

## Chapter 5 Mitigation Strategy

**Requirement §201.6(c)(3) and §201.7(c)(3): [The plan shall include] a mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.**

This section describes the mitigation strategy process and mitigation action plan for this Sacramento County Local Hazard Mitigation Plan (LHMP) Update. It describes how the County and participating jurisdictions met the following requirements from the 10-step planning process:

- Planning Step 6: Set Goals
- Planning Step 7: Review Possible Activities
- Planning Step 8: Draft an Action Plan

### 5.1 Mitigation Strategy: Overview

The results of the planning process, the risk assessment, the goal setting, the identification of mitigation actions, and the hard work of the Hazard Mitigation Planning Committee (HMPC) led to the mitigation strategy and mitigation action plan for this LHMP Update. As part of the LHMP Update process, a comprehensive review and update of the mitigation strategy portion of the 2016 LHMP was conducted by the HMPC. Some of the initial goals and objectives from the 2016 Sacramento County LHMP were refined and reaffirmed, some goals were deleted, and others were added. The end result was a new set of goals, reorganized to reflect the completion of or progress towards the 2016 actions, the updated risk assessment and the new priorities of this 2021 LHMP Update. To support the new LHMP goals, the mitigation actions from 2016 were reviewed and assessed for their value in reducing risk and vulnerability to the Sacramento County Planning Area from identified hazards and evaluated for their inclusion in this LHMP Update (See Chapter 2 What’s New). Section 5.2 below identifies the new goals and objectives of this LHMP Update and Section 5.4 details the new mitigation action plan.

Taking all of the above into consideration, the HMPC developed the following umbrella mitigation strategy for this LHMP Update:

- Communicate the hazard information collected and analyzed through this planning process as well as mitigation success stories so that the community better understands what can happen where and what they themselves can do to be better prepared.
- Implement the action plan recommendations of this Plan.
- Use existing rules, regulations, policies, and procedures already in existence.
- Monitor multi-objective management opportunities so that funding opportunities may be shared and packaged, and broader constituent support may be garnered.

#### 5.1.1. Continued Compliance with NFIP

Given the flood hazard in the Sacramento County Planning Area, an emphasis will be placed on continued compliance with the National Flood Insurance Program (NFIP) by all communities. Detailed below is a

description of Sacramento County’s flood management program to ensure continued compliance with the NFIP. A brief description of the County’s CRS program is also provided below. Also to be considered are the numerous flood mitigation actions contained in this LHMP Update that support the ongoing efforts by the County and participating jurisdictions to minimize the risk and vulnerability of the community to the flood hazard and to enhance their overall floodplain management program. A summary of the flood management programs and continued compliance with the NFIP for the incorporated communities are detailed in their jurisdictional annexes.

### *Sacramento County’s Flood Management Program*

Sacramento County has participated in the Regular Phase of the NFIP since 1979. Since then, the County has administered floodplain management regulations that meet the minimum requirements of the NFIP. Under that arrangement, residents and businesses paid the same flood insurance premium rates as most other communities in the country.

The County will continue to manage their floodplains in continued compliance with the NFIP. An overview of the County’s NFIP status and floodplain management program is discussed on Table 5-1.

*Table 5-1 Sacramento County NFIP Status*

NFIP Topic	Comments
<b>Insurance Summary</b>	
How many NFIP policies are in the community? What is the total premium and coverage?	7,497 \$4,578,149 \$2,169,765,000
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	1,747 \$24,741,813.70 137
How many structures are exposed to flood risk within the community?	4,603 (1% Annual Chance) 35,602 (0.2% Annual Chance)
Number of Repetitive Loss and Severe Repetitive Loss Structures?	390 RL structures 1 SRL structures
Describe any areas of flood risk with limited NFIP policy coverage	Per the 2020 PPI Annual Report, overall policies in forces have gone down, but the number of paid losses has gone up. Specific affected areas could not be determined.
<b>Compliance</b>	
Is the Community Floodplain Administrator or NFIP Coordinator certified?	Yes
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Floodplain Management reviews and approves permits.
What are the barriers to running an effective NFIP program in the community, if any?	Public acknowledgment of the hazards
<b>Compliance History</b>	
Is the community in good standing with the NFIP?	Yes
Are there any outstanding compliance issues (i.e., current violations)?	No

NFIP Topic	Comments
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	August 22, 2018
Is a CAV or CAC scheduled or needed?	No
<b>Regulation</b>	
When did the community enter the NFIP?	1979
Are the FIRMs digital or paper?	Digital
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	Meet and Exceed: See Appendix C for Details
Provide an explanation of the permitting process.	Clearly outlined in the floodplain ordinance. This process is strictly enforced.
<b>Community Rating System (CRS)</b>	
Does the community participate in CRS?	Yes
What is the community's CRS Class Ranking?	2
What categories and activities provide CRS points and how can the class be improved?	Sacramento County actively maintains programs that satisfy or surpass all CRS activities in the 300s, 400s, 500s and some 600s. These programs are regularly improved by staff for completeness. The County is trying to improve upon credits for Activity 630.
Does the plan include CRS planning requirements?	Yes, in accordance with the CRS Activity 510 requirements of the 2017 CRS Coordinator's Manual

Source: FEMA/Sacramento County 3/24/2020

The Community Rating System (CRS) was created in 1990. Sacramento County has been in the CRS program since 1992. The program is designed to recognize floodplain management activities that go above and beyond the NFIP's minimum requirements. CRS is designed to reward a community for implementing public information, mapping, regulatory, loss reduction and/or flood preparedness activities. On a scale of 10 to 1, Sacramento County is currently ranked Class 2 community, which gives a 40% premium discount to individuals in the Sacramento County Special Flood Hazard Area (SFHA), and a 10% discount to policyholders outside the SFHA. Sacramento County is one of very few CRS Class 2 communities, ranking them among one of the top CRS communities in California and the nation.

The activities credited by the CRS provide direct benefits to Sacramento County and its residents, including:

- Enhanced public safety;
- A reduction in damage to property and public infrastructure;
- Avoidance of economic disruption and losses;
- Reduction of human suffering; and
- Protection of the environment.

Based on their August 2018 Verification Visit and resulting 2019 Verification Report, the activities that Sacramento County implements and receives CRS credits include:

- **Activity 310 – Elevation Certificates:** The Water Resources Department maintains elevation certificates for new and substantially improved buildings. Copies of elevation certificates are made available upon request. Elevation Certificates are also kept for post-FIRM and pre-FIRM buildings. (61 points)
- **Activity 320 – Map Information Service:** Credit is provided for furnishing inquirers with basic flood zone information from the community’s latest Flood Insurance Rate Map (FIRM). Credit is also provided for the community furnishing additional FIRM information, information about problems not shown on the FIRM, and historical flood information. The service is publicized annually and records are maintained. (90 points)
- **Activity 330 – Outreach Projects:** Credit is provided for informational outreach projects that include brochures in public buildings, general outreach projects that include mailer to the entire community, posts on social media and community events, and priority audience messages that include letters to repetitive loss areas and flood prone properties. These projects are disseminated annually. Credit is also provided for having a pre-flood plan for public information. Credit is enhanced by having a Program for Public Information (PPI), and by having the information disseminated by stakeholders outside the local government. (350 points)
- **Activity 340 – Hazard Disclosure:** Credit is provided for the local real estate agents disclosure of flood hazards to prospective buyers. Credit is also provided for state regulations requiring disclosure of flood hazards. Real estate agents provide a brochure advising prospective buyers about insurance and checking property flood hazards. Credit is enhanced by having a PPI (65 points)
- **Activity 350 – Flood Protection Information:** Documents relating to floodplain management are available in the reference section of the Sacramento Public Library. Credit is also provided for floodplain information displayed on the community’s website. Credit is enhanced by having a PPI. (99 points)
- **Activity 360 – Flood Protection Assistance:** Credit is provided for offering one-on-one advice regarding property protection and making site visits before providing advice. Credit is enhanced by having a PPI. (100 points)
- **Activity 370 – Flood Insurance Promotion:** Credit is provided for assessing the community’s current level of flood insurance coverage and assessing shortcomings. Credit is also provided for development and implementation of a coverage improvement plan. Credit for implementing a coverage improvement plan is enhanced by having a PPI and stakeholder involvement. (90 points)
- **Activity 410 – Floodplain Mapping:** Credit is provided for conducting and adopting flood studies for areas not included on the FIRM and that exceed minimum mapping standards. (37 points)
- **Activity 420 – Open Space Preservation:** Credit is provided for preserving approximately 52 percent of the Special Flood Hazard Area (SFHA) as open space and preserving open space land in a natural state. Credit is also provided for regulations and incentives that minimize development in the SFHA. Credit is enhanced by having a PPI. (1560 points)
- **Activity 430 – Higher Regulatory Standards:** Credit is provided for enforcing regulations that require development limitations, freeboard for new and substantial improvement construction, foundation protection, cumulative substantial improvement, enclosure limits and local drainage protection. Credit is also provided for the enforcement of building codes, a BCEGS Classification of 4/4, state mandated regulatory standards, and regulations administration. (621 points)
- **Activity 440 – Flood Data Maintenance:** Credit is provided for maintaining and using digitized maps in the day to day management of the floodplain. Credit is also provided for establishing and maintaining a system of benchmarks and maintaining copies of all previous FIRMs and Flood Insurance Study Reports. (272 points)
- **Activity 450 – Stormwater Management:** The community enforces regulations for stormwater management, low impact development, soil and erosion control, and water quality. Credit is also provided for watershed master planning. (260 points)
- **Section 502 – Repetitive Loss Category:** Based on the updates made to the NFIP Report of Repetitive Losses as of January 31, 2017, Sacramento County, CA has 65 repetitive loss properties and is a

