Chapter 2 What's New

Requirements §201.6(d)(3) and §201.7(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 2016 Sacramento County Local Hazard Mitigation Plan (LHMP) contained descriptions of their planning processes, the risk assessments of identified hazards for the Sacramento County Planning Area and mitigation strategies for reducing the risk and vulnerability from these hazards. Since approval of this plan by FEMA, progress has been made by the County, the seven incorporated communities, and 20 special Districts on implementation of the 2016 mitigation strategies. As part of this LHMP Update, a thorough review and update of the 2016 County LHMP was conducted to ensure that this Update reflects current community conditions and priorities in order to realign the updated mitigation strategy for the next five-year planning period. This section of this LHMP Update includes the following:

- **What's New in the Plan Update**. Section 2.1 provides an overview of the approach to updating the Plan and identifies new analyses, data and information included in this LHMP 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 LHMP Update.
- **Summary of Significant Changes to Current Conditions and Hazard Mitigation Program Priorities**. Section 2.2 provides a summary of significant changes in current conditions, changes in vulnerability, and any resulting modifications to the community's mitigation program priorities.
- **2016 Mitigation Strategy Status and Successes**. Section 2.3.2 provides a description of the status of mitigation actions from the 2016 LHMP and also indicates whether a project is no longer relevant or is recommended for inclusion in the updated 2021 mitigation strategy. This section also highlights key mitigation success stories of the County and other participating jurisdictions since the 2016 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 LHMP Update further provides documentation of the Sacramento County communities' 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 2016 Plan and includes an assessment of the success of the participating communities in evaluating, monitoring, and implementing the mitigation strategy outlined in the 2016 LHMP. Only the information and data still valid from the 2016 LHMP was carried forward as applicable into this 2021 LHMP Update.

Also to be noted, Chapter 7 Implementation and Maintenance of this LHMP 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 LHMP 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 LHMP 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 LHMP Update. This new data and associated analysis provided valuable input for the development of the updated mitigation strategy presented in Chapter 5 of this LHMP Update.

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

- Most hazards from the 2016 Plan were profiled in this LHMP Update. River/Stream/Creek Bank Erosion was moved into and dealt with in the flood, dam failure, and levee failure hazards. New hazards include pandemic. Hazards dropped from consideration include ag hazards (though the effects of hazards on the ag industry are discussed in each hazard vulnerability section) and fog.
- A refined critical facility definition was created. The County created a new list of critical facilities that were spatially quantified in GIS, and then overlayed on each mapped hazard.
- Future development data was updated and collected from the County and each City. This was spatially quantified in GIS, and then overlayed on each mapped hazard.
- Disaster declarations were updated, including federal, state, and USDA disaster declarations.
- The NCDC Storm Events and FEMA/Cal OES disaster declaration tables were updated.
- A new section on Power Shortage/Failure was added. Public Safety Power Shutoff events were also added.
- Cal-Adapt and updated Sacramento County Climate Action Plan data was added to the climate change section, as well as to other hazards that are exacerbated by climate change.
- 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 and updated inundation mapping. Values at risk to dam inundation was analyzed. Critical facilities and populations at risk to dams were tabulated.
- An updated GIS analysis was performed for earthquake, including a Hazus earthquake run to show risk and provide potential loss estimates to the County from earthquake.
- An updated GIS analysis using the 2018 DFIRMs was performed for the flooding hazard for the 1%/0.2% annual chance floods, including values at risk, critical facilities at risk, population at risk, future development, and general community impacts.

- An updated GIS analysis was performed for landslides, including values at risk, critical facilities at risk, population at risk, future development, and general community impacts.
- More detailed GIS analysis was performed for the wildfire hazard, including values at risk, critical facilities at risk, population at risk, historic, cultural, and natural locations at risk, and general community impacts.
- An entire rework of the risk assessment for each identified hazard to reflect new information and to reflect the updated FEMA plan review tool. This included reworking the hazard profile and adding sections on location, extent, and new hazard event occurrences; redoing the entire vulnerability analysis to add additional items 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 to develop loss estimates.
- To better meet the revised FEMA plan review tool, a more extensive analysis of the extents to identified hazards was conducted and included in this LHMP Update.
- Utilizing updated critical facility GIS mapping for the Planning Area, an analysis was conducted to provide an updated inventory of critical facilities and those that fall within mapped hazard areas.
- An enhanced vulnerability assessment was conducted, which added a GIS analysis of updated future development areas in the Planning Area and specific to each of the mapped hazards.
- A greater study of County mitigation capabilities was added.
- Incorporation and analysis of the updated California Department of Finance population data was utilized for this LHMP Update.
- Environmental justice concerns were addressed in portions of this Plan Update.
- Also, as required by current FEMA planning guidance, an analysis of ongoing and continued compliance with the NFIP was included in this LHMP Update.

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

This section provides a summary by hazard of significant changes in current conditions, planning area vulnerability, and any resulting modifications to the community's mitigation program priorities since the 2016 LHMP:

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Climate Change			X

- NWS data indicates temperatures are increasing resulting in more extreme heat days. 2020 and 2021 temperatures have been some of the hottest.
- Weather extremes, including precipitation have become much more variable – the Planning Area is seeing increased precipitation and intensity as well as abnormally dry, drought conditions.
- Atmospheric rivers that stream through the I-80 corridor give rise to highly concentrated flood events that overwhelm the stormwater system, especially when these occur during high tide conditions and high winds causing wave impacts and overwhelming system pumps and roads.

- Climate change conditions exacerbate and increase vulnerability in multiple hazard areas. Other impacts include impacts to food sources and food-related diseases, eco-system changes, public health issues, etc.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Dam Failure	X		

- Folsom Dam spillway improvement project, recently completed, allows releases at a lower flood stage for enhanced flood control. Additional dam improvements, that will raise the dam 3 feet, will continue to make the likelihood of a dam failure less likely. These projects decrease 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 generally due to an increased risk of dam failure.
- Non-jurisdictional dams can 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 County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Drought and Water Shortage			X

- Since the 2016 planning process, current drought conditions, including water supply issues, continue to have 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.
- State drought mandates, including conservation measures, to protect water supply throughout California have been implemented and continue within the Planning Area.
- Similar to more forested areas of California, drought has contributed to an increase in vulnerability of the County due to increase tree mortality issues and general increase in wildfire conditions.
- Water quality concerns are exacerbated in drought conditions with less flows in streams, combined with drawing down the water table. Saltwater intrusion is a concern. Economic impacts associated with new NPDES permits.
- Drought conditions have increased 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.
- Over the last few years, the drought has had a 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.
- Recent drought conditions stress crops making them more susceptible to insect infestation and other weather related impacts.
- Reduced water supply results 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

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Earthquake and Earthquake Liquefaction		X	

- The primary factor that might change the earthquake vulnerability, is additional development and significantly more people moving to the area.
- However, adherence to current California building codes should ensure sound development in new development areas.
- There remains the potential for effects from earthquakes in the adjacent and nearby counties. However, historically, direct impacts to Sacramento County have been limited.

- A primary vulnerability of earthquake is to the Delta area, levees, and potential impacts to water supply.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Floods: 1%/0.2% annual chance		X	

- Overall the net increase or decrease in vulnerability to flood depends on the location within the Planning Area.
- Ongoing implementation of regional flood control projects and effective land use planning and requirements for development in identified floodplains have minimized additional exposure to this hazard in the County.
- The SB5/200-year requirements for urbanizing areas are reducing vulnerability.
- More intense precipitation events, including periodic atmospheric river conditions, continue to lead to flooding within the County. This was evident in winter storm events occurring in 2017 and 2019.
- With the flood hazard remaining one of the biggest hazards of concern to Sacramento County, flood mitigation projects, including flood insurance promotion and continued participation in the NFIP's CRS program, remains a priority.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Floods: Localized Flooding			X

- Climate change issues may result in more localized flooding as the climate warms and the wetter storms create more runoff.
- 2017-2019 winter storms, including greater intensity rains, resulted in more localized flooding throughout the Planning Area.
- Outdated and aging drainage infrastructure also contributes to a greater vulnerability to localized stormwater flooding.
- Recent drought conditions in some areas have hardened soils and predisposed areas to worse flooding.

- Sacramento County and incorporated communities continue to track and map localized flooding areas. These efforts, c2ombined with the development of new hydrology standards will help reduce the vulnerability of this hazard in the future.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Landslide, Mudslide, and Debris Flows		X	

- With several years of drought conditions, 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, Sacramento County has very little exposure to this hazard due to the relative flat topography and with most landslide potential areas located in areas with little development.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Levee Failure		X	

- Similar to other hazards, increased development in areas protected by levees could result in an increase in vulnerability.
- Levee improvement projects, completed and in process, that will certify levees to 100- and 200-year levels of protection provide enhanced protection for the Planning Area. Once complete, these projects should decrease the vulnerability of the Sacramento County planning area to levee failure

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Pandemic		X	

- Pandemic is a new hazard to the 2021 LHMP Update

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Temperatures - Heat			X

- There has been an increase in severe heat days in recent years. 2020 and 2021 have been some of the hottest on record.
- Climate change issues will continue to increase heat related impacts.
- Vulnerable populations are at greatest risk to this hazard.
- The heat, combined with drought conditions, has increased the potential for wildfires.
- Depending on the crops, heat can adversely impact the agricultural industry.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Temperatures- Cold and Freeze	X		

- With the Planning Area experiencing more mild winters in recent years, there has been a decrease in vulnerability of Sacramento County to freeze and severe winter storms.
- Although freeze events when they do occur continue to impact area crops and vulnerable populations
- Depending on the crops, cold and freeze events can adversely impact the agricultural industry.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Heavy Rains and Storms			X

- Similar to other weather hazards, the overall vulnerability of the Planning Area changes from year to year depending on the season. The rains of 2017, 2019 were significant, causing flooding and other adverse impacts to the County.
- Climate change brings renewed concern moving forward for heavy and more intense rains, storms and associated issues to the County.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: High Winds and Tornadoes			X

- High winds continue to be an issue in Sacramento County with a slight increase in overall vulnerability based on several issues.
- Primary concerns include wave action in the Delta and along stream banks contributing to erosion and high winds contributing to an increase in the wildfire potential.
- Also now a concern is the high winds leading to power outages and the potential for PSPS events creating other impacts to the Planning Area.

2021 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Subsidence		X	

- Drought conditions have contributed to increased subsidence statewide due to the drawdown of the water table.
- In Sacramento County, subsidence had been mostly a concern in the Delta area where subsidence issues have actually decreased with the implementation of better farming practices over the years.

2021 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.

2021 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.
- Wind has been a major contributor to the potential for a catastrophic wildfire. And when combined with extreme heat, also can trigger a PSPS which leaves the community at risk in other ways.
- With large wildfires occurring throughout California, Sacramento County has seen a significant change in air quality from smoke resulting in more recorded bad air days.
- Catastrophic wildfires in northern California counties have created other issues in the County, as evacuees flee the fires and look to nearby communities for temporary housing.

2.3 2016 LHMP Mitigation Strategy Successes and Status

Sacramento County and participating jurisdictions have been successful in implementing actions identified in the 2016 Sacramento County LHMP Mitigation Strategies, thus, working diligently towards meeting their 2016 goals and objectives of:

GOAL 1: Minimize risk and vulnerability of the Sacramento County community to the impacts of natural hazards and protect lives and reduce damages and losses to property, public health, economy, and the environment.

Objectives:

- Protect, preserve, and promote public health and safety, livability, and the environment
- Assure long term protection and resiliency of existing and future development (including infill areas) from natural hazards
- Protect critical facilities from natural hazards and minimize interruption of essential infrastructure, utilities, and services
- Protect natural resources; Protect and enhance water quality and supply, critical aquatic resources and habitat for beneficial uses.

- Maintain/enhance the flood mitigation program to provide 100/200/500-year flood protection
- Minimize risk of levee breach, overtopping or other failures
- Mitigate Repetitive Loss Properties
- Continued enhancement of CRS programs
- Address localized drainage issues
- Reduce the potential of wildfire in Sacramento County and protect the community
- from adverse effects of wildfire, including secondary impacts such as air quality
- Protect vulnerable populations from the threat of natural hazards
- Address climate change influence in project design and development
- Promote hazard mitigation as an integrated public policy and as a standard business practice

GOAL 2: Improve public outreach, awareness, education, and preparedness for all hazards to minimize hazard related losses

Objectives:

- Increase outreach, communication and awareness of natural hazards and reduce exposure to all hazard related losses, including climate change
- Improve the communities' understanding of natural hazards and how to effectively be prepared and take action to mitigate the impacts of hazard events
- Develop and target outreach and education for each hazard type and risk area
- Increase access to natural hazard information via enhanced web and mobile applications before, during, and after a disaster
- Enhance public outreach programs to target all vulnerable populations, including multi-language communications and multi-mode delivery
- Continued promotion of flood insurance

GOAL 3: Improve the capabilities of the community to mitigate losses and to be prepared for, respond to, and recover from a disaster event

Objectives:

- Promote interagency coordination of mitigation planning and implementation efforts
- Minimize hazard-related damage in order to maintain current service levels
- Continued enhancements to emergency services capabilities, integrating new technologies to reduce losses and save lives
- Promote intergovernmental and interagency coordination, planning, training, exercising and communication to ensure effective community preparedness, response, and recover
- Increase the use of coordinated, shared resources between agencies
- Promote public/private partnerships in hazard mitigation and preparedness programs
- Identify, coordinate, and implement countywide evacuation and shelter in place planning for all populations and increase community awareness of these activities

GOAL 4: Assure conformance to Federal and State Hazard Mitigation Initiatives and Maximize Potential for Mitigation Implementation

Objectives:

- Maintain FEMA Eligibility/Position Jurisdictions for Grant Funding

- Maintain good standing with FEMA and State hazard mitigation programs, regulations and requirements
- Develop an overall mitigation funding strategy to prioritize and pursue mitigation projects in an equitable manner to benefit all populations
- Maximize funding opportunities through identification and tracking of all types of Federal and state grant programs to implement identified mitigation projects

Where possible, Sacramento County and participating jurisdictions used existing plans and programs to implement the 2016 mitigation strategies.

