County Sanitation District

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Annually by the end May, Regional San uses a combination of mowing and disking to establish firebreaks on the Bufferlands as a fire control measure. The firebreak widths vary from 30-60 feet depending on the habitat types and fire risks.

## *Twin Rivers School District Mitigation Actions*

### Reduce Risk to Flooding of Northern Area Schools

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This project has not been started and is not being carried forward.

New drainage plans to sites within the flood areas including, site drainage, storm drain upgrades and re-grading fields to shed water (on-site) away from buildings.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District intends to begin work with civil engineers to begin design and planning to engage in this work in the 2017/18 school year. The current District is a culmination of five smaller districts that incorporated in 2008, therefore, paper records are difficult to trace, but there is evidence of damage in the surrounding communities that prove difficulties during heavy storms and rains.

Work with City/County/Water departments to create defensible spaces at sites where nearby creeks are prone to flooding. Build-up earthen berms (off-site) to shed water away from critically located schools.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Although this cooperative effort has not begun, the District's intent is to reach out to other agencies this year, 2016/17. The District will need to begin searching for funding for this work. The current District is a culmination of five smaller districts that incorporated in 2008, therefore paper records are difficult to trace. However, there is evidence of damage in the surrounding communities that prove difficulties during heavy storms and rains.

Update the Emergency Preparedness Plan and the Emergency Operations Plan so that in event of emergency or disastrous event, personnel and procedures are in place and streamlined. This will include purchase of new equipment not reliant on typical system power; including communications equipment, emergency housing and supplies.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The EPP and EOP have been updated and procedures are being developed. The Risk Manager will be purchasing new equipment upon receipt of specific funding. A portion of the plan; communications within school sites, is being upgrading during this 2016/17 school year. This plan is critical to the safety of the District.

Working with the Department of the State Architect (DSA) on Earthquake Retrofit Plan on all sites.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District intends to contact DSA for this in the

2016/17 school year, after current projects start. It is anticipated that funding may become available to proceed with improvements.

### Revise and update district-wide Storm Water Prevention Plan

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** In progress. Each project has to have an independent SWPP, but the District is developing standards for all new construction

### Create email notification system for families for emergency situations.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District has an Emergency Notification System for emergencies, which is continuously updated. As funding allows, the District will update the system to better serve the school sites and community.

### Incorporate new rules for M&O department to keep drains clear, trees trimmed and vegetation removed to minimize impact during heavy rains.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The M&O department has initiated this work as part of the Preventative Maintenance Plan and has begun the work for the 2016 season. As funding allows, the District will continue this as part of the bi-yearly preventative plan.

### Create defensible perimeter space – for fire areas. Trees trimmed and vegetation removed to minimize impact during fire season.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The M&O department has initiated this work as part of the Preventative Maintenance Plan and has begun the work for the 2016 season. As funding allows, the District will continue this as part of the bi-yearly preventative plan.

### Updating Evacuation Plans.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** Evacuation plans have been updated at all of the sites.

### Updating District Policy for new Construction.

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** New standards for construction for were completed however, as no new construction was considered for this year or next, specific policy for flood areas was not completed. The District intends to add raised foundations, installation of earthen berms and critical drainage/water retention in those areas that are susceptible. The current District is a culmination of five

smaller districts that incorporated in 2008, therefore paper records are difficult to trace. However, there is evidence of damage in the surrounding communities that prove difficulties during heavy storms and rains.

### Updating Evacuation Plans for Excessive Heat

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District has upgraded Heating, Ventilation, and Air Conditioning (HVAC) systems in three sites and continues to do so as funds become available. This District has also included HVAC systems continuous service and eventual replacement in the Preventative Maintenance Plan. While there are still sites pending new systems, the upgrades will continue as funding allows.

### Updating Evacuation Plans for Streambank Erosion

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** This item is being worked on with the guidance of civil engineers and geotechnical professionals. The District intends to have this completed this year; 2016/17, if funding becomes available.

### Updating Evacuation Plans for Fog

**Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?):** The District has begun installing parking lot lighting in new parking lots that will help as guidance in instances of dense fog. While dense fog has been less of a problem in the past year, the District still intends to implement an “Alert Line” on the District Website (similar to Kern) that will notify families of dense fog advisories. We cannot provide evidence of loss avoidance as there are no records of previous incidents.