Category C community for CRS purposes. The community is required to submit either a Repetitive Loss Area Analysis or Floodplain Management Plan. (No credit points are applicable to this section)

- **Activity 510 – Floodplain Management Planning:** Credit is provided for the adoption and implementation of the Sacramento County Local Hazard Mitigation Plan adopted on July 11, 2017. A progress report must be submitted on an annual basis. An update to the credited plan will be due by October 1, 2022. Credit is also provided for conducting a repetitive loss area analysis, and for the adoption and implementation of a Natural Floodplains Functions Plan. (497 points)
- **Activity 520 – Acquisition and Relocation:** Credit is provided for acquiring and relocating 19 buildings from the community’s regulatory floodplain. (74 points)
- **Activity 530 – Flood Protection:** Credit is provided for 81 buildings that have been elevated to protect them from flood damage. (160 points)
- **Activity 540 – Drainage System Maintenance:** A portion of the community’s drainage system is inspected regularly throughout the year and maintenance is performed as needed. Credit is also provided for listing problem sites that are inspected more frequently, for implementing an ongoing Capital Improvements Program, and for maintaining storage basins. The community enforces a regulation prohibiting dumping in the drainage system, and annually publicizes the regulation. Credit is enhanced by having a PPI. (336 points)
- **Activity 610 – Flood Warning and Response:** Credit is provided for a program that provides timely identification of impending flood threats, disseminates warnings to appropriate floodplain residents, and coordinates flood response activities. Credit is also provided for the designation as a Storm Ready Community by the National Weather Service. (269 points)
- **Activity 630 – Dams:** Credit is provided for a State Dam Safety Program. (37 points)
- **Activity 710 – County Growth Adjustment:** All credit in the 400 series is multiplied by the growth rate of the county to account for growth pressures. The growth rate for Sacramento County, CA is 1.06.

### 5.1.2. Integration of Mitigation with Post Disaster Recovery and Mitigation Strategy Funding Opportunities

Hazard Mitigation actions are essential to weaving long-term resiliency into all community recovery efforts so that at-risk infrastructure, development, and other community assets are stronger and more resilient for the next severe storm event. Mitigation measures to reduce the risk and vulnerability of a community to future disaster losses can be implemented in advance of a disaster event and also as part of post-disaster recovery efforts.

Mitigation applied to recovery helps communities become more resilient and sustainable. It is often most efficient to fund all eligible infrastructure mitigation through FEMA’s Public Assistance mitigation program if the asset was damaged in a storm event. Mitigation work can be added to project worksheets if they can be proven to be cost-beneficial.

Integration of mitigation into post disaster recovery efforts should be considered by all communities as part of their post disaster redevelopment and mitigation policies and procedures. As detailed in Section 4.4, the Capability Assessment for the unincorporated County and in the Annex’s for the other participating jurisdictions, post-disaster redevelopment and mitigation policies and procedures are evaluated and updated as part of the Emergency Operations Plan (EOP) updates and other emergency management plans for each community.

These EOP’s, through its policies and procedures, seek to mitigate the effects of hazards, prepare for measures to be taken which will preserve life and minimize damage, enhance response during emergencies

and provide necessary assistance, and establish a recovery system in order to return the community to their normal state of affairs. Mitigation is emphasized as a major component of recovery efforts.

### *Mitigation Strategy Funding Opportunities*

An understanding of the various funding streams and opportunities will enable the communities to match identified mitigation projects with the grant programs that are most likely to fund them. Additionally, some of the funding opportunities can be utilized together. Mitigation grant funding opportunities available pre- and post- disaster include the following.

#### **FEMA HMA Grants**

Cal OES administers three main types of HMA grants: (1) Hazard Mitigation Grant Program, (2) Building Resilient Infrastructure and Communities (BRIC), replacing the former Pre-Disaster Mitigation (PDM) Program, and (3) Flood Mitigation Assistance Program. Eligible applicants for the HMA include state and local governments, certain private non-profits, and federally recognized Indian tribal governments. While private citizens cannot apply directly for the grant programs, they can benefit from the programs if they are included in an application sponsored by an eligible applicant

#### **FEMA Public Assistance Section 406 Mitigation**

The Robert T. Stafford Disaster Relief and Emergency Assistance Act provides FEMA the authority to fund the restoration of eligible facilities that have sustained damage due to a presidentially declared disaster. The regulations contain a provision for the consideration of funding additional measures that will enhance a facility's ability to resist similar damage in future events.

#### **Community Development Block Grants**

The California Department of Housing and Community Development administers the State's Community Development Block Grant (CDBG) program with funding provided by the U.S. Department of Housing and Urban Development. The program is available to all non-entitlement communities that meet applicable threshold requirements. All projects must meet one of the national objectives of the program – projects must benefit 51 percent low- and moderate-income people, aid in the prevention or clearance of slum and blight, or meet an urgent need. Grant funds can generally be used in federally declared disaster areas for CDBG eligible activities including the replacement or repair of infrastructure and housing damaged during, or as a result of, the declared disaster.

#### **Small Business Loans**

SBA offers low-interest, fixed-rate loans to disaster victims, enabling them to repair or replace property damaged or destroyed in declared disasters. It also offers such loans to affected small businesses to help them recover from economic injury caused by such disasters. Loans may also be increased up to 20 percent of the total amount of disaster damage to real estate and/or leasehold improvements to make improvements that lessen the risk of property damage by possible future disasters of the same kind.

## Increased Cost of Compliance

Increased Cost of Compliance (ICC) coverage is one of several resources for flood insurance policyholders who need additional help rebuilding after a flood. It provides up to \$30,000 to help cover the cost of mitigation measures that will reduce flood risk. ICC coverage is a part of most standard flood insurance policies available under NFIP.

## 5.2 Goals and Objectives

**Requirement §201.6(c)(3)(i) and §201.7(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.**

Up to this point in the planning process, the HMPC has organized resources, assessed hazards and risks, and documented mitigation capabilities. The resulting goals, objectives, and mitigation actions were developed based on these tasks. The HMPC held a series of meetings and exercises designed to achieve a collaborative mitigation strategy as described further throughout this section. Appendix C documents the information covered in these mitigation strategy meetings, including information on the goals development and the identification and prioritization of mitigation alternatives by the HMPC.

During the initial goal-setting meeting, the HMPC reviewed the results of the hazard identification, vulnerability assessment, and capability assessment. This analysis of the risk assessment identified areas where improvements could be made and provided the framework for the HMPC to formulate planning goals and to develop the mitigation strategy for the Sacramento County Planning Area.

Goals were defined for the purpose of this mitigation plan as broad-based public policy statements that:

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- A time-independent, in that they are not scheduled events.

Goals are stated without regard to implementation. Implementation cost, schedule, and means are not considered. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. Goal statements form the basis for actions that will be used as means to achieve the goals.