2.3.1. Success Stories

Sacramento County

Sacramento County's Floodplain Management Section provides homeowners with opportunity to mitigate flood risk with help from FEMA grant funding. In 1996, Sacramento County's Floodplain Management Section outreached to homeowners suggesting they consider mitigating their flood risk. While outreach is an annual project, and mitigation is included in the annual brochure sent to all properties in the flood hazard areas, it is only in recent years that numerous homeowners have shown interest. This is likely due to concerns about climate change, concerns about levee maintenance and accreditation, and the rising cost of National Flood Insurance Program annual premiums. Over the years, outreach has been ramped up and more homeowners have been added to grant applications. The County's most recent home elevation project grant application included 35 homes utilizing FEMA's Hazard Mitigation Grant Program (HMGP) funds. The following provides highlights of some of the more notable flood mitigation projects.

Raising Houses

When an existing house is raised so that the floor is safely above the flood hazard elevation on a firm foundation and flood resistant support, the damage associated with flooding is greatly reduced. The lower level may be used for parking vehicles and for incidental storage. The residents should understand the County's flood warning systems and be prepared to relocate the vehicles and incidentals.

This home in Wilton, CA flooded in 1997, it was elevated, by HMGP 1155, in 1999. The mitigation project protected the home from possible flood damage in 2017.

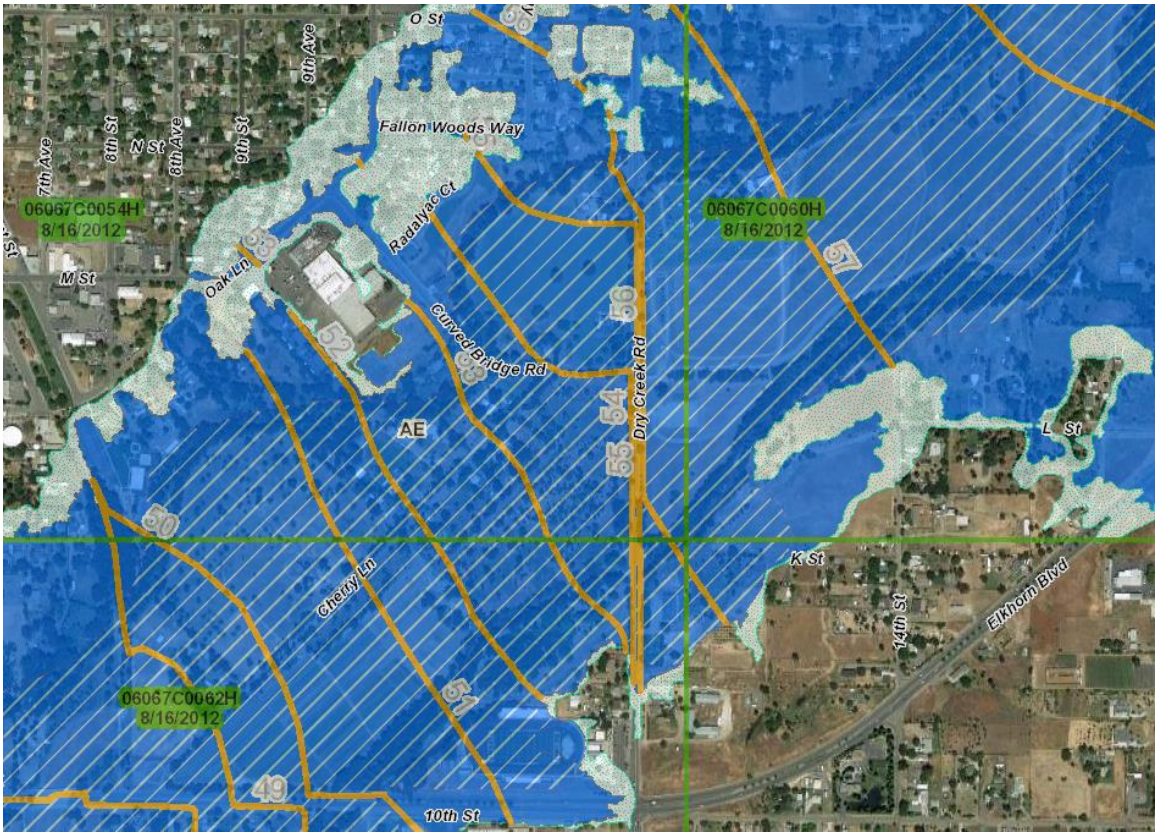
Figure 2-1 Sacramento County Home Elevation Project

Photo by: Sacramento County Floodplain Management Section

In the Dry Creek area of Rio Linda, the County has taken a two pronged approach. Where the flood hazard is deemed dangerous, properties have been acquired by a combination of FEMA, state and local funding. The land is owned by the County's Park Department and held as open space. Properties in shallow flood hazard areas may be elevated to reduce flood risk.

Dry Creek, in north Sacramento County is generally calm, but when it isn't it can be a monster flowing at 14,000 cubic feet per second.

Figure 2-2 Dry Creek during Flooding

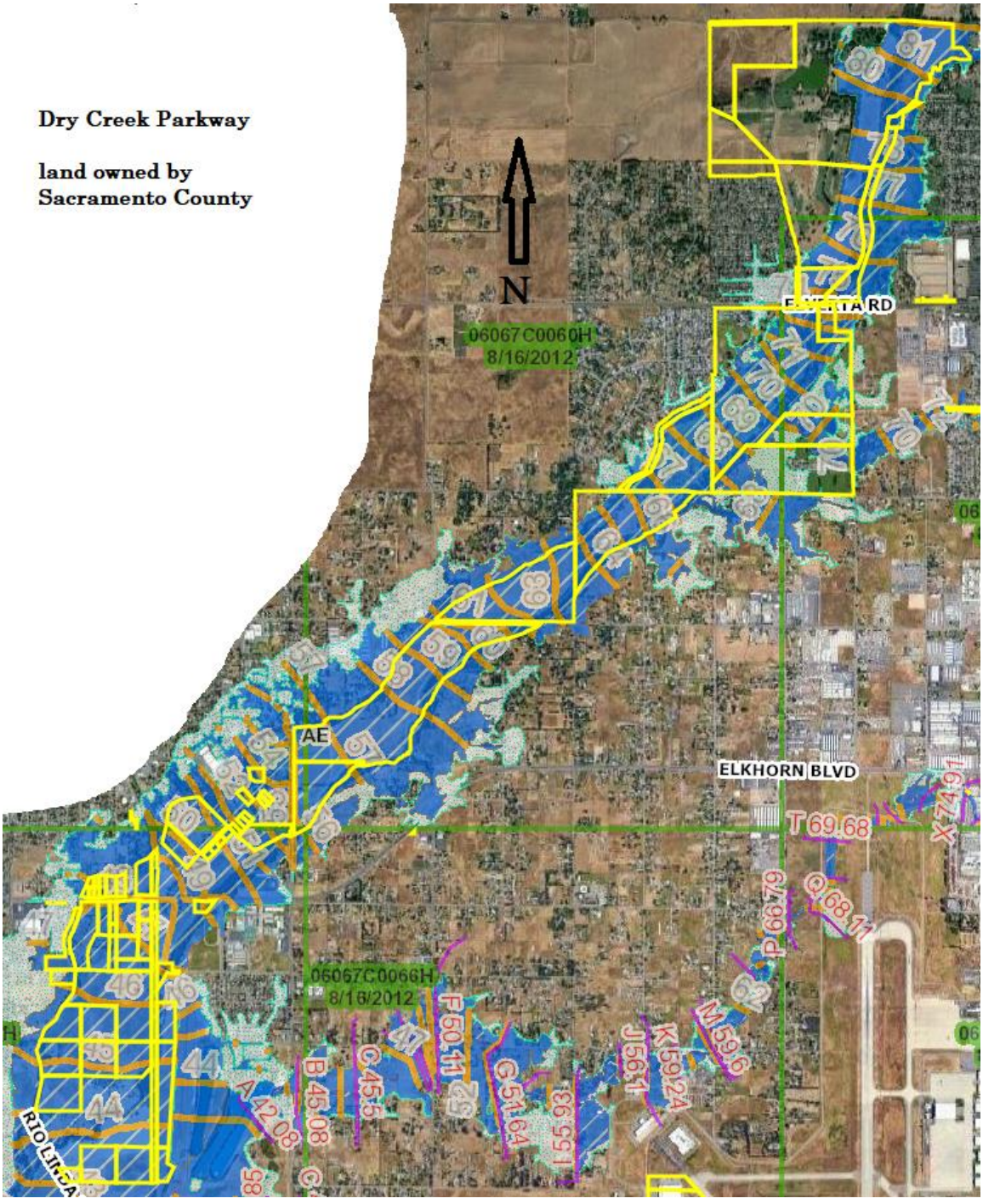


Clipped from County GIS, above, showing the width of the Dry Creek floodplain

Home acquisition and demolition program in the floodway.

Twelve pre-FIRM homes in the Dry Creek floodway suffered damage as many as five times : 1982, 1986, 1995, 1997, and 1998. Using HMGP 1155, in 1989-99, repetitive loss houses in the Dry Creek floodway were acquired and demolished. The land is owned by Sacramento County Parks Department.

Figure 2-3 Dry Creek Parkway



Map source: Sacramento County GIS with Google Map

Looking at the sum of the repetitive loss claims prior to mitigation, and inflating to 2018 dollars (using 5% inflator) the damage sum ranged from $68,000 to $239,000 per house. Significant storm events have occurred after these homes were acquired, including 12/31/2005, 12/2/2012 and January 2017; thus, significant losses were avoided. For houses outside of the proposed Dry Creek Parkway, the County of Sacramento encourages elevation to reduce the risk of flood damage.

Figure 2-4 House in Rio Linda, CA Elevated under HMGP FEMA-DR-1155-CA

Source: Sacramento County DWR

NFIP covered damage was $27,000, inflate to 2018 dollars it would be $83,000 (5% / yr). Damages were avoided in significant storm events on December 31, 2005 and December 2, 2012 and January 2017. Currently, the County of Sacramento with funding from FEMA Hazard Mitigation Grant Program and the County's Stormwater Utility has begun encouraging homeowners to raise houses in the fringe of the floodplain area (HMGP4240, approved in 2019), such as the pictures below.

Figure 2-5

Source: Sacramento County DWR

The **Beach Stone Lakes** area, east of the Sacramento River and west of the City of Elk Grove is a large floodplain area with agricultural properties. The flooding is caused by a combination of the Cosumnes River, Morrison Creek and backwater above the north Delta. To compound this concern, the Sacramento River east levee is not certified. The community flooded in 1986, 1997, and twice in 2017.

Figure 2-6 Beach Stone Lakes Flooding

Source: Sacramento County DWR

The County of Sacramento with local and FEMA grant funds is inviting homeowners to mitigate the flood hazard.

Figure 2-7 House Lifted in May 2021

Source: Sacramento County DWR

The **Sacramento River Delta** is a treasure rich in history, agriculture, and outdoor recreation. The future of the Delta is bright but for the flood hazard. The County of Sacramento encourages home elevation with help from FEMA grant programs. The one shown below was raised in 2020.

Figure 2-8 House being Raised

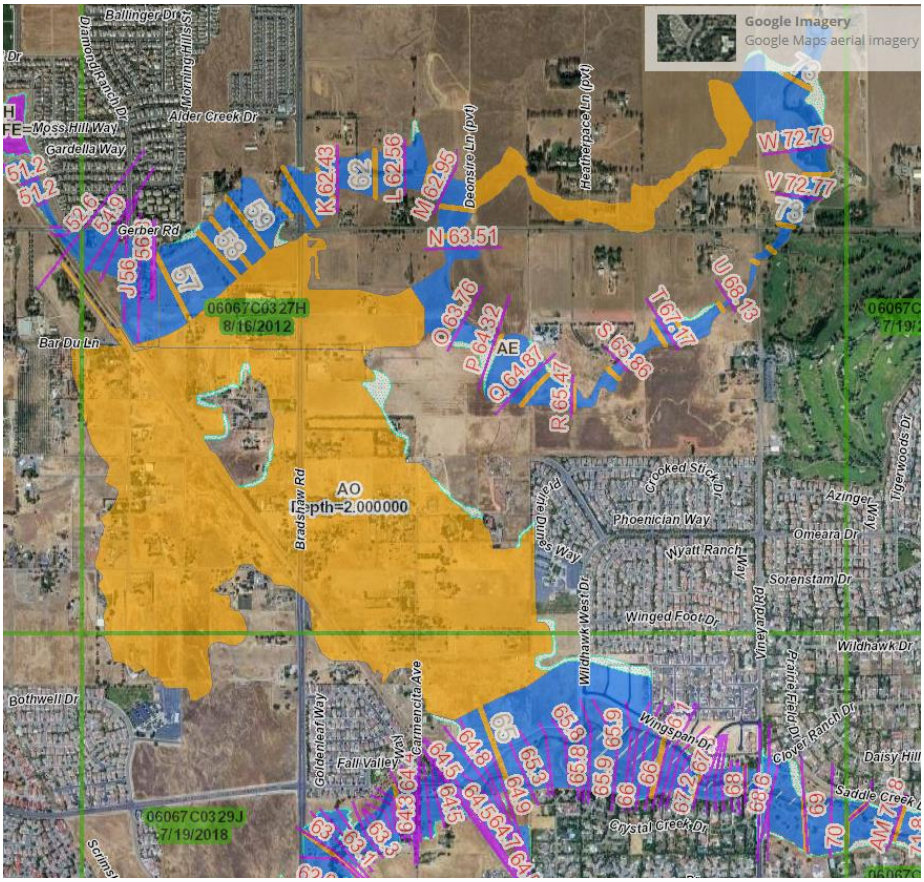
Source: Sacramento County DWR

The projects above are known as non-structural mitigation measures because they do not seek to control the floodwater but to live with it while protecting the house. An example of a structural flood control project is the Southgate Soccer Field Basin Project on Laguna Creek.

Constructing Detention Basins

In partnership with Southgate Recreation and Park District, the County of Sacramento entered into a contract for construction (summer 2021) of a side channel detention basin to control inter-basin flooding that occurs between Laguna Creek (at the bottom of the figure) to the north to Gerber Creek.

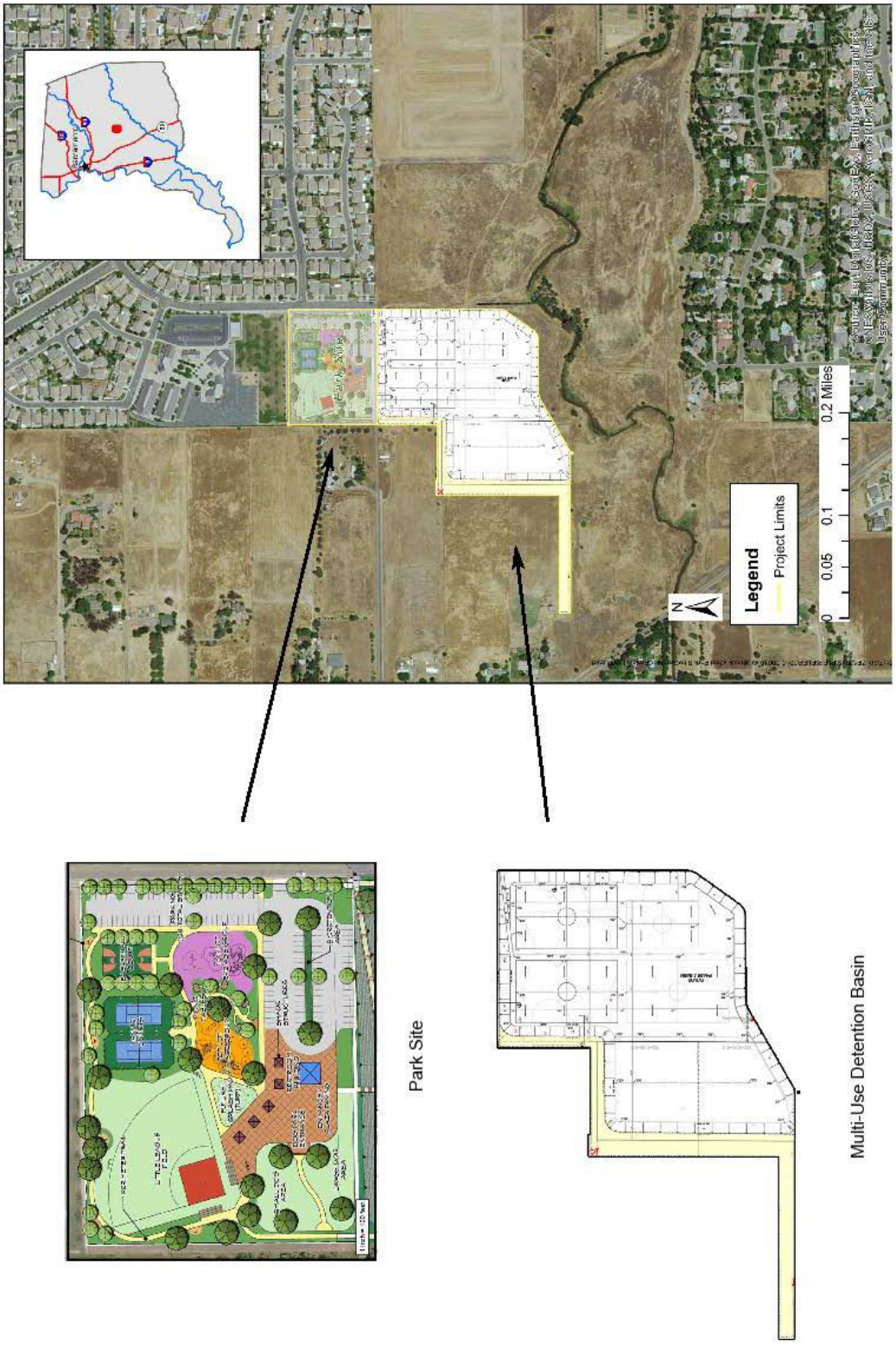
Figure 2-9 Detention Basins



Source: Sacramento County DWR

This project will be an active use park but will be subject to flooding approximately 3 times every 30 years. This will help control the inter-basin Zone AO sheet flow floodplain shown above in orange. The project plan is shown below. The parking and active use sports will be on high ground while the soccer will be played in the flood control basin area.

Figure 2-10 Active Use Park Plans



2.3.2. 2016 Mitigation Strategy Update

The 2016 Sacramento County LHMP mitigation strategy contained 241 separate mitigation actions for the County and participating jurisdictions. Of the 241 actions, 27 have been completed, 4 are complete and ongoing, 171 are ongoing, and 42 have not been started. 159 2016 Sacramento County actions have been identified for inclusion in this LHMP Update, and are carried forward in Chapter 5 in Table 5-4. Table 2-1 provides a status summary of the mitigation action projects from the 2016 Sacramento County LHMP. Following the table is a description of the status of each project.

Table 2-1 Sacramento County's 2016 LHMP Update: Mitigation Action Status Summary

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Sacramento County				
Multi-Hazard Actions				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	X	X		Y
Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness		X		Y
Increase pedestrian and bicycle evacuation routes by constructing regional bike/pedestrian trail infrastructure, and expanding connection to neighborhoods (particularly in vulnerable areas)		X		Y
Community Rating System (CRS) Program for Public Information (PPI)		X		Y
Flood Insurance Assessment, Awareness, and Promotion		X		Y
Public Outreach Mailers		X		N
Toxic Substance Release		X		N
Climate Change Actions				
Increase average fuel efficiency and reduce GHG emissions from the County Fleet and Fuels		X		Y
Reduce Sacramento County's vulnerability to Climate Change by reducing GHG emissions in the commercial and residential sectors by making energy efficiency a priority through building code improvements		X		Y
Mitigate Climate Change impacts by integrating climate change research and adaptation planning into County operations and services		X		Y
Reduce Sacramento County's vulnerability to extreme heat events and associated hazards by Increase tree planting/canopy preservation/enhancement		X		Y
Drought Actions				
Implement Water Supply CIP		X		N
Flood, Levee Failure, and Localized Flood Actions				
Keep the PPI current		X		Y
Alder Creek flood control		X		Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Alder Creek flood mitigation (dam)		X		Y
Alder Creek miners reservoir, property owned by the City of Folsom		X		Y
Delta Small Communities flood protection - structural and nonstructural mitigation		X		Y
Gum Ranch flood control - joint use basin		X		N
Implement Storm Drain CIP		X		N
Laguna Creek at Triangle Aggregate flood control -joint use basins		X		Y
Laguna Creek mitigate flood hazard south of Jackson Highway		X		N
Model Sacramento River levee breach (LAMP) south of Freeport		X		N
Morrison Creek Miners Reach Flood Insurance Study		X		N
Morrison Creek Miners Reach levee improvements		X		N
Outreach stormwatch guide (ALERT, Stormready, weather radio)		X		N
Peak flow floodplain mitigation Arcade Creek near Auburn Blvd		X		N
Risk Map (flood frequency, depth, velocity)			X	Y
Elevation & Acquisition Projects (to Mitigate Flood Risk)		X		Y
Repetitive Loss Properties (to Mitigate Flood Risk)		X		Y
Five-Year Capital Improvement Plan – Drainage Projects		X		N
Arcade Creek Corridor Plan		X		N
Elevate Homes on Long Island (Grand Island Road, Sacramento River)	X			Y
Repetitive Loss Church Building on Dry Creek		X		N
South Branch Arcade Creek – Gum Ranch Basin (with Fair Oaks Park District) and Kenneth Avenue Bridge Improvements (with Sacramento County Department of Transportation)		X		Y
Dry Creek Flood Hazard Mitigation Acquisitions with County Regional Park Department			X	N
Arcade Creek at Evergreen Estates Floodwall Improvements		X		N
Linda Creek Peak Flow Mitigation			X	N
Flood Preparation in the American River Parkway		X		Y
Improve County ALERT (Automated Local Evaluation in Real Time) System of Stream and Rain Gauges		X		N
Update County Hydrology Standards		X		Y
Woodside Condominiums Repetitive Flood Loss Property		X		Y
Bridge Replacement on Elk Grove Florin Road at Elder Creek		X		N
Michigan Bar Bridge Replacement at the Cosumnes River		X		N
El Camino Avenue Phase 2 Road Improvements		X		N

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
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.		X		Y
Hydromodification and Stormwater Quality Countywide		X		Y
Evacuation Mapping	X			Y
Regional Flood Management Plan Projects		X		N
River/Stream/Creek Bank Erosion				
Erosion Site Repairs		X		N
Wildfire Actions				
Wildfire Suppression		X		Y
Wildfire Fighting - Support		X		Y
Wildfire Suppression – Regional Parks and Open Space (urban interface)		X		Y
City of Citrus Heights				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts		X		Y
Rinconada Flood Wall	X			N
Drainage Project Implementation		X		Y
City of Elk Grove				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts		X		Y
Mutual Aid Agreements		X		Y
Elk Grove Green Street Project: Repurposing Urban Runoff with Green Instructure Technologies			X	Y
Hazard Education and Risk Awareness		X		N
City of Elk Grove's Storm Drainage Master Plan (SDMP)		X		Y
City of Folsom				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts	X			N
Stormwater Basin Maintenance and Operation Project		X		Y
Alder Creek Watershed Council			X	N
Drainage System Maintenance Tax Assessment			X	Y
Floodplain Mapping		X		N
Redevelopment Area Drainage Improvements		X		Y
Stormwater Basin Maintenance and Operation Project		X		N
Heating and Cooling Centers		X		Y
Public Education/Outreach Extreme Weather		X		Y
Weed Abatement Program		X		Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Arson Prevention and Control Outreach		X		N
Wildfire Hazard Identification		X		N
Ignition Resistant Building Construction Upgrades		X		N
Wildfire Prevention Outreach		X		N
City of Galt				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts			X	Y
Increase Redundancy/Functionality of Water Wells and Sewer Lift Stations		X		N
Drain Inlet Retrofit Capital Improvement Plan (CIP)		X		N
Creek/Streams Vegetation Management Plan			X	Y
Increase Data Capacity of Emergency Frequencies	X			N
City of Isleton*				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan			X	Y
Storm Water Runoff Rehabilitation Project			X	Y
Wastewater Treatment Plant Pond Levee Elevation Raise to 200-year Flood Standard			X	Y
City of Rancho Cordova				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	X	X		Y
Sunrise Boulevard Widening Kiefer to Jackson			X	Y
City of Rancho Cordova Disaster Debris Management Plan	X			Y
Transportation Interconnectivity		X		Y
Intergovernmental Agreement between the County of Sacramento and the City of Rancho Cordova	X			Y
Land Use (Long range)		X		Y
Post disaster training for staff		X		Y
Update/Maintain Emergency Operation Plans (EOPs)			X	Y
Increase Everbridge Enrollment		X		Y
Developing and maintaining a database to track community vulnerability.		X		Y
City Website HMP and City Website, Press Notification, and Social Media Emergency Information		X		N
Building & Safety Division Disaster Inspector Training		X		N
Landscape and Irrigation Requirements/Retro			X	Y
Landscape Ordinance			X	Y
Impervious surface			X	Y
Porous pavement and vegetative buffers			X	Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Storm Water Pump Station Infrastructure Upgrades		X		Y
SB-5 Urban Level of Flood Protection	X			Y
Channel Vegetation Management and Erosion Control		X		Y
Adoption of Hydromodification and Low Impact Development (LID) Standards	X			Y
Stormwater Capital Improvement Program Master Plan		X		Y
Sunrise Blvd. & Monier Circle Drainage Improvements		X		Y
Roundabouts		X		Y
City of Sacramento				
Multi-Hazard Actions				
Integrate Local Hazard Mitigation Plan into Safety Element of General Plan		X		Y
Coordination with Relevant Organizations and Agencies to Consider the Impacts of Urbanization and Climate Change on Long-Term Natural Hazard Safety		X		Y
Maintain and Identify Changes in Critical Facilities GIS Layer to Support Emergency Management Efforts		X		Y
Community Outreach on Multi-Hazard Preparation & Pre-mitigation	X	X		Y
Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas		X		Y
Retrofit of Repetitive Loss Properties			X	Y
Safeguard Essential Communication Services		X		Y
Multi-lingual Disaster Education	X	X		Y
Cal OES Safety Assessment Program Evaluators		X		Y
National Flood Insurance Program & Community Rating System Continuation		X		Y
Coordinate with Sacramento Area Flood Control Agency on Completion of South Sacramento Streams Group Projects	X			N
Develop a Master Generation Plan for Pump Stations		X		Y
Develop a Disaster Housing Plan		X		Y
Disaster Resistant Business Program		X		Y
Develop Enhanced Emergency Planning for Special Needs Populations in the City of Sacramento Emergency Operations Plan and Other Planning Documents		X		Y
Establish a Post-Disaster Action Plan		X		Y
Flood Recovery Plan		X		Y
Public Information Flood Response Plan		X		Y
Construction of a new Emergency Operation Center (EOC)			X	Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Emergency Operation Center (EOC) Expansion and Information Technology Upgrade		X		Y
Protection of Transportation Infrastructure			X	Y
Public Education Campaign for Everbridge System	X			Y
Regional Emergency and Disaster Preparedness Exercises to Test Operational & Emergency Plans		X		Y
Special Needs and Critical Facilities Database and Advanced Warning System		X		Y
Assets Inventory		X		Y
Protection of City Assets from Cyber Terrorism	X			Y
Protection of City Information Technology Infrastructure		X		Y
Cell Booster	X			N
Travel Time Model for Lower American and Sacramento Rivers and their Major Tributaries		X		Y
Watershed Spill Contamination to Drinking Water Quality: Preparedness for Events and Recovery		X		Y
Purchase Drones for Use in Disaster Preparedness, Mitigation, and Response		X		Y
Climate Change Actions				
Map and Assess Vulnerability to Sea Level Rise			X	Y
Emission Study of City Sump and Pump Stations		X		Y
Climate Change Mitigation Actions/Climate Change Adaptation Plan for Drinking Water Quality		X		Y
Harmful Algal Bloom (HAB) Surveillance and Response Planning		X		Y
Drought and Water Shortage Actions				
Aquifer Storage	X			N
Perform a Groundwater Recharge Feasibility Study	X			Y
Earthquake Actions				
Map and Assess Community Vulnerability to Earthquakes	X			N
Seismic Vulnerability Assessment on Sacramento Levees, Infrastructure & Buildings	X			N
Retrofit Historical Buildings		X		Y
Extreme Cold and Heat Actions				
Heating Centers in High Priority Locations		X		Y
Cooling Centers in High Priority Locations		X		Y
Extreme Weather Outreach Strategy		X		Y
Severe Weather Action Plan		X		Y
Flood, Localized Flood, and Levee Failure Actions				