HMPC members were provided with the list of goals from the 2016 LHMP as well as a list of other sample goals to consider. The team was told that they could use, combine, or revise the statements provided or develop new ones, keeping the risk assessment in mind. Each member was asked to provide two goal statements. Goal statements were collected and grouped into similar themes and provided to the HMPC. Some of the statements were determined to be better suited as actual mitigation actions and were set aside for later use. Edits and refinements to these new goals were provided by the HMPC until the team came to consensus on the final goals and objectives for this 2021 LHMP Update.

Based on the risk assessment review and goal setting process, the HMPC identified the following goals which provide the direction for reducing future hazard-related losses within the Sacramento County Planning Area.

**GOAL 1: Minimize risk and vulnerability of the Sacramento County community to the impacts of natural hazards, including consideration of the exacerbation of natural hazards and unique hazards due to climate change; and protect lives and reduce damages and losses to property, public health, economy, and the environment.**

**GOAL 2: Provide protection for critical facilities, infrastructure, utilities, and services from hazard impacts, to include hardening and other efforts to establish redundancy and reliability, to prevent or minimize loss, and to facilitate recovery.**

**GOAL 3: Enhance public outreach, education, awareness, and preparedness for all hazards to minimize hazard related losses and to include effective strategies for reaching underserved communities and vulnerable populations.**

**GOAL 4: Increase community capabilities and leverage interagency and public-private coordination and resources to mitigate losses and to be prepared for, respond to, and recover from a disaster event.**

**GOAL 5: Assure conformance to federal and state hazard mitigation initiatives and maximize potential for mitigation implementation.**



### 5.3 Identification and Analysis of Mitigation Actions

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

In order to identify and select mitigation actions to support the mitigation goals, each hazard identified in Section 4.1 was evaluated at the completion of the risk assessment as part of the second prioritization process to determine which hazards were priorities for mitigation strategy planning. Only those hazards that were determined to be a priority hazard for each participating jurisdiction were considered further in the development of hazard-specific mitigation actions. Those hazards not considered a priority for mitigation strategy development were eliminated from further consideration because the risk of a hazard event in the County is unlikely, the vulnerability of the county is low, or capabilities are already in place to mitigate negative impacts. Further, the resulting mitigation strategy presented in this Chapter focuses on those mitigation actions that each jurisdiction has the authority, resources, and capacity to consider for implementation over the next 5-years covered by this LHMP Update.

Table 5-2 and Table 5-3 provide a listing of priority hazards by jurisdiction to be addressed in the mitigation strategy portion of this Plan.

*Table 5-2 Sacramento County Planning Area: Mitigation Action Priority Hazards by Jurisdiction – Unincorporated County and Incorporated Jurisdictions*

Priority Hazards for Mitigation Action Development	Sacramento County	Citrus Heights	Elk Grove	Folsom	Galt	Isleton	Rancho Cordova
Climate Change	X		X	X	X	X	X
Dam Failure	X	X	X	X		X	X
Drought & Water Shortage	X		X	X	X	X	X
Earthquake	X			X			
Earthquake Liquefaction	X			X			
Floods: 1%/0.2% annual chance	X	X	X	X	X	X	X
Floods: Localized Stormwater	X	X	X		X	X	X
Landslides, Mudslides, and Debris Flow							
Levee Failure	X		X			X	
Pandemic	X		X	X	X		
Severe Weather: Extreme Cold and Freeze	X			X	X		
Severe Weather: Extreme Heat	X		X	X	X	X	X

Priority Hazards for Mitigation Action Development	Sacramento County	Citrus Heights	Elk Grove	Folsom	Galt	Isleton	Rancho Cordova
Severe Weather: Heavy Rains and Storms	X		X	X	X	X	X
Severe Weather: Wind and Tornado	X			X			X
Subsidence	X						
Volcano							
Wildfire	X		X	X	X		X

*Table 5-3 Sacramento County Planning Area: Mitigation Action Priority Hazards by Jurisdiction – Special Districts*

Priority Hazards for Mitigation Action Development	American River Flood	Citrus Heights Water	Cosumnes CSD	Los Rios Community College	RD 800	RD 1000	Sac. County Water
Climate Change	X				X	X	X
Dam Failure	X						X
Drought & Water Shortage							X
Earthquake							X
Earthquake Liquefaction							
Floods: 1%/0.2% annual chance	X				X	X	X
Floods: Localized Stormwater				X			
Landslides, Mudslides, and Debris Flow							
Levee Failure	X				X	X	X
Pandemic			X	X			
Severe Weather: Extreme Cold and Freeze			X				
Severe Weather: Extreme Heat			X				
Severe Weather: Heavy Rains and Storms	X			X	X		
Severe Weather: Wind and Tornado					X	X	
Subsidence							
Volcano							
Wildfire			X				

*Table 5-4 Sacramento County Planning Area: Mitigation Action Priority Hazards by Jurisdiction – Special Districts (continued)*

Priority Hazards for Mitigation Action Development	Sac Metro Fire	Sacramento Regional San	Sac Sewer	Southgate Rec and Park	Twin Rivers School	BALMD
Climate Change	X			X		
Dam Failure	X	X	X			X
Drought & Water Shortage	X			X		
Earthquake					X	
Earthquake Liquefaction	X					
Floods: 1%/0.2% annual chance		X	X	X	X	X
Floods: Localized Stormwater				X	X	X
Landslides, Mudslides, and Debris Flow						
Levee Failure	X	X	X	X		X
Pandemic	X	X	X	X		
Severe Weather: Extreme Cold and Freeze	X			X	X	
Severe Weather: Extreme Heat	X			X	X	
Severe Weather: Heavy Rains and Storms	X			X	X	X
Severe Weather: Wind and Tornado	X				X	
Subsidence						X
Volcano						
Wildfire	X	X		X	X	

*Table 5-5 Sacramento County Planning Area: Mitigation Action Priority Hazards by Jurisdiction – Special Districts (continued)*

Priority Hazards for Mitigation Action Development	RD 3	RD 341	RD 349	RD 369	RD 551	RD554
Climate Change		X				
Dam Failure						
Drought & Water Shortage						
Earthquake		X				
Earthquake Liquefaction				X		
Floods: 1%/0.2% annual chance	X	X	X		X	X
Floods: Localized Stormwater	X		X	X	X	X
Landslides, Mudslides, and Debris Flow						

Priority Hazards for Mitigation Action Development	RD 3	RD 341	RD 349	RD 369	RD 551	RD554
Levee Failure	X	X	X	X	X	X
Pandemic						
Severe Weather: Extreme Cold and Freeze						
Severe Weather: Extreme Heat						
Severe Weather: Heavy Rains and Storms	X	X	X	X	X	X
Severe Weather: Wind and Tornado		X		X		
Subsidence						
Volcano						
Wildfire						

*Table 5-6 Sacramento County Planning Area: Mitigation Action Priority Hazards by Jurisdiction – Special Districts (continued)*

Priority Hazards for Mitigation Action Development	RD 556	RD 563	RD 1002	RD 1601	RD 2111
Climate Change					
Dam Failure	X				
Drought & Water Shortage					
Earthquake		X		X	
Earthquake Liquefaction		X		X	
Floods: 1%/0.2% annual chance	X	X	X	X	X
Floods: Localized Stormwater		X	X	X	
Landslides, Mudslides, and Debris Flow					
Levee Failure	X	X	X	X	X
Pandemic					
Severe Weather: Extreme Cold and Freeze					
Severe Weather: Extreme Heat					
Severe Weather: Heavy Rains and Storms	X	X	X	X	
Severe Weather: Wind and Tornado		X		X	
Subsidence	X	X			
Volcano					
Wildfire					

**It is important to note, however, that all the Hazards addressed in this Plan are included in the countywide multi-hazard public awareness mitigation action as well as in other multi-hazard, emergency management actions, and other hazard-specific actions, providing benefits to all participating jurisdictions to this Plan.**

Once it was determined which hazards warranted the development of specific mitigation actions, the HMPC analyzed viable mitigation options that supported the identified goals and objectives. The HMPC was provided with the following list of categories of mitigation actions, which originate from the Community Rating System:

- Prevention
- Property protection
- Structural projects
- Natural resource protection
- Emergency services
- Public information

The HMPC was provided with examples of potential mitigation actions for each of the above categories. The HMPC was also instructed to consider both future and existing buildings in determining possible mitigation actions. A facilitated discussion then took place to examine and analyze the options. Appendix C provides a detailed review and discussion of the six mitigation categories to assist in the review and identification of possible mitigation activities or projects. Also utilized in the review of possible mitigation measures is FEMA’s publication on Mitigation Ideas, by hazard type. Prevention type mitigation alternatives were discussed for each of the priority hazards. This was followed by a brainstorming session that generated a list of preferred mitigation actions by hazard.