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Coordinate with Stakeholder on Proposed Flood Control Project on Magpie Creek		X		Y
Adopt Additional Floodplain Development Standards		X		Y
Drainage Projects for Repetitive Loss Properties		X		Y
Emergency Notification and Evacuation Planning		X		Y
Historic Magpie Creek		X		Y
Natomas Internal Drainage Canals/Levees		X		Y
Drainage Projects from the City's Priority Drainage Project List			X	Y
Projects Identified in the Combined Sewer System Improvement Plan Update		X		Y
Easements for Open Land Along Levees		X		Y
Emergency Management Planning and Levee Security		X		Y
Flood Fighting Equipment	X			Y
Flood Management Land Use Planning and Development		X		Y
Florin Creek Pump at Pomegranate Avenue			X	Y
Internal Drainage System Improvements		X		Y
Levee and Structural Flood Management Improvements		X		Y
Master planning to identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding		X		Y
Retrofit Pumping Plants with Discharge Monitoring Devices		X		Y
Risk Communication and NFIP/CRS Projects		X		Y
Steamers and Rio City Café Floodwalls	X			N
Trash Racks and Debris Cages		X		Y
Multi-Jurisdictional Modeling for Drainage Watersheds Greater Than 10 Square Miles		X		Y
Post-Flood Water Treatment Facility Recovery		X		Y
Wind and Tornado Actions				
Tree Trimming & Debris Removal		X		Y
Upgrading Overhead Utility Lines & Burying Critical Power Lines		X		N
Install Redundancies and Loop Feeds for Power Lines & Infrastructure		X		Y
Erosion Actions				
Stabilization of Erosion Hazard Areas		X		Y
Wildfire Actions				
Implement a Fire Education and Information Program		X		Y
Fuels Reduction on the American River Parkway			X	Y
Outreach on the Effects of Smoke on Air Quality			X	Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Cosumnes Community Services District				
Flood Response Equipment		X		Y
Flood Response Training		X		N
Los Rios Community College				
District Wide Roofing Renovations	X			N
ARC Drainage at Arcade Creek	X			N
Protect District Property		X		N
Metro Fire District				
Relocate the essential facilities in the 200-year flood plain			X	Y
Perform seismic study of all district facilities and identify those facilities at greatest risk for earthquake damage.			X	N
Implement a Wildland Urban Interface (WUI) Building/Fire Code			X	N
Develop and Implement a comprehensive WUI fuels management program.		X		N
Deploy 2 remote automated weather stations (RAWS) in Metro Fire jurisdiction			X	N
Defensible space ordinance			X	N
Brannan Andrus Levee Maintenance District				
Implement Bioengineered Bank Stabilization techniques		X		N
Development of Dredge Stockpile Site	X			N
Georgiana Slough Waterside Erosion Repair		X		Y
Hydrographic surveys and data collection	X			N
Mokelumne River Crown Raising	X			N
San Joaquin River Waterside Erosion Repair	X			N
Sevenmile Slough French Drain and Seepage Berm			X	N
Reclamation District #3*				
Levee Improvements		X		N
Reclamation District #341*				
San Joaquin River Setback Levee/Habitat Bench Multi-Benefit Project, Phase 1		X		N
Complete Projects from Regional Flood Management Plan		X		N
Reclamation District #369				
Pump Station Upgrades and Backup Generators		X		Y
Levee Maintenance Program Improvements		X		N
RD 551*				
Levee Improvements		X		N

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
Reclamation District #554*				
Apply for a Letter of Map Revision (LOMR) to bring the District back into Zone X. (outside of the 100-year flood zone)			X	N
Fill Abandoned Slough		X		N
Geotechnical Investigation		X		N
Snodgrass Slough Levee Improvements			X	N
Reclamation District #556*				
Flood Response Activities, Georgiana Slough Weir		X		N
Georgiana Slough Vegetation Management			X	N
Georgiana Slough Waterside Erosion Repair			X	N
Topographic and Hydrographic Surveys and Data Collection		X		N
Reclamation District #563*				
Rock Slope Protection Project		X		Y
HMP and PL-8499 Levee Improvement Projects		X		Y
Reclamation District #800				
Erosion Repair		X		Y
Emergency Supplies			X	N
Reclamation District #1000				
River Berm and Levee Erosion		X		Y
Erosion Protection Canal Banks		X		Y
Implement Security Measures at Key Facilities		X		Y
2014 Capital Improvement Plan		X		Y
Implement Supervisory Control and Acquisition Data system (SCADA) on District canals and pump stations		X		Y
Public Outreach and Education		X		Y
Stockpile and pre-stage flood emergency response materials			X	Y
Emergency response improvements including radios for communications	X			N
Emergency Back-up Generator for pump stations		X		Y
Reclamation District #1002*				
Geotechnical Investigation			X	N
Snodgrass Slough Levee Improvements		X		N
Snodgrass Slough Vegetation Management		X		N
Reclamation District #1601*				
Levee Improvement Project		X		Y
Reclamation District #2111*				
Rock Slope Protection Project		X		Y

Action Title	Complete	Ongoing	Not Started	Project in Plan Update
HMP and PL-8499 Levee Improvement Projects		X		Y
Sacramento Regional County Sanitation District				
South River Pump Station Flood Protection Project	X			N
Reduction of Fire Hazard SRCSD Bufferlands		X		Y
Sacramento Area Sewer District				
MOU for Dedicated Cell Phone Tower and Cell Phone Pack		X		N
Southgate Recreation and Park District				
Drought Mitigation Actions/Drought Contingency Plan		X		Y
Flood Mitigation Actions/Land Acquisition		X		Y
Conservation Easements		X		Y
Multi-jurisdictional Cooperation within Watersheds	X		X	Y
Storm Water Management Practices – Implement Storm Water Management Practices as identified in Stormwater Quality Design Manual		X		Y
Severe Weather: Heavy Rains and Storms Mitigation Actions/Tree Management		X		Y
Twin Rivers School District				
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			X	N
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.			X	N
Working with the Department of the State Architect (DSA) on Earthquake Retrofit Plan on all sites.			X	N
Revise and update district-wide Storm Water Prevention Plan		X		N
Create defensible perimeter space – for fire areas. Trees trimmed and vegetation removed to minimize impact during fire season.		X		N

Sacramento County Actions

Multi-Hazard Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General 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?): Completed. However, recommend that when the new LHMP is approved at the Board it be scheduled concurrent with a General Plan amendment round (4 per year) so that the new LHMP can be re-incorporated by reference. Per the State this will be required to maintain our AB 2140 compliance which we currently have.

Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): OES continues to do outreach using Sacramento Ready (website), notification system, and social media.

Increase pedestrian and bicycle evacuation routes by constructing regional bike/pedestrian trail infrastructure, and expanding connection to neighborhoods (particularly in vulnerable areas)

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 47th project was re-scheduled for construction in 2021.

Community Rating System (CRS) Program for Public Information (PPI)

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 reviewed for CRS.

Flood Insurance Assessment, Awareness, and Promotion

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 CRS outreach is an annual activity. Since 1979, the only flood insurance available has been the National Flood Insurance Program, now private flood insurance policies are available in California.

Public Outreach Mailers

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 CRS outreach is an annual activity.

Toxic Substance Release

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

Climate Change Actions

Increase average fuel efficiency and reduce GHG emissions from the County Fleet and Fuels

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

Reduce Sacramento County's vulnerability to Climate Change by reducing GHG emissions in the commercial and residential sectors by making energy efficiency a priority through building code improvements

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 Office of Planning and Environmental Review (PER) continues to work on the County's Climate Action Plan and Adaptation Strategy. In response to Board direction, an ambitious 12-month workplan has been established to complete the CAP. Additionally, PER prepared the County's first Environmental Justice element of the General Plan which was unanimously adopted by the Board in 2020. The Environmental Justice Element contains policies and implementation measures that seek to improve resiliency in disadvantaged areas by targeting improvements to Environmental Justice communities and developing a County-wide outreach strategy that engages those who have been traditionally or systematically excluded from public participation

Mitigate Climate Change impacts by integrating climate change research and adaptation planning into County operations and services

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.

Reduce Sacramento County's vulnerability to extreme heat events and associated hazards by Increase tree planting/canopy preservation/enhancement

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.

Drought Actions

Implement Water Supply CIP

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Continuous progress is being made through construction of Capital Improvement Projects. The projects rehabilitate and upgrade conjunctive use, conservation, production, redundancy, and reliability of the water supply system.

Flood, Levee Failure, and Localized Flood Actions

Keep the PPI current

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 reviewed for CRS and is ongoing yearly.

Alder Creek flood control

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 proposed land development project at Aerojet will include flood control on Alder Creek. The 130 year old gold miner's dam and sediment filled reservoir remains a concern (owned by the City of Folsom).

Alder Creek flood mitigation (dam)

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 land developers should be compelled to help the City deal stabilize this situation.

Alder Creek miners reservoir, property owned by the 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 fish tissue have been tested for Hg. (see note on action above).

Delta Small Communities flood protection - structural and nonstructural mitigation

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): First drafts of the plans for each town will be available for public review in September 2020.

Gum Ranch flood control - joint use basin

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Construction by the adjacent land developer.

Implement Storm Drain CIP

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Continuous progress is being made through construction of Capital Improvement Projects. The projects rehabilitate and upgrade the storm drain system to reduce flood risk.

Laguna Creek at Triangle Aggregate flood control -joint use basins

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Conditional Letter of Map Revision study was submitted to FEMA July 2020. Upon affirmation by FEMA reviewer, staff will reengage the miners in discussions leading to final configuration of the facility.

Laguna Creek mitigate flood hazard south of Jackson Highway

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 of Rancho Cordova is aware of the concern.

Model Sacramento River levee breach (LAMP) south of Freeport

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 will be more about this reach of levee in the Hood Flood Risk Reduction Plan.

Morrison Creek Miners Reach Flood Insurance Study

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 related to the proposed West Jackson Plan. The facility does provide flood control, as a condition of the original mining permit. Some residents downstream are hoping for new flood insurance rate maps, and reduced cost of flood insurance.

Morrison Creek Miners Reach levee improvements

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 related to the proposed West Jackson Plan.

Outreach stormwatch guide (ALERT, Stormready, weather radio)

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 PPI group seeks ways to improve / vary its outreach each year. (See Action #4, above)

Peak flow floodplain mitigation Arcade Creek near Auburn Blvd

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 concern.

Risk Map (flood frequency, depth, velocity)

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. This might be a future interest for the

County. The concept of Risk Map is to provide the public with more information than simply being in the 100-year FEMA floodplain.

Elevation & Acquisition Projects (to Mitigate Flood Risk)

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 active project.

Repetitive Loss Properties (to Mitigate Flood Risk)

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 active project.

Five-Year Capital Improvement Plan – Drainage Projects

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Continuous progress is being made through construction of Capital Improvement Projects. The projects rehabilitate and upgrade the storm drain system to reduce flood risk.

Arcade Creek Corridor 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?): This is a reminder that the Arcade Creek Watershed Plan, 2003 includes some opportunities for jurisdictional partnership (www.saccreeks.org).

Elevate Homes on Long Island (Grand Island Road, Sacramento River)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Grant funding should be forthcoming, for a 2022 project.

Repetitive Loss Church Building on Dry Creek

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Grant funding should be forthcoming, for a 2021 project.

South Branch Arcade Creek – Gum Ranch Basin (with Fair Oaks Park District) and Kenneth Avenue Bridge Improvements (with Sacramento County Department of Transportation)

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 action will be amended.

Dry Creek Flood Hazard Mitigation Acquisitions with County Regional Park 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?): Not yet started.

Arcade Creek at Evergreen Estates Floodwall Improvements

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.

Linda Creek Peak Flow Mitigation

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.

Flood Preparation in the American River Parkway

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.

Improve County ALERT (Automated Local Evaluation in Real Time) System of Stream and Rain Gauges

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 system is being maintained, as is.

Update County Hydrology Standards

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 study to update the depth-duration-frequency table and the climate change analysis are being peer reviewed by a third-party consultant.

Woodside Condominiums Repetitive Flood Loss Property

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 approved two grants to raise up to 90 units at Woodside. The Homeowners Association will soon vote to decide if they want to proceed.

Bridge Replacement on Elk Grove Florin Road at Elder Creek

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 Elk Grove Florin Road Widening Project is scheduled for construction in 2020-21. The project includes replacement of the existing, functionally obsolete, bridge at Elder Creek. The bridge replacement is scheduled for completion in 2021.

Michigan Bar Bridge Replacement at the Cosumnes River

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 Michigan Bar Bridge Replacement project was re-scheduled for construction in 2022.

El Camino Avenue Phase 2 Road Improvements

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 was completed.

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.

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 still of interest to staff, subject to feedback from the property owners(s).

Hydromodification and Stormwater Quality Countywide

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.

Evacuation Mapping

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 are posted on the County GIS (Water Resources page)

Regional Flood Management Plan Projects

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.

River/Stream/Creek Bank Erosion

Erosion Site Repairs

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 changes or updates. We currently have no projects in progress or slated. These as noted on your attached are only entered into by WR when it has been determined that there is a flood, safety, or environmental aspect that deems the repair necessary. Most cases are just natural erosion that is inherent of most of our maintained creek.

Wildfire Actions

Wildfire Suppression

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Regional Parks did install signage and a numbering system for the access roads and trails in various fire-prone areas. Due to staff turnover, it is unknown what "new technology to report fires and share information" refers to, but there is no current improvement over the expectation that citizens call 911 to report fires. Fire departments have coordinated for training burns when conditions and staff allow, but the frequency of training activity seems to have decreased, though Parks is still willing to participate. Parks maintains access roads with brush clearance to allow fire department grass rigs to access most areas, though fire engines will have more limited access.

Regional Parks maintains a prohibition on the use of cooking devices (BBQs, pits, etc) outside of designated picnic areas where the wildfire danger is lower.

Wildfire Fighting - Support

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Regional Parks did install signage and a numbering system for the access roads and trails in various fire-prone areas. Due to staff turnover, it is unknown what "new technology to report fires and share information" refers to, but there is no current improvement over the expectation that citizens call 911 to report fires. Fire departments have coordinated for training burns when conditions and staff allow, but the frequency of training activity seems to have decreased, though Parks is still willing to participate. Parks maintains access roads with brush clearance to allow fire department grass rigs to access most areas, though fire engines will have more limited access.

Parks provided sensitive habitat and cultural resources info in digital format to staff and to outside agencies to help increase the speed and accuracy of decision making during wildfire response.

Wildfire Suppression – Regional Parks and Open Space (urban interface)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Regional Parks applied for a FEMA Hazard Mitigation grant to address the wildfire risk in the Wildland Urban Interface. County Board of Supervisors approved 9.0 FTE positions to create a unit dedicated to reducing wildfire risk and environmental crimes, along with committing $200,000 in the current FY (21-22) for grazing in the Regional Parks system. In prior years, Regional Parks has located ad-hoc funding to graze areas as funding allowed. The focus of the grazing and wildfire reduction is parks areas that are most hazardous to the neighboring residential and commercial structures, and Regional Parks is planning to issue contracts to several grazing vendors to continue the annual spring grazing.

City of Citrus Heights

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts

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 measures are being taken through CIPs, private development projects and maintenance activities, as well as implementation through policies and best practices.

Rinconada Flood Wall

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 completed in 2019 as part of the city's drainage master plan implementation efforts. The project proved successful based on post storm events. However, the ultimate measure of loss avoidance and effectiveness in mitigating local hazard and risk will be determined in the event of large a storm event when the increased capacity can be properly observed.

Drainage Project Implementation

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 action is ongoing as the City continues to develop and deliver projects identified in its existing neighborhood areas drainage master plans. The City is on target to deliver drainage improvement projects annually as part of its stormwater management program.

City of Elk Grove

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts

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 2016 LHMP was used and referenced in the development of the 2019 Comprehensive General Plan Update, which included an updated to the Safety Element. Results from this LHMP Update will be reviewed and considered for amendment into the General Plan later in 2021.

Mutual Aid Agreements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Between 2016 and 2020, the City took part in eight Mutual Aid Agreements to provide Police Department personnel for emergency events, primarily for wildfire incidents in the region. The City will continue to participate in Mutual Aid Agreements to support emergency response as needed.

Elk Grove Green Street Project: Repurposing Urban Runoff with Green Instructure Technologies

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 yet been implemented due to lack of funding. Grant funding has been applied for but not yet awarded.

Hazard Education and Risk Awareness

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 number of outreach efforts have been undertaken in recent years to educate the public on natural hazards. This includes articles in the bi-monthly City newsletter related to risk awareness and flood preparedness, social media PSA campaigns on extreme heat, and additional outreach events on flood risk.

City of Elk Grove's Storm Drainage Master Plan (SDMP)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Several projects identified in the Storm Drainage Master Plan have been implemented. The completion of the following projects reduced the flood risk for locations around the City.

- Sleepy Hollow Detention Basin Retrofit: Increased stormwater infiltration
- North Camden Drive Storm Drain Improvements: Pipe upsizing
- Storm Drain Pump Station Improvements: Upgraded telemetry
- Blakemore Court and Hartwell Court Drainage Improvements: Pipe upsizing
- Bradshaw/Sheldon Intersection Improvements: New culvert
- Emerald Vista Drive Storm Drain Improvements: Pipe upsizing

City of Folsom

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project was implemented. Elements of the LHMP were integrated into the Safety Element of the General Plan most recently updated in 2021, as well as the Emergency Operations Plan most recently updated in 2020. The project certainly reduced risk qualitatively if not quantitatively by highlighting mitigation actions and projects throughout the City.

Stormwater Basin Maintenance and Operation Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project was implemented. A Stormwater Basin Operation and Maintenance Manual was developed, and a Stormwater Basin Assessment Report was prepared that prioritized the rehabilitation efforts needed as existing basins in the City. A Capital Improvement Project was created and to date four basins have been rehabilitated as noted in the assessment report. Three additional basins are anticipated to be rehabilitated in 2021, with additional basins to follow in subsequent years. Each project reduces the risk of flooding in the City.

Alder Creek Watershed Council

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, this project has not been implemented to date.

Drainage System Maintenance Tax Assessment

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, this project has not been implemented to date. Initial compilation of documents and backup data has been conducted by City staff, but to date no Capital Improvement Project has been brought forward to do the necessary public outreach and coordination for a drainage system utility fee to be successful.

Floodplain Mapping

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project was implemented. The City, in coordination with FEMA Region IX, has recently completed updated floodplain modeling and mapping of portions of Alder Creek, Hinkle Creek, Humbug Creek, and Willow Creek. The updated modeling and mapping have been accepted by FEMA and are currently being prepared to be released for public review and comment before becoming effective. Updated effective maps are expected to be available by early 2022.

Redevelopment Area Drainage Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing. Multiple drainage improvements have been constructed in the Redevelopment Area, including project on Natoma Street, Sutter Street, Bidwell Street, Reading, Street, and others. Each project has reduced risk by improving the capacity and efficient of the storm drainage infrastructure.

Stormwater Basin Maintenance and Operation Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Duplicate from Action 2 above.

Heating and Cooling Centers

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Public Education/Outreach Extreme Weather

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Weed Abatement Program

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Arson Prevention and Control Outreach

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Wildfire Hazard Identification

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Ignition Resistant Building Construction Upgrades

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

Wildfire Prevention Outreach

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Yes, this project has been implemented and is ongoing.

City of Galt

Integrate Local Hazard Mitigation Plan into Safety Element of General Plan, as well as other Local Planning Efforts

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Waiting for an opportunity where the City amends/modifies the General Plan adopted in April 2009. The only section modified is the Housing Element.

Increase Redundancy/Functionality of Water Wells and Sewer Lift Stations

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): several of the City's sewer lift stations were rehabilitated (e.g. wet wells lined, stainless steel pump rails, etc). The City awarded in August 2021 a design contract for Lift Station Upgrades. The City constructed two deep water wells for increased flow, better water quality and minimizing impacts to other water purveyors/users by going into a third deeper aquifer. The project was implemented. Main evidence of loss avoidance was a very small number of Sanitary Sewer Overflows (SSOs) between 2016 and 2020.

Drain Inlet Retrofit Capital Improvement Plan (CIP)

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 was not implemented, as the City's stormwater utility does not generate sufficient capital to fund this CIP.

Creek/Streams Vegetation Management 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?): Project was not implemented as the City's stormwater utility does not generate sufficient capital to fund this CIP.:

Increase Data Capacity of Emergency Frequencies

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Completed. Data bandwidth for emergency responders is no longer considered a problem by data system upgrades by data providers.

City of Isleton

Integrate Local Hazard Mitigation Plan into Safety Element of General 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?): The City's General Plan has not been updated for years, thus the 2016 LHMP was not integrated. The City is currently developing an update to the General Plan scheduled to be completed spring 2022. The 2021 LHMP will be incorporated by reference into their updated General Plan Safety Element.

Storm Water Runoff Rehabilitation Project

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Due to lack of funding, this project was not implemented, but will be included in this updated LHMP.

Wastewater Treatment Plant Pond Levee Elevation Raise to 200-year Flood Standard

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Due to lack of funding, this project was not implemented, but will be included in this updated LHMP as part of overall rehabilitation efforts for the WWTP.

City of Rancho Cordova

Integrate Local Hazard Mitigation Plan into Safety Element of General 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?): Project was completed in 2018.

Sunrise Boulevard Widening Kiefer to Jackson

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 section of Sunrise Boulevard south of Kiefer and north of Jackson is subject to localized flooding. This project will raise the road in this area to be above the local flood plain. The design for this project is anticipated to start in 2022 because of funding constraints. This project will be included in the LHMP Update.

City of Rancho Cordova Disaster Debris Management 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?): Plan was completed and submit to CALOES for review. Status of approval is unknown. This project will not be carried forward in this LHMP Update.

Transportation Interconnectivity

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Work on this project is ongoing with the review of development projects. This project will be included in the LHMP Update.

Intergovernmental Agreement between the County of Sacramento and the 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?): MOU complete. This project will not be carried forward in this LHMP Update.

Land Use (Long range)

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 task is ongoing. During the development review process, City staff reviews new projects for environmental sensitive areas when submitted to the City. This task will be included in the LHMP Update.

Post disaster training for staff

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 task is ongoing. It includes OES training and post disaster planning classes/webinars for City staff. The task will be included in the LHMP Update.

Update/Maintain Emergency Operation Plans (EOPs)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Current Emergency Operations Plan was last updated in 2018 and is required to be updated every 5 years, so the next update will be in 2023. This project will be included in the LHMP Update.

Increase Everbridge Enrollment

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 task is ongoing. Outreach to citizens/groups via news outlets/City website/kiosk to encourage enrollment. This project will be included in the LHMP Update.

Developing and maintaining a database to track community vulnerability.

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 task is ongoing. City GIS staff continues to research, gather, and store GIS data relative to major gas transmission lines and facilities. This project will be included in the LHMP Update.

City Website HMP and City Website, Press Notification, and Social Media Emergency Information

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 task did not start because of funding and staffing challenges. The City will develop a 5-year plan to upgrade City owned and operated facilities to include drought tolerant plants in landscaped areas and more efficient irrigation systems. This project will be included in the LHMP Update.

Building & Safety Division Disaster Inspector Training

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. This project will not be carried forward in this LHMP Update.

Landscape and Irrigation Requirements/Retro

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. This project will not be carried forward in this LHMP Update.

Landscape Ordinance

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 task is ongoing. The City will continue to Update and maintain to incorporate proper selection, planting, and maintenance practices into landscape

ordinance. This project will be included in the LHMP Update. In addition, City reviews new development projects for compliance with the MWELO requirements. This project will be included in the LHMP Update.

Impervious surface

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 task is ongoing. The City will continue to limit impervious surfaces within front yard of residential lots. This project will be included in the LHMP Update.

Porous pavement and vegetative buffers

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 task is ongoing. The City will continue to encourage the use of porous pavement, vegetative buffers and islands in large parking areas. This project will be included in the LHMP Update.

Storm Water Pump Station Infrastructure Upgrades

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 started working on this project. The backup generator specifications have been developed. The City is working on design plans for pump stations' site improvements. The project will be completed in the next 2-3 years. This project will be included in the LHMP Update.

SB-5 Urban Level of Flood Protection

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 completed in 2017. The City remapped the 200-year floodplain within City limits. This project will not be carried forward in this LHMP Update.

Channel Vegetation Management and Erosion Control

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 task is ongoing. The City will continue to perform routine weed abatement activities, and complete erosion control and excavation projects as funding allows. This project will be included in the LHMP Update.

Adoption of Hydromodification and Low Impact Development (LID) Standards

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 completed in 2018. The City updated development standards to require new projects to comply with LID and Hydromodification Management requirements. This project will not be carried forward in this LHMP Update.

Stormwater Capital Improvement Program Master 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?): This project is ongoing. The Master Plan was completed in March 2021. There were a number of flood control and maintenance projects identified in the Master plan that amount to $60 Million. The City will be implementing the projects identified in the Master Plan for the next 20-30 years. This project will be included in the LHMP Update.

Sunrise Blvd. & Monier Circle Drainage Improvements

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. The City submitted a grant application to CALOES to fund the design and construction of the basin. The project will be implemented over the next 3 years. This project will be included in the LHMP Update.

Roundabouts

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. The City will continue to encourage round-abouts in place of traffic signals where appropriate. This project will be included in the LHMP Update.

City of Sacramento

Multi-Hazard Actions

Integrate Local Hazard Mitigation Plan into Safety Element of General 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?): A 5-year update of the General Plan is currently underway. City staff will incorporate the City's LHMP annex into the safety element as part of the general plan update.