### **5.3.1. Prioritization Process**

Once the mitigation actions were identified, the HMPC was provided with several decision-making tools, including FEMA’s recommended prioritization criteria, STAPLEE sustainable disaster recovery criteria; Smart Growth principles; and others, to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another. STAPLEE stands for the following:

- Social: Does the measure treat people fairly? (e.g., different groups, different generations)
- Technical: Is the action technically feasible? Does it solve the problem?
- Administrative: Are there adequate staffing, funding, and other capabilities to implement the project?
- Political: Who are the stakeholders? Will there be adequate political and public support for the project?
- Legal: Does the jurisdiction have the legal authority to implement the action? Is it legal?
- Economic: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- Environmental: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the DMA requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority. Other criteria used to assist in evaluating the benefit-cost of a mitigation action includes:

- Contribution of the action to save life or property
- Availability of funding and perceived cost-effectiveness
- Available resources for implementation
- Ability of the action to address the problem

The initial list of mitigation actions from the 2016 LHMP and new actions identified during this planning process were reviewed and prioritized via an LHMP mitigation action voting website for inclusion in this 2021 LHMP Update. The Sacramento County mitigation action voting website established at <https://fostermorrison.aweeba.com/> included the list of actions brainstormed during the mitigation strategy meetings and provided a mechanism for everyone to vote on their priority actions for further development as detailed below. This comprehensive review of mitigation measures was performed using the criteria (alternatives and selection criteria) in Appendix C.

With these criteria in mind, HMPC members were each provided with nine weighted votes, indicating High (worth 5 points), Medium (worth 3 points), and Low (worth 1 point) priorities. The team was asked to use the votes to prioritize actions with the above criteria in mind. The point score for each action was totaled. Appendix C contains the total score given to each identified mitigation action.

The process of identification and analysis of mitigation alternatives allowed the HMPC to come to consensus and to prioritize recommended mitigation actions. During the voting process, emphasis was placed on the importance of a benefit-cost review in determining project priority; however, this was not a quantitative analysis. The team agreed that prioritizing the actions collectively enabled the actions to be ranked in order of relative importance and helped steer the development of additional actions that meet the more important objectives while eliminating some of the actions which did not garner much support.

Benefit-cost was also considered in greater detail in the development of the Mitigation Action Plan detailed below in Section 5.4. The cost-effectiveness of any mitigation alternative will be considered in greater detail through performing benefit-cost project analyses when seeking FEMA mitigation grant funding for eligible actions associated with this LHMP Update.

Recognizing the limitations in prioritizing actions from multiple jurisdictions and departments and the regulatory requirement to prioritize by benefit-cost to ensure cost-effectiveness, the HMPC decided to pursue actions that contributed to saving lives and property as first and foremost, with additional consideration given to the benefit-cost aspect of a project. This process drove the development of a determination of a high, medium, or low priority for each mitigation action, and a comprehensive prioritized mitigation action plan for the Sacramento County Planning Area.

## 5.4 Mitigation Action Plan

**Requirement §201.6(c)(3)(iii) and §201.7(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.**

This mitigation action plan was developed to present the recommendations developed by the HMPC for how the Sacramento County Planning Area can reduce the risk and vulnerability of people, property, infrastructure, and natural and cultural resources to future disaster losses. Emphasis was placed on both future and existing development. This mitigation action plan summarizes who is responsible for implementing each of the prioritized actions as well as when and how the actions will be implemented. Each action summary also includes a discussion of the benefit-cost review conducted to meet the regulatory requirements of the Disaster Mitigation Act.

Table 5-7 identifies all mitigation actions for all participating jurisdictions to this LHMP Update. For each mitigation action item included in Table 5-7, a detailed mitigation implementation strategy has been developed. Only those actions where the County is the lead jurisdiction are detailed further in this section. Actions specific to other participating jurisdictions, or where other jurisdictions are taking the lead, are detailed in each respective jurisdictional annex to this Plan.

The mitigation action plan detailed below contains both new action items developed for this LHMP Update as well as old actions that were yet to be completed from the 2016 Plan. Table 5-7 indicates whether the action is new or from the 2016 LHMP and Chapter 2 contains the details for each 2016 mitigation action item indicating whether a given action item has been completed, deleted, or deferred.

As described throughout this LHMP Update, Sacramento County has many risks and vulnerabilities to identified hazards. Although many possible mitigation actions, as detailed in Appendix C, were brainstormed and prioritized during the mitigation strategy meetings, the resulting mitigation strategy presented in this Chapter 5 of this LHMP focuses only on those mitigation actions that are both reasonable and realistic for the community to consider for implementation over the next 5-years covered by this 2021 Update. Thus, only a portion of the actions identified in Appendix C have been carried forward into the mitigation strategy presented in Table 5-7. Although many good ideas were developed during the mitigation action brainstorming process, the reality of determining which priority actions to develop and include in this LHMP Update came down to the actual priorities of communities, individuals and departments based in part on department direction, staffing, and available funding. The overall value of the mitigation action table in Appendix C is that it represents a wide-range of mitigation actions that can be consulted and developed for this LHMP Update during annual plan reviews and the formal 5-year update process.

It is also important to note that Sacramento County and the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as stormwater and drainage plans, flood and water management plans, and capital improvement budgets and reports. These actions are considered to be part of this Plan, and the details, to avoid

duplication, should be referenced in their original source document. The HMPC also realizes that new needs and priorities may arise as a result of a disaster or other circumstances and reserves the right to support new actions, as necessary, as long as they conform to the overall goals of this Plan.

Further, it should be clarified that the actions included in this mitigation strategy are subject to further review and refinement; alternatives analyses; and reprioritization due to funding availability and/or other criteria. The participating communities are not obligated by this document to implement any or all of these projects. Rather this mitigation strategy represents the desires of the community to mitigate the risks and vulnerabilities from identified hazards. The actual selection, prioritization, and implementation of these actions will also be further evaluated in accordance with the mitigation categories and criteria contained in Appendix C.

It should be noted that many of the projects submitted by each jurisdiction in Table 5-7 benefit multiple or all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the public outreach action, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this Plan.



*Table 5-7 Sacramento County Planning Area Mitigation Actions*

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>Sacramento County</b>						
<b>Multi-Hazard Actions</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	Unincorporated Sacramento County	2016 Action	X	X		Prevention
Action 2. Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	Unincorporated Sacramento County	2016 Action	X	X		Public Information
Action 3. County-wide Mass Care and Shelter Plan Update	Unincorporated Sacramento County	New Action	X	X		Emergency Services
Action 4. County-wide Evacuation Annex Update	Unincorporated Sacramento County	New Action	X	X		Emergency Services
Action 5. Evacuation Planning Countywide	Unincorporated Sacramento County	New Action	X	X		Prevention Emergency Services
Action 6. Expand Broadband/Wifi Access	Unincorporated Sacramento County	New Action	X	X		Emergency Services
<b>Climate Change and Pandemic Actions</b>						
Action 7. Implement and improve telecommuting and remote work access for County operations	Unincorporated Sacramento County	New Action	X	X		Prevention
Action 8. Implement the actions contained within the Sacramento County Climate Action/Adaptation Plan	Unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection Public Information Emergency Services
Action 9. Develop and incentivize carbon sequestration plans and programs	Unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 10. Update the Sacramento County Climate Action for carbon neutrality by 2030	Unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Natural Resource Protection
<b>Dam Failure, Earthquake (and liquefaction), Flood: 1%, 0.5%, 0.2% annual chance, Flood: Localized Flood, Levee Failure, Subsidence, and Severe Weather: Heavy Rains and Storms Actions</b>						
Action 11. Bicycle/pedestrian bridge across Discovery Park connecting Garden Highway to the Jibboom Street bridge	Unincorporated Sacramento County	New Action	X	X	X	Prevention Structural Projects Natural Resource Protection Emergency Services
Action 12. Acquire Floodprone Properties	Unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects
Action 13. Maintain and improve railroad embankment levee from south of Freeport to south of Hood, a reach owned by CA Parks Department (Railroad Museum)	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 14. McCormack Williamson flood control weir	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 15. Flood risk mitigation for mobile home and recreational vehicle parks	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects
Action 16. Plan for Public Information (PPI)	Unincorporated Sacramento County	2016 Action	X	X	X	Public Information
Action 17. Mitigation of repetitive loss flood areas and properties	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects
Action 18. Flood risk mapping	Unincorporated Sacramento County	New Action	X	X	X	Prevention
Action 19. Storm Ready	Unincorporated Sacramento County	2016 Action	X	X	X	Prevention Emergency Services