Coordination with Relevant Organizations and Agencies to Consider the Impacts of Urbanization and Climate Change on Long-Term Natural Hazard Safety

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-going effort due to limited resources.

Maintain and Identify Changes in Critical Facilities GIS Layer to Support Emergency Management Efforts

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-going effort. Construction data from various sources of varying detail. This is the first comprehensive effort of compiling an up-to-date database. No other documentation exists describing data sources. It's a slow process due to the scope, scale, and complexity of the task, as well as staff's busy workload. Once complete it will need to be QC'd for completeness and accuracy.

Community Outreach on Multi-Hazard Preparation & Pre-mitigation

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 continues to participate and host many community outreach events associated with Hazard awareness and preparation. These events include "Capitol Action Day", "Flood Preparedness Week", "Highwater Jamboree" Annual Flood Preparedness Event and visiting neighborhood meetings and community events to share preparedness information.

Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): GIS continues to work with various groups to identify and update the critical facilities that may be affected by a natural disaster.

Retrofit of Repetitive Loss Properties

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, still working on funding and identifying owners that wish to retrofit their properties. We continue to promote flood insurance as an alternative for now.

Safeguard Essential Communication Services

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Maintenance and continued testing of essential communication services includes the City phone system, electronic mail, network services and servers, and critical infrastructure. Resolution underway to protect critical infrastructure to include facilities that house data centers, network services and servers, and our 9-1-1 communications. Information Technology also provides support through ongoing updates, testing, and strengthening of our essential communication services.

Multi-lingual Disaster Education

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 of Sacramento Office of Emergency Management established citywide translation services contracts accessible to all City Departments:

Translation/Interpretation Services	Interlingva, Inc. Instructions	PRC000495
	International Effectiveness Centers Instructions	PRC000519
	NorCal Services for the Deaf and Hard of Hearing Instructions	PRC000428
Translation/Interpretation Services (Telephone Only)	CTS Language Link	PRC000888

Source: City of Sacramento

Cal OES Safety Assessment Program Evaluators

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 ongoing program that requires continuous recertification of the inspectors and other staff members. The building division is tracking the number of employees who are current SAP evaluators. If training is needed for certification/recertification the staff members are schedule for that training. The city's participation in this program allows for us to ask for mutual aid from other participating jurisdictions. The loss avoidance for this item would be the avoidance of loss of life. This will keep people out of unsafe structures.

National Flood Insurance Program & Community Rating System Continuation

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 of Sacramento continues participation in

this program, always working towards improving our classification status by implementing new programs and projects.

Coordinate with Sacramento Area Flood Control Agency on Completion of South Sacramento Streams Group Projects

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 completed, several properties were taken out of the floodplain and flood risk has been reduced to the area.

Develop a Master Generation Plan for Pump Stations

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 has a robust generator plan but a master plan is still in the process. Sumps that need generators have been identified but the program has been delayed due to funding.

Develop a Disaster Housing 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?): Office of Emergency Management to assist with development of a Disaster House Plan. Supplement with OEM Emergency Operations Plan and Pre-Disaster Recovery Plan. Include the City's Office of Innovation and Economic Development as a resource.

Disaster Resistant Business Program

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 program has not started due to funding. The goal of this program is to increase community resiliency and avoid financial losses. The economic development department is interested in keeping this action in the next plan update.

Develop Enhanced Emergency Planning for Special Needs Populations in the City of Sacramento Emergency Operations Plan and Other Planning Documents

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 OEM includes Access and Functional Needs (AFN) throughout the Emergency Operations Plan (EOP) and Pre-Disaster Recovery Plan. OEM continues to meet with AFN leaders to ensure accessibility and inclusion are maintained in compliance with the Americans with Disabilities Act. OEM plans are updated on a continuous basis and ensure that AFN is included throughout the entirety of the plan. Efforts to strengthen inclusivity continues as OEM networks and attends trainings, seminars, and events pertaining to AFN and diversity.

Establish a Post-Disaster Action 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?): City OEM established a Post-Disaster Recovery

Plan that is updated on a continuous basis. City OEM provides direction on Post-Disaster Plans established by the City.

Flood Recovery 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?): On-going, discussions need to be had to determine responsible parties.

Public Information Flood Response 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?): Use Alert & Warning Guidelines, and keep the same lists as the last LHMP

Construction of a new Emergency Operation Center (EOC)

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 not started, delayed due to COVID-19. Still seeking facility and infrastructure to build out full EOC Capabilities (Keep same information as last LHMP).

Emergency Operation Center (EOC) Expansion and Information Technology Upgrade

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Incorporate Citywide inventory management system, upgrade technology equipment for fully functional EOC facility and virtual coordination capacity.

Protection of Transportation Infrastructure

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 not started, but is being carried forward in this Plan Update.

Public Education Campaign for Everbridge 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 program has been implemented and is ongoing, using media, and regular testing of the Everbridge system.

Regional Emergency and Disaster Preparedness Exercises to Test Operational & Emergency 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?): This is an on going task. Issues with social distancing requirements to hold in person trainings and exercises due to covid.

Special Needs and Critical Facilities Database and Advanced Warning 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?): On-going. Resolution passed and GIS created an app identifying critical infrastructure, title 8 health and safety chapter 8.140 protection of critical infrastructure and wild fire risk areas.

Assets Inventory

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 Asset Inventory for the Department of Utilities has been implemented and is an ongoing process. For horizontal assets (typically at grade or below ground such as pipes, valves, etc.), the Operations and Maintenance staff has been collecting and validating asset data as resources allow. Asset inventory completeness depends upon the system, with the inventory for the water system being the most complete and the inventory for the storm drain system being the least complete. DOU utilizes Geographic Information Systems (GIS) and CityWorks, a computerized maintenance management system to track and record horizontal assets, including locations. For vertical assets (facilities, some of which may have below ground components), the Operations and Maintenance staff has been actively collecting and validating asset data for all vertical assets, including Treatment Plants, Wells, Reservoirs, and Sump Stations. DOU utilizes Maintenance Connection, a computerized maintenance management system, to track and record above ground asset data, including locations. The above ground asset inventory is nearly complete and includes information technology equipment, communication equipment, electrical equipment, permanent generators, and machinery. DOU also uses Maintenance Connection to track mobile assets like vehicles, temporary generators, and other heavy equipment and machinery. Hazard identification, which includes information on overhead powerlines, levee crossings, river crossings, etc. for each asset are typically listed in the computer system where the asset resides. The administrative buildings and treatment plants are the only facilities that have office assets such as furniture. Both of the administrative buildings at 35th Avenue, along with the Combined Wastewater Treatment plant were inventoried in 2016. Office assets for these facilities are tracked in a spreadsheet. Office asset inventories for the two Water Treatment Plants and the Meadowview facility still need to occur. By continuing to improve our asset inventories, we are reducing risk by being able to track asset location and condition and repair or replace assets in a timely manner. The completed asset inventories will allow us to identify what has been damaged or lost during a disaster.

Protection of City Assets from Cyber Terrorism

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 action item is in place. The City has an information security program in place that follows the NIST cybersecurity framework to protect us from cyber-attacks

Protection of City Information Technology Infrastructure

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 has an on-going process to protect the city's IT

infrastructure from natural disasters. For example, the city's main data center has been moved out of downtown to avoid flood hazards. In addition, under the draft citywide Pre-Disaster Recovery Plan, the city's Office of Emergency Services is currently working on defining citywide critical infrastructure, including critical IT infrastructure. Additional protection gap analyses and implementation steps will follow.

Cell Booster

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): After thorough research, it was decided that the intermittent issue could be fixed by hardwiring the dispatch consoles rather than using the air cards. That work was conducted and completed in June of 2019. There are no complaints of signal drop since June of 2019.

Travel Time Model for Lower American and Sacramento Rivers and their Major Tributaries

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 River Travel Time Tool and the GIS Spill Mapping Tool are available here http://douapp01/home/spillnotification, on the DOU River Spill Notification Page. This item is marked "ongoing" in the matrix as these tools are reviewed biannually and updated as needed. However, these are fully functional tools which reduce risk by providing accurate and timely travel time estimates for river spills in the vicinity of the City's drinking water intakes on the American and Sacramento rivers. There are no documented examples of loss avoidance.

Watershed Spill Contamination to Drinking Water Quality: Preparedness for Events and Recovery

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 addition to the River Travel Time Tool and the GIS Spill Mapping Tool noted above, the DOU River Spill Notification Page http://douapp01/home/spillnotification, includes links to additional tools, information, procedures, and guidelines to for watershed spill response and recovery. In addition, 11/2019 Watershed Spills and WQ Incidents Guidance Binders are a handy, concise reference tool for responding to spills and water quality incidents. This item is marked "ongoing" in the matrix as the information is reviewed biannually and updated as needed. However, these resources reduce risk by providing accurate and effective information on response and recovery to spills in the American and Sacramento River Watersheds. There are no documented examples of loss avoidance.

Purchase Drones for Use in Disaster Preparedness, Mitigation, and Response

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): DOU / LMA and has an approved Citywide Policy and is developing our procedure, procurement is in the purchase process of the UAV's for the inspections and emergency response to critical infrastructure (levee's) The LMA is in joint coordination and training efforts with Sacramento City Fire and Police.

Climate Change Actions

Map and Assess Vulnerability to Sea Level Rise

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 started due to lack of funding sources.

Emission Study of City Sump and Pump Stations

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): DOU has started doing Department wide GHG inventorying. This action can be addressed in the upcoming Sustainability Action Plan, meaning high level recommendations. From there, projects and funding can be identified. The focus will be on replacement and new projects to upgrade to cleaner and newer emissions.

Climate Change Mitigation Actions/Climate Change Adaptation Plan for Drinking Water Quality

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 effects of climate change on water quality is discussed in the City's most recent Watershed Sanitary Survey Updates for the American River Watershed (2018) and the Sacramento River Watershed (2020). The Water Quality Laboratory and R&D section of DOU is researching the impact of wildfire related runoff on water quality in the vicinity of the City's drinking water intakes on the American and Sacramento Rivers. The City's membership in the Water Research Foundation supports cutting-edge academic research on climate change adaptation and climate change mitigation for water utilities. Current planning for the eventual expansion of the Sacramento River Water Treatment Plant includes elements for climate changes adaptation, such as the consideration of ozone disinfection.

Harmful Algal Bloom (HAB) Surveillance and Response Planning

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, in coordination with agency partners, monitors for algal cyanotoxins in raw water at the intakes to our water treatment plants on the American and Sacramento Rivers and in the treated water produced by the treatment plants. This item is marked as "ongoing" in the matrix as the monitoring is on an annual schedule. The program reduces risk by screening for the presence of algal cyanotoxins in the City's source waters and by demonstrating the removal efficiency of the water treatment process on alga cyanotoxins, should any be detected. There are no documented examples of loss avoidance.

Drought and Water Shortage Actions

Aquifer Storage

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 was included in the groundwater master plan. Also. DOU funded a regional ASR study that was just completed by the Regional Water Authority.

Perform a Groundwater Recharge Feasibility Study

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): We evaluated conjunctive use (flexible operation between surface water and groundwater in our groundwater master plan. This would be "inlieu" recharge where you rely on surface water while the aquifer naturally recharged. We also considered a few direct recharge possibilities. The region is in the middle of creating the groundwater sustainability plan. That is a much more ambitious undertaking. Our internal work is complete. The collective work is ongoing.

Earthquake Actions

Map and Assess Community Vulnerability to Earthquakes

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 part of DWR's levee evaluations program, the following GIS layer was created http://ferix.water.ca.gov/lep/ . The GIS layer identifies subsurface exploration locations and points of existing vulnerabilities. GERs for each study area can also be download from the website. Screening-level static analyses and screening-level seismic analyses were done on levees surrounding the Sacramento River, American River, NEMDC, and Natomas.

Seismic Vulnerability Assessment on Sacramento Levees, Infrastructure & 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 California Department of Water Resources (DWR) Division of Flood Management conducted a levee evaluations program to assess the existing conditions of levees in California's Central Valley from 2008 to 2015. Levees in each reach/sub-reach were analyzed for six static ULE criteria at the 200-year WSE: erosion risk (i.e., risk of levee breach due to erosion), freeboard, through seepage, under-seepage, landside slope stability, and waterside slope stability. In ULE, analyses were not performed for local discontinuities or penetrations. In addition, a seismic vulnerability evaluation was performed using a 200-year return period seismic event. The results of the assessment were used to classify intermittently loaded levees as having high, medium, or low vulnerability with respect to post-seismic flood protection ability. The reaches/sub-reaches that did not meet static ULE criteria were further evaluated to identify conceptual remedial alternatives. Typical conceptual static remedial alternatives consisted of installing cutoff walls along the centerline of the levees to address seepage and stability deficiencies, placing waterside rock slope protection for erosion and waterside slope stability deficiencies, and localized freeboard repair.

Retrofit Historical 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 City continues to encourage seismic retrofitting of buildings. From the 2035 General Plan:

- the maintenance/repair of historic structures (HCR 2.1.7)
- the adaptive reuse of idled historic buildings (HCR 2.1.14) (something that generally triggers structural retrofit through Building division permitting processes)
- discourages needless demolitions (HCR 2.1.15)
- promotes the education of the public about the value of historic preservation and the protection and reuse of historic buildings (actions of which can lead to seismic retrofit in some instances) (HCR 3.1.4)

Extreme Cold and Heat Actions

Heating Centers in High Priority Locations

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Currently, the City uses the County's Severe Weather Guidance as the trigger to activate warming or cooling or clean air centers. Centers are activated in impacted areas throughout the City, using Community Centers (YPCE) or the Library, or other facilities operated by non-government organizations.

Cooling Centers in High Priority Locations

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 uses the County's Severe Weather Guidance as the trigger to activate warming or cooling or clean air centers; however the City also tends to follow National Weather Service and Public Health recommendations and will activate during Excessive Heat Warnings. Centers are activated in impacted areas throughout the City, using Community Centers (YPCE) or the Library, or other facilities operated by non-government organizations. If cooling centers are open at faith-based and other community facilities, the list is posted at 211sacramento.org or is available by calling 2-1-1.

Extreme Weather Outreach Strategy

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 uses the media, Everbridge, and other Alert & Warming Capabilities to provide outreach.

Severe Weather Action 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?): Currently, the City uses the County's Severe Weather Guidance as the trigger to activate warming or cooling or clean air centers. The City is currently

analyzing the need to enhance and adapt the guidance to tailor to the needs of the City areas impacted by large, unhoused communities.

Flood, Localized Flood, and Levee Failure Actions

Coordinate with Stakeholder on Proposed Flood Control Project on Magpie Creek

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. Lead agency is USACE with SAFCA and City of Sacramento as the non-federal sponsors. The America Common Features Reach I (Magpie Creek) diversion Channel Levee improvements project is at 35 % design stage with an estimated construction time in 2022.

Adopt Additional Floodplain Development Standards

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 on-going. We continue to develop and adopt new standards as needed due to changing regulations.

Drainage Projects for Repetitive Loss Properties

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, since the City currently has 18 repetitive loss properties. More projects are needed to mitigate for these losses. In 2017 a property located in Drainage Basin 31 was removed from the repetitive loss area list due to two projects that were implemented by the Department of Utilities. These projects eliminated property damage by removing the excess peak flow from 65th Street to Sump 31. The two projects are Sump 31 Discharge Pipeline (completed 2001) and Basin 31 Detention Basin at 65th Street and Broadway (completed 2010).

Emergency Notification and Evacuation Planning

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 event of an evacuation, and depending on the event, emergency notifications will be released using the Everbridge System and our Public Information Office. The Office of Emergency Management acts as the liaison and assists the City's Police Department operations to orchestrate the evacuation, Sacramento Fire provides the medical response and assists with community alerts, and YPCE provides sheltering should there be a need. In the event it is a flood related evacuation, the DOC activates and serves as the incident command center.

Historic Magpie Creek

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 on-going. The Magpie Creek Diversion Channel is part of the Corps levee improvement project under the WRDA 16 authorization. This reach of the project should be completed in 2024. The work consists of cutting off all (or the majority) of the spill into historic Magpie and keeping it contained in the diversion channel as it heads north then west

Natomas Internal Drainage Canals/Levees

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. DOU currently has a contract with KSN to provide the evaluation and certification of the interior levees in the Natomas Basin. The recertification will need to be submitted to FEMA prior to 2025.

Drainage Projects from the City's Priority Drainage Project List

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 projects have not started. Due to funding issues related to the drainage fund, DOU/Drainage CIP has not updated the list of drainage improvement projects since 2016.

Projects Identified in the Combined Sewer System Improvement Plan Update

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 long term control plan (LTCP) works towards the 5yr/10yr/100yr goals in the CSS. The CSS improvement plan identified 28 projects and 3 programs. The LTCP is implementing the 20% of the projects and all of the programs. So far one project has been completed and that is 9th Street. The rest on the list below are in progress. The report has a schedule of when the rest of the projects will be completed.

Project No.	Project Name	Current Status (As of March 2021)
X14010097	Existing CS Optimization	Design 60%
X14010098	Freeport Sewer Improvement - Bidwell and Freeport	Out to Bid
X14010042	9th Street Sewer Replacement G to L Street	Complete
X14010104	McKinley Park CS Storage Facility	Construction
X14170107	W and 25th Street Storage	Pre-Design
X14170106	24th Street Storage	Pre-Design
I14610304	RDII Pilot Program	Planning
I14610303	GI Pilot Program	Planning
Program	Water Conservation Program	Implementation

Source: City of Sacramento

Easements for Open Land Along Levees

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. An analysis of current levee easements and setback to determine where additional and future easements will be needed is still on-going as well as developing a method and funding source to acquire the needed easements and open space to meet the ULDC standards.

Emergency Management Planning and Levee Security

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 Flood Exercise Seminar was conducted in October of 2020 to train on the newly developed department's Emergency Operations Plan and to test the DOC Guidelines document. From the exercise, we are currently conducting training for all of the DOC participants on the key points of both documents. The data collected will be determined how the September 2021 exercise will be presented. In addition, we are working on the update to our Business Continuity Plan which could serve beneficial during a flood disaster.

The City currently has an OM Manual, with security portion from the South Sac Streams Interim, an original Sacramento River OM Manual and info on Levee Security from DHS. Also, we use a Security Awareness Guide for Levees from DHS. A more detailed Levee Security plan is needed.

Flood Fighting Equipment

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 mitigation Action was completed:

- Landing Craft is in the build process
- Excavator and trailer have been purchased
- 20,000 sand bags
- Misc. stakes, twine, visqueen
- Approx. 2,000 tons of Rip Rap
- Flood Warehouse Forklift
- UAS Survey Drone for Levee Inspections
- DOU has two DWR Conex Boxes staged at NACY full of Flood Fight Supplies

Flood Management Land Use Planning and Development

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. As part of the 2040 General Plan Update, staff will be evaluating potential new floodplain management policies.

Florin Creek Pump at Pomegranate Avenue

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 was not completed. A grant application was submitted to the state but were denied, no funding was available for this project.

Internal Drainage System Improvements

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Due to lack of drainage rate adjustment, there has been no funding to implement improvement projects. Some work has been done on drainage basin master

plans - Basin 33/34, Basin 129, and Basin 147. The models for Basin 54 and North Natomas Basins 5, 6, and 8a. have also been updated.

Levee and Structural Flood Management Improvements

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. There are currently six federally authorized projects that are being implemented to reduce flood risk to the Sacramento area:

- Natomas Levee Improvement Project-current On-going with active construction
- American River Common Features-current On-going with active construction
- Folsom Dam Modifications/Joint Federal Project- Complete (just some O&M issues to address – fully functional)
- Folsom Dam Raise Project- On-going with active construction
- South Sacramento Streams Group Project (Federal Project)-Complete – Fully functional some minor grading activities remain
- Sacramento River Bank Protection Program-Currently being done under WRDA 2016 ARCF authorization

Other efforts are ongoing:

- SAFCA levee accreditation for FEMA level of protection
- Regional planning as part of the Central Valley Flood Protection Plan
- USACE-CVFPB-SAFCA General Reevaluation Report (GRR) planning for 200-year flood protection for Sacramento area
- SAFCA and City plan development for 200-year flood protection to meet state requirements for Urban Level of Protection and Urban Levee Design Criteria

Master planning to identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding

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 on-going due to funding issues. Two new master plans were developed, Basin 147 and Basin 129. Will continue to develop master plans to identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding in areas of the City that do not currently have master planning. Projects will be prioritized and will formulate timeline for the identified projects

Retrofit Pumping Plants with Discharge Monitoring Devices

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 2016, Dou has installed flow meters at one drainage pump station, Sump 141. Currently DOU is funding a study this year to evaluate alternative flow meter technologies to meter our Drainage stations. This study will recommend a pilot installation of one or more-meter technologies at our drainage pump stations. Based on the results from the pilot installations, a drainage metering program will be proposed. A project/study report will be reviewed by the end of April.

Risk Communication and NFIP/CRS Projects

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 going – City continues to participate in NFIP/CRS programs as well as PPI which provides risk communication to the public

Steamers and Rio City Café Floodwalls

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 completed. This project resulted in increased flood protection thereby decreasing the likelihood of loss of life and property. The repair included removal of the existing wood fascia boards on both sides and top of the existing flood wall, and replacement with new wood on the easterly (land) side, and new wood on the top of the floodwall to match the existing height. The westerly (river) side of the wall will remained exposed concrete.

Trash Racks and Debris Cages

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-going due to funding issues. A study has begun to evaluate the effectiveness of antiquated trash racks at two pump stations and one ditch location. Once these studies are completed, estimated June 2021, the City will make recommendations to more effectively remove trash and debris at these locations. A larger effort is dependent on resources and funding availability

Multi-Jurisdictional Modeling for Drainage Watersheds Greater Than 10 Square Miles

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-going project. Currently, a Natomas Basin drainage study is underway via joint efforts from RD 1000, County of Sacramento, and City of Sacramento. The Parties wish to prepare a Letter of Map Revision (LOMR) for the Natomas Basin internal floodplain as part of an exterior levee certification project; and have determined that the existing model of the Natomas Basin internal floodplain requires an update in order to meet their current needs.

Post-Flood Water Treatment Facility Recovery

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 11/2019 Watershed Spills and WQ Incidents Guidance Binders are a handy, concise reference tool intended for responding to spills and water quality incidents. However, the information, and guidance contained in the binders is also applicable to floodwater contamination at the treatment plants. This item is marked “ongoing” in the matrix as the information in the binders is reviewed biannually and updated as needed.

Wind and Tornado Actions

Tree Trimming & Debris Removal

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 Urban Forestry Section of Public Works provides continuous maintenance to trees located within the public right of way and responds to all reports of tree related impacts to the right of way. Emergency service is available 24 hours a day 7 days a week. Additional staff and equipment can be mobilized during extreme weather events to meet the needs of the situation.

Upgrading Overhead Utility Lines & Burying Critical Power Lines

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Over the next several months and through the first quarter of 2021 SMUD will be performing a series of maintenance and reliability enhancements. There are a total of 13 reliability enhancements. Project will reduce the number and duration of power outages and provide reliable electrical service

Install Redundancies and Loop Feeds for Power Lines & Infrastructure

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): SMUD is in the process of constructing two new Substation to serve midtown and downtown areas. Substation E is scheduled for construction through 2021. Substation H is in the proposal stage. The projects will improve energy reliability and capacity

Erosion Actions

Stabilization of Erosion Hazard Areas

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 US Army Corp of Engineers has headed the Sacramento River Bank protection Project and this mitigation action will be channeled through them as an expansion to their ongoing efforts

Wildfire Actions

Implement a Fire Education and Information Program

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 will be included in this Plan Update.

Fuels Reduction on the American River Parkway

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 and resources are not available at this time.

Outreach on the Effects of Smoke on Air Quality

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): See the County's new Hazardous Air Quality Annex, under the Severe Weather Guidance Plan

Cosumnes Community Services District

Flood Response Equipment

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, but is not included in this Plan Update.

Flood Response Training

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 in this Plan Update.

Los Rios Community College

District Wide Roofing Renovations

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 completed. An integrated foam system was utilized to make the existing roof system structures more weather resistant, reducing the permeability of the roof material and adding protection from rainwater penetrating the existing equipment located on buildings' rooftops.

ARC Drainage at Arcade Creek

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 completed including regrading the land next to Arcade Creek to have overflow from the creek flow back into creek area as well as land improvements made during development of adjacent athletic fields. This has minimized the likelihood of localized flooding from Arcade Creek during the rainy season to reach critical facilities and damage campus buildings.

Protect District Property

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 action is ongoing in nature. Addressing potential localized flooding issues are assessed in conjunction with infrastructure improvements and construction projects as they occur. This work is incorporated into the planning process through capital improvement projects. LRCCD examines avenues to discover ways to improve localized flooding risk to property, buildings, parking lots, and road closures that would impact student access, displace instruction, and cause costly cleanup or repairs.

Metro Fire District

Relocate the essential facilities in the 200-year flood plain

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 not implemented due to funding priorities. This is included in this 2021 LHMP Update.

Perform seismic study of all district facilities and identify those facilities at greatest risk for earthquake damage.

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 not implemented due to funding priorities. The viability of this and other projects will be determined based on recommendations included in the Sac Metro's Community Risk Reduction Plan which is scheduled to be completed in late 2021.

Implement a Wildland Urban Interface (WUI) Building/Fire Code

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 not implemented due to funding priorities. The viability of this and other projects will be determined based on recommendations included in the Sac Metro's Community Risk Reduction Plan which is scheduled to be completed in late 2021.

Develop and Implement a comprehensive WUI fuels management program.

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 not implemented due to funding priorities. The viability of this and other projects will be determined based on recommendations included in the Sac Metro's Community Risk Reduction Plan which is scheduled to be completed in late 2021.

Deploy 2 remote automated weather stations (RAWS) in Metro Fire jurisdiction

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 not implemented due to funding priorities. The viability of this and other projects will be determined based on recommendations included in the Sac Metro's Community Risk Reduction Plan which is scheduled to be completed in late 2021.

Defensible space ordinance

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 not implemented due to funding priorities. The viability of this and other projects will be determined based on recommendations included in the Sac Metro's Community Risk Reduction Plan which is scheduled to be completed in late 2021.

Brannan Andrus Levee Maintenance District

Implement Bioengineered Bank Stabilization techniques

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 estimated to be completed in 2022-2023. Native grasses and plants selected to stabilize the levees. This risk reduction and loss avoidance results from tying the levee soils together making is more difficult for the levee sections to erode. The protection is from the grasses and plants themselves against wave and current actions.

Development of Dredge Stockpile Site

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 implemented and completed. This project accomplished channel maintenance and is for navigational loss avoidance for ship traffic to have navigational abilities up the river. BALMD will reuse the dredge for an upcoming large Sacramento River Erosion and Habitat Enhancement project.

Georgiana Slough Waterside Erosion Repair

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Selected locations on the Georgianna Slough annual rip-rap repair provides risk reduction and protection from loss avoidance.

This project is funded and underway in planning and most recently in the permit process. The toe of the levee has become too steep resulting from erosion at the bottom of the river. This project is underway to keep the levee from failure. This is a loss avoidance project and will reduce risk.

Hydrographic surveys and data collection

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 performed as pre-dredge and post-dredge for verification of depth. Preformed on levee sections under the water to determine levee section viability and stability longevity. This method provides data for maintenance locations resulting in future reduce risk and loss avoidance.