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 20. Alder Creek flood hazard mitigation	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 21. Operational protocol for American River pump stations that are affected by the reoperation of Folsom Dam	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Emergency Services
Action 22. Arcade Creek flood control	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 23. Beach Stone Lakes area flood risk reduction program	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 24. Protect critical facilities from flooding	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Emergency Services
Action 25. Dam Safety (Activity 630)	Unincorporated Sacramento County	New Action	X	X	X	Public Information Emergency Services
Action 26. Flood fighting for Delta legacy communities: Hood, Courtland, Locke, Walnut Grove	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection Emergency Services
Action 27. Implement Delta Small Communities	Unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Emergency Services Public Information
Action 28. Elevate houses to reduce flood risk	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 29. Flood emergency management exercises	Unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
Action 30. Flood evacuation mapping	Unincorporated Sacramento County	2016 Action	X	X	X	Prevention Emergency Services
Action 31. Floodproofing non-residential structures	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects
Action 32. Flood insurance studies (modeling and mapping the special flood hazard area)	Unincorporated Sacramento County	New Action	X	X	X	Prevention
Action 33. Update Hydrology Standards	Unincorporated Sacramento County	2016 Action	X	X	X	Prevention
Action 34. Laguna Creek flood control, modeling, and mapping	Unincorporated Sacramento County	New Action	X	X	X	Prevention
Action 35. Update County GIS aerial photography and LiDAR topography	Unincorporated Sacramento County	New Action	X	X	X	Prevention
Action 36. Maintain and improve Sacramento River levee from south of Freeport to south of Hood, a reach owned and operated by CA DWR Maintenance Area 9	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 37. Use existing Aggregate Mining Pits for Flood Control	Unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 38. Implement Storm Drain Capital Improvement Plan	Unincorporated Sacramento County	2016 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Public Information
Action 39. Woodside Condominiums Flood Risk Reduction	Unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 40. Implement Actions In The Courtland Flood Risk Reduction Plan 2021	Unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Public Information
Action 41. Implement Actions In The Walnut Grove West Flood Risk Reduction Plan 2021	Unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Public Information
Action 42. Implement Actions In The Locke Flood Risk Reduction Plan 2021	Unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Public Information
<b>Drought &amp; Water Shortage, Severe Weather: Extreme Heat, and Wildfire Actions</b>						
Action 43. Reduce the urban heat island effect through the implementation of "cool communities" strategies, including but not limited to, increasing tree plantings, using cool/green roofs and cool/pervious pavements	Unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 44. Defensible Space and Vegetation Management; Development of Areas of Refuge	Unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 45. Wildfire Suppression - Regional Parks and Open Space (urban interface)	Unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 46. Wildfire Fighting - Support	Unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 47. Wildfire Suppression	Unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Natural Resource Protection
<b>Severe Weather: Extreme Cold and Freeze and High Wind and Tornado Actions</b>						
Action 48. Establish Warming Centers with Backup Power	Unincorporated Sacramento County	New Action	X	X		Emergency Services Public Information
<b>City of Citrus Heights</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Citrus Heights	2016 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Citrus Heights	New Action	X	X	X	Public Information
Action 3. Cable Trellis w/ Vines Shading Project	City of Citrus Heights	New Action	X	X	X	Property Protection
Action 4. Trash Racks and Debris Cages Project	City of Citrus Heights	New Action	X	X	X	Property Protection
Action 5. Protection of Transportation Infrastructure Project	City of Citrus Heights	New Action	X	X	X	Property Protection Structural Projects
Action 6. Neighborhood Storm Drain Project	City of Citrus Heights	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 7. Neighborhood Storm Drain Master Plan	City of Citrus Heights	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Public Information

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 8. Storm Drain Inlet Retrofit Project	City of Citrus Heights	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 9. Reduce Citrus Heights extreme heat events and associated hazards by Increase tree planting/canopy preservation/enhancement (this is in general plan) Project	City of Citrus Heights	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 10. Increase pedestrian and bicycle evacuation routes by constructing regional bike/pedestrian trail infrastructure, and expanding connection to neighborhoods (particularly in vulnerable areas) Project	City of Citrus Heights	New Action	X	X		Emergency Services Public Information
Action 11. Interconnected Transportation System Project	City of Citrus Heights	New Action	X	X	X	Emergency Services
Action 12. Critical Facility Generator Project	City of Citrus Heights	New Action	X	X	X	Emergency Services
Action 13. Critical Street Floodproofing Project	City of Citrus Heights	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 14. Creek Maintenance and Restoration Project	City of Citrus Heights	New Action	X	X	X	Property Protection Natural Resource Protection
Action 15. CMP Storm Drain Replacement Project	City of Citrus Heights	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>City of Elk Grove</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Elk Grove	2016 Action	X	X		Prevention

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Elk Grove	New Action	X	X		Public Information
Action 3. Elk Grove Green Street Project: Repurposing Urban Runoff with Green Infrastructure Technologies	City of Elk Grove	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Mutual Aid Agreements	City of Elk Grove	2016 Action	X	X	X	Emergency Service
Action 5. City of Elk Grove's Storm Drainage Master Plan (SDMP)	City of Elk Grove	2016 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 6. Create a Climate-Smart Stormwater Management System	City of Elk Grove	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 7. Implement a Comprehensive and Climate-Smart Green Infrastructure Strategy	City of Elk Grove	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 8. Upgrade the City's Laguna West Levee System to Mitigate Climate-Related Flood Impacts	City of Elk Grove	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 9. Establish a Resilient Pedestrian and Bicycle Infrastructure Network	City of Elk Grove	New Action	X	X		Emergency Services
<b>City of Folsom</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Folsom	2016 Action	X	X		Prevention



Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Folsom	2016 Action	X	X		Public Information
Action 3. Redevelopment Area Drainage Improvements	City of Folsom	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Stormwater Basin Maintenance and Operation Project	City of Folsom	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 5. Stormwater Utility Fee	City of Folsom	2016 Action	X	X	X	Prevention Property Protection
Action 6. Fuel Reduction and Modification	City of Folsom	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 7. Comprehensive Cooling City Strategy	City of Folsom	2016 Action	X	X		Prevention Property Protection
Action 8. Identification and Upgrades to Heating and Cooling Centers	City of Folsom	2016 Action	X	X		Prevention Emergency Services
Action 9. Landscape and Irrigation Modifications	City of Folsom	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 10. Landscape Ordinance and Model Water Efficient Landscape Ordinance Implementation	City of Folsom	New Action	X	X		Prevention
Action 11. Post Disaster Staff Training	City of Folsom	New Action	X	X		Emergency Services
Action 12. Weed Abatement Program	City of Folsom	2016	X	X		Prevention Property Protection Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>City of Galt</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Galt	2016 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Galt	New Action	X	X		Public Information
Action 3. Future Development Projects shall complete a Climate Action Plan Consistency Review Checklist.	City of Galt	New Action	X	X		Prevention
Action 4. Develop a Robust Geographic Based System (GIS) to Geographically Locate Issues/Actions/Mitigation in the City.	City of Galt	New Action	X	X		Prevention
Action 5. Perform Vegetative Control of City Drainages and Channels by Natural Methods	City of Galt	New Action	X	X		Property Protection Natural Resource Protection
Action 6. Continue Work with the Other Groundwater Sustainability Agencies (GSAs) in the Cosumnes Subbasin of the San Joaquin Valley Basin (DWR Basin No. 5-022.16) who are Working Together to Develop a Single Groundwater Sustainability Plan (GSP).	City of Galt	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 7. Increase Resiliency of City Critical Infrastructure and Emergency Operations and against Hazards.	City of Galt	New Action	X	X		Emergency Service
Action 8. Maintain City Drainages, Channels and Open Spaces	City of Galt	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
<b>City of Isleton</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Isleton	2016 Action	X	X		Prevention