Mokelumne River Crown Raising

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 crown was raised to insure minimum elevation standards as determined by DWR. These elevations have been raised above MHW. This project stops overtopping of a levee which would cause a catastrophic failure. This crown raising insures no water overtopping and avoids a catastrophic loss.

San Joaquin River Waterside Erosion Repair

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 erosion repair has been completed and has stabilized the loss of riparian habitat and insured levee stabilization.

Sevenmile Slough French Drain and Seepage Berm

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. Funding has been delayed and the project remains in line for funds from the State of California.

Reclamation District #3

Levee Improvements

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, but is not included in this Plan Update.

Reclamation District #341

San Joaquin River Setback Levee/Habitat Bench Multi-Benefit Project, Phase 1

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, but is not included in this Plan Update.

Complete Projects from Regional Flood Management 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?): This project is ongoing, but is not included in this Plan Update.

Reclamation District #369

Pump Station Upgrades and Backup Generators

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 not yet complete. It is being carried forward in this Plan Update.

Levee Maintenance Program Improvements

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 not yet complete. It is not being carried forward in this Plan Update.

Reclamation District #551

Levee Improvements

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, but is not included in this Plan Update.

Reclamation District #554

As a financially strapped RD, #554 has the fortune of being established as a Legacy Community and is high on the DWR list to invest funds for reducing risk and loss avoidance at Snodgrass Slough. The first round of evaluations will assist in providing different options available to the RD to continue risk reduction and loss avoidance. #554 has invested into the Geotechnical Investigations to establish the geometry requirements for risk reduction and loss avoidance for the cross channel.

Apply for a Letter of Map Revision (LOMR) to bring the District back into Zone X. (outside of the 100-year flood zone)

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 started because of the financially strapped RD where the ratio of levee mile to land acreage makes it difficult to fund projects.

Fill Abandoned Slough

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. It continues ongoing as materials for fill are available.

Geotechnical Investigation

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 geotechnical investigation is ongoing. The information is vital and assists 554 in providing different options available to the RD to continue risk reduction and loss avoidance. This project is to establish the geometry requirements at the cross channel.

Snodgrass Slough Levee Improvements

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 because funding that is available had better value in other areas of the RD.

Reclamation District #556

Flood Response Activities, Georgiana Slough Weir

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.

Georgiana Slough Vegetation Management

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 not started. 556 has a ratio of levee mile to land acreage that makes it very difficult to gain financially and cover the expenses required to start projects and keep them ongoing. Their funds are limited and distributed to most dire area of levee maintenance and flood control. With that said, 556 has improved flood response activities which improves the visual inspection of the levees and rip-rap maintenance to protect said levees from erosion. These activities are reducing risk and loss avoidance and will only improve with time.

Georgiana Slough Waterside Erosion Repair

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 not started. 556 has a ratio of levee mile to land acreage that makes it very difficult to gain financially and cover the expenses required to start projects and keep them ongoing. Their funds are limited and distributed to most dire area of levee maintenance and flood control. With that said, 556 has improved flood response activities which improves the visual inspection of the levees and rip-rap maintenance to protect said levees from erosion. These activities are reducing risk and loss avoidance and will only improve with time.

Topographic and Hydrographic Surveys and Data Collection

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Topographic is ongoing and Hydrographic has not started

Reclamation District #563

Rock Slope Protection Project

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 will be carried forward in this Plan Update.

HMP and PL-8499 Levee Improvement Projects

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 will be carried forward in this Plan Update.

Reclamation District #800

Erosion Repair

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 lacked the funds required to implement the erosion repairs immediately after the 2017 floods. Since then, the District has raised assessments and worked in coordination with the National Resources Conservation Service (NRCS) to obtain funding to make the repairs. The NRCS has agreed to help the District repair three of the most critical erosion sites at a 75/25 NRCS/District cost share. The NRCS funded sites located on Freeman Road, Cosumnes Road and Fig Road are scheduled for construction during the summer of 2021. The District plans to continue repairing the other sites as funding becomes available.

Emergency 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 District has been unable to stockpile emergency supplies due to lack of storage space because the District does not own property, shops, or storage buildings. The District is currently searching for office space near or within the District and plans on purchasing a Conex container to keep onsite to store District tools and flood fight supplies.

Reclamation District #1000

River Berm and Levee 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?): Waterside river berm and levee erosion mitigation is an ongoing project typically sponsored by the US Army Corps of Engineers (USACE) under the Sacramento River Bank Protection authorization to address active erosion sites that could impact levee safety. Since 2016, there have been no projects implemented in RD 1000 jurisdiction. However, USACE with the State of California and RD 1000 conduct site surveys to identify potential bank protection sites.

In 2017, the Sacramento region had several disaster declarations due to flood damages. The damages included a significant erosion site on the Sacramento River north of Elverta Road. RD 1000 requested USACE assistance under PL84-99 but was determined the site was not eligible since the erosion was outside the theoretical levee prism. The site contains an existing single family residential structure which is within 15 feet of the erosion. The site will be included in the 2021 LHMP Update.

Erosion Protection Canal Banks

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Erosion protection along the interior canal and ditch banks continues to be implemented on an annual basis. RD 1000 identifies the most critical sites and places the rock slope protection (RSP) to prevent further erosion. Because of the RSP placed, erosion has been prevented which if not mitigated would have resulted in loss of adjacent private property and potential flood damages.

Implement Security Measures at Key Facilities

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 1000 implemented security measures at key facilities including security fencing at Pumping Plant Number 8 and Pumping Plant No. 1 which are RD 1000's most critical pumping plants to reduce flood risk. Since implementation of these fences RD 1000 has not experienced any security breaches of these facilities and loss of power due to the security breaches. Prior to their implementation, RD 1000 experienced vandalism, wire theft and other damages which caused losses of power at these facilities thereby increasing flood risk within Natomas. RD 1000 will continue to implement security measures at key facilities.

2014 Capital Improvement 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?): RD 1000 implemented several projects identified in its 2014 Capital Improvement Plan (CIP) including the security fencing at Pumping Plant Nos 1 and 8; Supervisory Control and Data Acquisition (SCADA) improvements to Pumping Plant Nos. 1, 2, 3, and 8; installation of an emergency generator at Pumping Plant No. 1; improvements to the RD 1000 Corporation Yard including an emergency operations center; purchase of new flood fight equipment. In addition, RD 1000 has been working with the USACE, SAFCA and State of California on the design and construction

of the federally authorized Natomas Levee Project to include projects identified in the 2014 CIP including SCADA at the proposed reconstructed Plant Nos 4 and 5; improved levee access for flood patrols and emergency flood fight response; separate levee patrol and safe parking locations along the levee crown during flood events; improvements to Pumping Plant No. 1 outfall structure including the discharge tunnels through the levee foundation. Implementation of these CIP projects will significantly reduce the flood risk in Natomas by bolstering levee safety, improving pumping plant operations and providing for levee patrols and a robust flood emergency response capability.

Recognizing the changing needs, RD 1000 adopted an update to the CIP in 2020. Some of the projects identified in the RD 1000 2020 CIP Update will be included in the LHMP Update for 2021.

Implement Supervisory Control and Acquisition Data system (SCADA) on District canals and pump stations

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 1000 adopted a SCADA Master Plan in 2018 identifying current and future SCADA needs to allow for monitoring canal levels, pump station operations and security at the key facilities. Following adoption of the SCADA Master Plan, RD 1000 implemented SCADA improvements at Pumping Plant Nos 1, 2, 3 and 8 in 2019 using funds from a Bureau of Reclamation grant in coordination with the Natomas Mutual Water Company to improve water use efficiency in Natomas. The District used these improvements during the most recent flood season to monitor water levels at the pump plants as well as the pump operations all which reduce flood risk. RD 1000 has worked with the USACE, SAFCA and State of California to include SCADA improvements on the proposed reconstruction of Pumping Plant No. 4 (currently under construction) and Plant 5 (future construction) as part of the Natomas Levee Project.

Funding constraints prevented additional SCADA improvements identified in the Master Plan.

Public Outreach and Education

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 1000 conducted public outreach and education by implementing a social media campaign including Twitter and Facebook; it also has a website which provides information about RD 1000 activities, current flood risks and contact information. The website provides links to other sites such as the National Weather Service for weather; reservoir levels, river stages and links to the City and County for evacuation notices. RD 1000 staff met with neighborhood and community groups to provide information about flood risk, levee status and levee construction information. While not directly reducing the flood risk, public information provides a tool for residents to use during a flood emergency to assess their personal risk and make appropriate decisions.

Stockpile and pre-stage flood emergency response materials

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 1000 did not develop any new flood emergency stockpile or pre-staging flood response materials because of the ongoing levee construction activities by SAFCA and now USACE. It is more reasonable to wait until the construction is complete to identify sites

for the future stockpiles. However, RD 1000 did expand its stockpile of materials at the Corporation Yard including large rock, aggregate base, visquine and sand bags.

Emergency response improvements including radios for communications

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 1000 coordinated with Sacramento County Office of Emergency Services (OES) to secure two way radios for communication during an emergency if cell phone service is not available. To date RD 1000 has not had to use the radios during storms or flood events. However their use during flood events if cell service is lost will reduce flood risk by allowing communication within RD 1000 as well as outside emergency responders including law enforcement, fire and other first responders.

Emergency Back-up Generator for pump stations

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 1000 installed a diesel generator at Pumping Plant No. 1 capable of powering all of Plant 1B (6-400HP pumps) and most of Plant 1A. RD 1000 is looking to acquire additional generators, both permanent and portable for the other pumping plants but was not able to purchase due to funding constraints. Generators were included in the 2020 CIP Update and will be identified in the LHMP Update for 2021.

Reclamation District #1002

Geotechnical Investigation

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 not started. Geotechnical investigations remain as a potentially viable resource of information for the future.

Snodgrass Slough Levee Improvements

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 Snodgrass Slough Levee Improvements project has drawings and plans ready to go to bid and continues to focus on risk management and loss avoidance. The 2017 addition of krails and work to address through seepage issues provided a high value of reduced risk and loss avoidance.

Snodgrass Slough Vegetation Management

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. The development of a project is to improve risk management and loss avoidance on the levees.

Reclamation District #1601

Levee Improvement Project

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 will be carried forward in this Plan Update.

Reclamation District #2111

Rock Slope Protection Project

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 will be carried forward in this Plan Update.

HMP and PL-8499 Levee Improvement Projects

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 will be carried forward in this Plan Update.

Sacramento Regional County Sanitation District

South River Pump Station Flood Protection Project

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 River Pump Station (SRPS) Flood Protection Project was completed in 2018. The Project consisted of constructing a new flood protection levee and a raised all-weather access road around the existing SRPS. The ring levee and raised access road consist of a 22-foot high, 160-foot wide bottom width, earthen embankment that surrounds the SRPS and provides access from South River Road in the event that flooding occurs. The newly constructed flood protection system is designed to provide a minimum of 200-year level of protection.

Reduction of Fire Hazard SRCSD Bufferlands

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 Reduction of Fire Hazard to the Regional San Bufferlands is an ongoing annual project that consistently helps to reduce wildfire risk to the property.

Sacramento Area Sewer District

MOU for Dedicated Cell Phone Tower and Cell Phone Pack

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, but will not be carried forward in this Plan Update.

Southgate Recreation and Park District

Drought Mitigation Actions/Drought Contingency 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?): The Southgate RPD continues to implement state mandated water conservation regulations. The Southgate RPD stopped watering by ET (evapo-transportation, i.e irrigating based on weather data). Any new parks and landscape development is required to specify drought tolerant vegetation, less turf areas, less water using sprinkler systems (i.e. netafim, subterranean drip system, internet based controllers, and MP rotators.) All of which promote water conservation. Southgate RPD has identified areas in parks and landscape corridors where water usage would be significantly reduced to conserve our community's precious water resources. Watering area on the perimeter of some parks was significantly reduced or eliminated. Southgate RPD will continue to find was of reducing water consumption especially if we continue to have drought conditions in the following months.

Flood Mitigation Actions/Land Acquisition

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 new development comes along Southgate RPD continues to pursue the acquisition of open space, and parkland, and seek joint-use opportunities with partner agencies. This is an ongoing mitigation action that is usually based on decisions that are made in conjunction with other agencies as area are identified that can serve as flood control areas.

Conservation Easements

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 continues to make an effort to acquire those lands that are considered to contain rare wildlife habitat in order to limit certain types of uses or prevent development from taking place by protecting the land for future generations. As new development comes along Southgate RPD will continues to pursue the acquisition of open space, and parkland, and seek joint-use opportunities with partner agencies.

Multi-jurisdictional Cooperation within Watersheds

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 Florin Creek multi-use basin was completed in 2017. The basin is designed to provide a minimum 100-year level of flood protection for the surrounding neighborhood. Due to the continuing drought conditions the basin has had sufficient water to test its functionality. Southgate RPD continues to work with outside agency in order to provide better flood control and improved recreational benefits at other locations.

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

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 continues to work in collaboration 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.

Severe Weather: Heavy Rains and Storms Mitigation Actions/Tree Management

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 adopted an Urban Forest Management Plan in 2021 that aims to identify actions that will support a healthy and regenerative urban forest. An inventory of trees has been compiled and if there are any high risk trees identified they have been removed and new trees have been planted.

Twin Rivers School District

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?): District does not have any sites in flood areas that require new drainage plans.

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?): District will identify sites where nearby creeks are prone to flooding and assess if modifications need to be made to create defensible spaces.

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?): District previously reached out to DSA regarding Earthquake Retrofit Plans on all sites and this is pending further direction from DSA.

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?): The District revises and updates the Storm Water Prevention Plans as needed per project (for projects over 1 acre).

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?): : District's Maintenance/Grounds Department trims trees and removes vegetation at sites on an ongoing basis.