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Isleton	New Action	X	X		Public Information
Action 3. Support climate change mitigation laws	City of Isleton	New Action	X	X		Prevention
Action 4. Support drought mitigation laws. Establish RWIP (Redundant Water for Isleton Plan)	City of Isleton	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 5. Levee Reinforcement Projects	City of Isleton	New Action	X	X	X	Property Protection Natural Resource Protection Structural Projects
Action 6. Implement IFIP (Isleton Flood Improvement Plan) and create and activate IFMA (Isleton Flood Management Agency)	City of Isleton	New Action	X	X	X	Prevention Property Protection Natural Resource Protection Structural Projects
Action 8. Activate Emergency Operation Plan (Cooling Center)	City of Isleton	New Action	X	X	X	Emergency Services
Action 9. Storm Water Runoff Rehabilitation Project	City of Isleton	2016 Action	X	X	X	Property Protection Natural Resource Protection Structural Projects
Action 10. Wastewater Treatment Plant Pond Levee Elevation Raise to 200-year Flood Standard	City of Isleton	2016 Action	X	X	X	Property Protection Natural Resource Protection Structural Projects
<b>City of Sacramento</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Sacramento	2016 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Sacramento	New Action	X	X	X	Public Information

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 3. Coordination with Relevant Organizations and Agencies to Consider the Impacts of Urbanization and Climate Change on Long-Term Natural Hazard Safety	City of Sacramento	2016 Action	X	X		Prevention
Action 4. Maintain and Identify Changes in Critical Facilities GIS Layer to Support Emergency Management Efforts	City of Sacramento	2016 Action	X	X	X	Prevention Emergency Services
Action 5. Community Outreach on Multi-Hazard Preparation & Pre-mitigation	City of Sacramento	2016 Action	X	X	X	Public Information
Action 6. Evaluation and Mitigation of Critical Facilities in Identified Hazard Areas	City of Sacramento	2016 Action	X	X	X	Prevention Emergency Services
Action 7. Retrofit of Repetitive Loss Properties	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects
Action 8. Safeguard Essential Communication Services	City of Sacramento	2016 Action	X	X	X	Prevention Emergency Services
Action 9. Multi-lingual Disaster Education	City of Sacramento	2016 Action	X	X	X	Prevention Emergency Services Public Information
Action 10. Cal OES Safety Assessment Program Evaluators	City of Sacramento	2016 Action	X	X	X	Prevention Emergency Services
Action 11. National Flood Insurance Program & Community Rating System Continuation	City of Sacramento	2016 Action	X	X	X	Prevention
Action 12. Develop a Master Generation Plan for Pump Stations	City of Sacramento	2016 Action	X	X	X	Prevention Property Protection
Action 13. Develop a Disaster Housing Plan	City of Sacramento	2016 Action	X	X		Prevention Emergency Services
Action 14. Disaster Resistant Business Program	City of Sacramento	2016 Action	X	X		Prevention Emergency Services
Action 15. Develop Enhanced Emergency Planning for Special Needs Populations in the City of Sacramento Emergency Operations Plan and Other Planning Documents	City of Sacramento	2016 Action	X	X		Prevention Emergency Services

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 16. Establish a Post-Disaster Action Plan	City of Sacramento	2016 Action	X	X		Emergency Services
Action 17. Flood Recovery Plan	City of Sacramento	2016 Action	X	X	X	Emergency Services
Action 18. Public Information Flood Response Plan (Action #18 from 2016)	City of Sacramento	2016 Action	X	X	X	Public Information
Action 19. Construction of a New Emergency Operation Center (EOC) (Action 19 from 2016 plan)	City of Sacramento	2016 Action	X	X		Emergency Services
Action 20. Emergency Operation Center (EOC) Expansion and Information Technology Upgrade (Action 20 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention Emergency Services
Action 21. Protection of Transportation Infrastructure (Action 21 from 2016 plan)	City of Sacramento	2016 Action	X	X		Emergency Services Property Protection Structural Projects
Action 22. Public Education Campaign for Everbridge System (Action 22 from 2016 plan)	City of Sacramento	2016 Action	X	X		Public Information Emergency Services
Action 23. Regional Emergency and Disaster Preparedness Exercises to Test Operational & Emergency Plans (Action 23 from the 2016 plan)	City of Sacramento	2016 Action	X	X		Emergency Services
Action 24. Special Needs and Critical Facilities Database and Advanced Warning System (Action 24 from 2016 plan)	City of Sacramento	2016 Action	X	X	X	Emergency Services Public Information
Action 25. Asset Inventory	City of Sacramento	2016 Action	X	X		Prevention
Action 26. Protection of City Information Technology Infrastructure (Action 27 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention Emergency Services
Action 27. Travel Time Model for Lower American and Sacramento Rivers and their Major Tributaries (Action 29 from 2016 plan)	City of Sacramento	2016 Action	X	X	X	Prevention
Action 28. Watershed Spill Contamination to Drinking Water Quality: Preparedness for Events and Recovery	City of Sacramento	2016 Action	X	X		Prevention Property Protection
Action 29. Purchase Drones for Use in Disaster Preparedness, Mitigation, and Response	City of Sacramento	2016 Action	X	X	X	Emergency Services

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 30. Map and Assess Vulnerability to Sea Level Rise (Action 32 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention
Action 31. Emission Study of City Sump and Pump Stations (Action 33 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention
Action 32. Climate Change Mitigation Actions/Climate Change Adaptation Plan for Drinking Water Quality (Action 34 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention Property Protection
Action 33. Harmful Algal Bloom (HAB) Surveillance and Response Planning (Action 35 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention Property Protection
Action 34. Perform a Groundwater Recharge Feasibility Study (Action 37 from 2016 plan)	City of Sacramento	2016 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 35. Retrofit Historical Buildings	City of Sacramento	2016 Action	X	X		Prevention Property Protection Structural Projects
Action 36. Heating Centers in High Priority Locations	City of Sacramento	2016 Action	X	X		Prevention Emergency Services Public Information
Action 37. Cooling Centers in High Priority Locations	City of Sacramento	2016 Action	X	X		Prevention Emergency Services Public Information
Action 38. Extreme Weather Outreach Strategy	City of Sacramento	2016 Action	X	X		Prevention Emergency Services Public Information
Action 39. Severe Weather Action Plan	City of Sacramento	2016 Action	X	X		Prevention Emergency Services
Action 40. Coordinate with Stakeholder on Proposed Flood Control Project on Magpie Creek	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 41. Adopt Additional Floodplain Development Standards	City of Sacramento	2016 Action	X	X	X	Prevention
Action 42. Drainage Projects for Repetitive Loss Properties	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection
Action 43. Emergency Notification and Evacuation Planning	City of Sacramento	2016 Action	X	X	X	Emergency Services Public Information
Action 44. Historic Magpie Creek	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection
Action 45. Natomas Internal Drainage Canals/Levees	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection
Action 46. Drainage Projects from the City's Priority Drainage Project List	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection
Action 47. Projects Identified in the Combined Sewer System Improvement Plan Update	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Project Natural Resource Protection
Action 48. Easements for Open Land Along Levees	City of Sacramento	2016 Action	X	X	X	Prevention
Action 49. Emergency Management Planning and Levee Security	City of Sacramento	2016 Action	X	X	X	Emergency Services
Action 50. Flood Fighting Equipment	City of Sacramento	2016 Action	X	X	X	Emergency Services
Action 51. Flood Management Land Use Planning and Development	City of Sacramento	2016 Action	X	X	X	Prevention

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 52. Florin Creek Pump at Pomegranate Avenue	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 53. Internal Drainage System Improvements	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 54. Levee and Structural Flood Management Improvements	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 55. Master planning to identify facilities needed to prevent 10-year event street flooding and 100-year event structure flooding	City of Sacramento	2016 Action	X	X	X	Prevention
Action 56. Retrofit Pumping Plans with Discharge Monitoring Devices	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 57. Risk Communication and NFIP/CRS Projects	City of Sacramento	2016 Action	X	X	X	Prevention Public Information
Action 58. Trash Racks and Debris Cages	City of Sacramento	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 59. Multi-Jurisdictional Modeling for Drainage Watersheds Greater than 10 Square Miles	City of Sacramento	2016 Action	X	X	X	Prevention
Action 60. Post-Flood Water Treatment Facility Recovery	City of Sacramento	2016 Action	X	X	X	Emergency Services Property Protection
Action 61. Tree Trimming & Debris Removal	City of Sacramento	2016 Action	X	X		Property Protection Natural Resource Protection



Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 62. Install redundancies and Loop Feeds for Power Lines & Infrastructure	City of Sacramento	2016 Action	X	X		Property Protection
Action 63. Stabilization of Erosion Hazard Areas	City of Sacramento	2016 Action	X	X		Property Protection Structural Projects
Action 64. Implement a Fire Education and Information Program	City of Sacramento	2016 Action	X	X		Prevention Public Information
Action 65. Fuels Reduction on the American River Parkway	City of Sacramento	2016 Action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 66. Outreach on the Effects of Smoke on Air Quality	City of Sacramento	2016 Action	X	X		Public Information
Action 67. Implement 2040 Climate Action and Adaptation Plan	City of Sacramento	New Action	X	X		Property Protection Natural Resource Protection
<b>City of Rancho Cordova</b>						
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	City of Rancho Cordova	2016 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	City of Rancho Cordova	New Action	X	X		Public Information
Action 3. Sunrise Blvd Widening Kiefer to Jackson	City of Rancho Cordova	2016 Action	X	X	X	Property Protection Structural Projects
Action 4. City of Rancho Cordova Disaster Debris Management Plan	City of Rancho Cordova	New Action	X	X		Emergency Services
Action 5. Transportation Interconnectivity	City of Rancho Cordova	2016 Action	X	X		Emergency Services
Action 6. Intergovernmental Agreement between the County of Sacramento and the City of Rancho Cordova	City of Rancho Cordova	2016 Action	X	X		Prevention Emergency Services

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 7. Land Use (Long Range)	City of Rancho Cordova	2016 Action	X	X		Prevention Natural Resource Protection
Action 8. Post disaster training for staff	City of Rancho Cordova	2016 Action	X	X		Emergency Services
Action 9. Update/Maintain Emergency Operation Plans (EOPs)	City of Rancho Cordova	2016 Action	X	X		Emergency Services
Action 10. Increase Everbridge Enrollment	City of Rancho Cordova	2016 Action	X	X		Emergency Services
Action 11. Developing and maintaining a database to track community vulnerability	City of Rancho Cordova	2016 Action	X	X		Prevention Emergency Services
Action 12. Landscape and Irrigation Requirements/Retro	City of Rancho Cordova	2016 Action	X	X		Prevention Public Information
Action 13. Landscape Ordinance and Model Water Efficient Landscape Ordinance Implementation	City of Rancho Cordova	2016 Action	X	X	X	Prevention Natural Resource Protection
Action 14. Restrict Impervious Surfaces in Front Yards	City of Rancho Cordova	2016 Action	X	X	X	Prevention Natural Resource Protection Public Information
Action 15. Porous pavement and vegetative buffers	City of Rancho Cordova	2016 Action	X	X	X	Prevention Property Protection Natural Resource Protection
Action 16. Storm Water Pump Station Generator Purchase and Infrastructure Upgrades	City of Rancho Cordova	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 17. SB-5 Urban Level of Flood Protection	City of Rancho Cordova	2016 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 18. Channel Vegetation Management and Erosion Control Projects	City of Rancho Cordova	2016 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 19. Adoption of Hydromodification and Low Impact Development (LID) Standards	City of Rancho Cordova	2016 Action	X	X	X	Prevention Property Protection Natural Resource Protection
Action 20. Implement Projects in the Stormwater Capital Improvement Program Master Plan	City of Rancho Cordova	2016 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 21. Sunrise Blvd. & Monier Circle Drainage Improvements	City of Rancho Cordova	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 22. Roundabouts	City of Rancho Cordova	2016 Action	X	X		Prevention Property Protection Structural Projects
Action 23. Dam Failure Mitigation and Preparedness for Evacuations	City of Rancho Cordova	New Action	X	X		Property Protection Natural Resource Protection
Action 24. Wildfire Weed Reduction and Resiliency	City of Rancho Cordova	New Action	X	X		Property Protection Natural Resource Protection
<b>American River Flood Control District</b>						
Action 1. Arcade Creek Erosion Repair Project	ARFCD and unincorporated Sacramento County	New Action	X	X	X	Property Protection Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. American River Emergency Rock Revetment Preparedness Stockpile	ARFCD and unincorporated Sacramento County	New Action	X	X	X	Property Protection Natural Resource Protection
Action 3. Highway 160 Bridge Gap Levee Access	ARFCD and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>Citrus Heights Water District</b>						
Action 1. Implement ASR Technology	CHWD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 2. Construction of a New Storage Tank	CHWD and unincorporated Sacramento County	New Action	X	X		Property Protection Structural Projects
Action 3. Construction of a New Operations Building	CHWD and unincorporated Sacramento County	New Action	X	X		Property Protection Structural Projects
<b>Cosumnes Community Services District</b>						
Action 1. Drought Mitigation Planning	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 2. Enhance the District's Public Education, Awareness, and Outreach Program to Include all Hazards of Concern	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 3. Integrate the LHMP into Cosumnes CSD Strategic Plans	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 4. Wildfire Staffing	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 5. Mutual Aid Agreements	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 6. Continue Vegetation Management Program	Cosumnes CSD and unincorporated Sacramento County	New Action	X	X		Prevention
<b>Los Rios Community College</b>						
Action 1. Pandemic Response Plan	Los Rios Community College	New Action	X	X		Prevention Emergency Services
Action 2. Emergency Operations Plan Update	Los Rios Community College	New Action	X	X		Prevention Emergency Services
Action 3. COVID-19 Education/Information Program	Los Rios Community College	New Action	X	X		Prevention Public Information
Action 4. Installing a Microgrid Project, at the Folsom Lake College, El Dorado Center (EDC) in Placerville, CA	Los Rios Community College	New Action	X	X		Prevention Emergency Service
Action 5. Backup Power for Police Dispatch	Los Rios Community College	New Action	X	X		Emergency Services
Action 6. Tree Mitigation – Districtwide	Los Rios Community College	New Action	X	X		Property Protection Natural Resource Protection
<b>RD 800</b>						
Action 1. Reclamation District 800 Emergency Levee Repair Project	RD 800 and unincorporated Sacramento County	2016 Action	X	X		Property Protection Structural Projects Natural Resource Protection
<b>RD 1000</b>						
Action 1. Asset Management Plan Update	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Prevention

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Corporation Yard Improvements	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Waterside Levee Inspection Capability	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Property Protection
Action 4. Pleasant Grove Area Levee Improvements	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 5. Plant 1 Emergency Generator Natural Gas Conversion and Mobile Generators for Plants 2, 3 and 5	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection Emergency Services
Action 6. Plant 8 Improvements	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 7. Expanded SCADA System	RD 1000 and unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Natural Resource Protection
Action 8. Update Emergency Operations Plan and Staffing	RD 1000 and unincorporated Sacramento County	New Action	X	X	X	Emergency Services
<b>Sacramento County Water Agency</b>						
Action 1. Flood Hazard Mitigation	SCWA and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Improve Water Supply Portfolio	SCWA and unincorporated Sacramento County	New Action	X	X		Prevention
Action 3. Seismic Upgrades	SCWA and unincorporated Sacramento County	New Action	X	X		Property Protection Structural Projects Natural Resource Protection
<b>Sac Metro Fire</b>						
Action 1. Finalization and Implementation of Metro Fire's Community Risk Assessment and Associated Community Risk Reduction Plan	SMFD	New Action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection Public Information Emergency Services
Action 2. Evaluation and Implementation of Measures Necessary to Mitigate Fire Stations that Would be Directly Affected by Dam Failure	SMFD	New Action	X	X		Property Protection Structural Projects Emergency Services
Action 3. Modernization/Upgrade all District Facilities to Comply with Essential Services Code Requirements	SMFD	New Action	X	X		Property Protection Structural Projects Emergency Services
Action 4. Community Wildfire Protection Plan (CWPP) – Revision and Implementation of Resulting Changes	SMFD	New Action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection Emergency Services Public Information
Action 5. Relocate the Essential Facilities in the 200 year Floodplain	SMFD	New Action	X	X	X	Property Protection Structural Projects Emergency Services

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>Sacramento Regional Sanitation District</b>						
Action 1. Develop Climate Change Resiliency Plan	Regional San and unincorporated Sacramento County	New Action	X	X		Prevention
Action 2. Replace current equipment with touchless technologies	Regional San and unincorporated Sacramento County	New Action	X	X		Property Protection Structural Projects
Action 3. Complete I&I Study and Develop I&I Policy	Regional San and unincorporated Sacramento County	New Action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Action 4. Regional San Biogeneration Facility	Regional San and unincorporated Sacramento County	New Action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 5. Reduction of Fire Hazard of Regional San Bufferlands	Regional San and unincorporated Sacramento County	2016 Action	X	X		Property Protection Natural Resource Protection
Action 6. Update GHG Emissions Inventory	Regional San and unincorporated Sacramento County	New Action	X	X		Prevention Property Protection
Action 7. Study Telecommute Options and Enhanced Information Technology Needs to Support Workforce	Regional San and unincorporated Sacramento County	New Action	X	X		Prevention
<b>Sacramento Area Sewer District</b>						
Action 1. Flood Control	SASD and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. Pandemic Planning	SASD and unincorporated Sacramento County	New Action	X	X		Prevention



Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>Southgate Recreation and Park District</b>						
Action 1. Drought Mitigation Actions/Drought Contingency Plan	SRPD and unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 2. Flood Mitigation Actions/Land Acquisition	SRPD and unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Structural Projects
Action 3. Conservation Easements	SRPD and unincorporated Sacramento County	2016 Action	X	X		Prevention
Action 4. Multi-jurisdictional Cooperation within Watersheds	SRPD and unincorporated Sacramento County	2016 Action	X	X		Prevention
Action 5. Storm Water Management Practices – Implement Storm Water Management Practices as identified in Stormwater Quality Design Manual	SRPD and unincorporated Sacramento County	2016 Action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Action 6. Severe Weather: Heavy Rains and Storms Mitigation Actions/Tree Management	SRPD and unincorporated Sacramento County	2016 Action	X	X		Property Protection Natural Resource Protection
Action 7. Integrate Local Hazard Mitigation Plan into District Master Plan	SRPD and unincorporated Sacramento County	New Action	X	X		Prevention
Action 8. Covid-19 Response Plan	SRPD and unincorporated Sacramento County	New Action	X	X		Emergency Services
<b>Twin Rivers School District</b>						
Action 1. Reduce Risks to Property and Life due to Earthquake	TRSD	New Action	X	X		Property Protection Structural Projects
Action 2. Reduce Risk to Flooding of Northern Area Schools	TRSD	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 3. Stormdrain Upgrades/Revise and Update Districtwide Stormwater Prevention Plan	TRSD	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 4. Prevent Loss of Life or Injury due to Extreme Heat	TRSD	New Action	X	X		Prevention Emergency Services
Action 5. Evacuation for Heavy Rains, Storms, Winds, and ALL Hazards	TRSD	New Action	X	X		Emergency Services
Action 6. Trees Trimmed/ Vegetation Removed to Minimize Impact During Fire Season	TRSD	New Action	X	X		Property Protection Natural Resource Protection
<b>BALMD</b>						
Action 1. 2016 Sacramento County Flood Safety Plan (by GEI) and subsequent updating in 2021.	BALMD, RD 317, RD 407, RD 2067	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Emergency Services Public Information
Action 2. Regional Flood Management Plan Projects	BALMD, RD 317, RD 407, RD 2067	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Emergency Services Public Information
Action 3. Small Communities Plans – Flood Protection – Structural and Nonstructural Mitigation	BALMD, RD 317, RD 407, RD 2067	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection Emergency Services Public Information

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 4. 2021 Emergency Operations Plan (EOP) – Currently in development	BALMD, RD 317, RD 407, RD 2067	New Action	X	X	X	Prevention Emergency Services
<b>RD 3</b>						
Action 1. 2017 and 2019 Storm Event Waterside Erosion Repairs	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. FSRP Critical Erosion Repair	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Steamboat Slough Seepage Repairs	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Interior Drainage Improvements	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 5. Relief Cut Plan	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 6. Implement recommendations in West Walnut Grove Flood Risk Reduction Plan	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 7. Addressing Unacceptable Items in the District's USACE Periodic Inspection Report	RD 3 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>RD 341</b>						
Action 1. San Joaquin River Multi-Benefit Project	RD 341 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>RD 349</b>						
Action 1. 2017 and 2019 Storm Event Waterside Erosion Repairs	RD 349 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. Interior Drainage Improvements	RD 349 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Addressing Unacceptable Items in the District's USACE Periodic Inspection Report	RD 349 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Relief Cut Plan	RD 349 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>RD 369</b>						
Action 1. Backup Power Project	RD 369 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services Property Protection
Action 2. Flood Safety Plan Updates, Training, and Exercises	RD 369 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services Public Outreach
Action 3. Small Communities Plans - flood protection - structural and nonstructural mitigation	RD 369 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
<b>RD 551</b>						
Action 1. 2017 and 2019 Storm Event Waterside Erosion Repairs	RD 551 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. FSRP Critical Seepage Repair	RD 551 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Addressing Unacceptable Items in the District's USACE Periodic Inspection Report	RD 551 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Interior Drainage Improvements	RD 551 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 5. Implement recommendations in Courtland Flood Risk Reduction Plan	RD 551 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>RD 554</b>						
Action 1. Small Communities Plans – Flood Protection – Structural and Nonstructural Mitigation	RD 554	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. Disadvantaged Community Projects and subsequent updating in 2021.	RD 554	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 3. 2016 Sacramento County Flood Safety Plan (by GEI) and subsequent updating in 2021.	RD 554	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. 2021 Emergency Operations Plan (EOP) – Currently in development	RD 554	New Action	X	X	X	Prevention Emergency Services
Action 5. Regional Flood Management Plan Projects	RD 554	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>RD 556</b>						
Action 1. 2021 Emergency Operations Plan (EOP) – Currently in development	RD 556	New Action	X	X	X	Prevention Emergency Services
Action 2. 2016 Sacramento County Flood Safety Plan (by GEI) and subsequent updating in 2021.	RD 556	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Regional Flood Management Plan Projects	RD 556	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
<b>RD 563</b>						
Action 1. Rock Slope Protection Project	RD 563 and unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. Levee Geometry Levee Improvement Project	RD 563 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 3. Levee Failure Repair Project	RD 563 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Levee Seepage Repair Project	RD 563 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 5. Backup Power Generator Project	RD 563 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
Action 6. Flood Exercise and Emergency Operations Plan Update	RD 563 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
<b>RD 1002</b>						
Action 1. Regional Flood Management Plan Projects	RD 1002 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. 2016 Sacramento County Flood Safety Plan (by GEI) and subsequent updating in 2021.	RD 1002 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. 2021 Emergency Operations Plan (EOP) – Currently in development	RD 1002 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
<b>RD 1601</b>						
Action 1. Levee Improvement Project	RD 1601 and unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Rock Slope Protection Project	RD 1601 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. San Joaquin River Setback Levee	RD 1601 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Backup Power Project	RD 1601 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
Action 5. Flood Safety Plan Updates, Training, and Exercises	RD 1601 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
<b>RD 2111</b>						
Action 1. Rock Slope Protection Project	RD 2111 and unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 2. Levee Improvement Projects	RD 2111 and unincorporated Sacramento County	2016 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 3. Overflow Weir Project	RD 2111 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 4. Syphon Project	RD 2111 and unincorporated Sacramento County	New Action	X	X	X	Property Protection Structural Projects Natural Resource Protection



Action Title	Jurisdictions Benefitting from Action (s)	New Action/ 2016 Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 5. Backup Power Project	RD 2111 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services
Action 6. Flood Safety Plan Updates, Training, and Exercises	RD 2111 and unincorporated Sacramento County	New Action	X	X	X	Prevention Emergency Services

## *Multi-Hazard Actions*

### *Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan*

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**Hazards Addressed:** Multi-hazard (Aquatic Invasive Species, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 1%/0.5%/0.2% annual chance, Floods: Localized Stormwater, Levee Failure, Pandemic, Severe Weather: Extreme Cold and Freeze, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Wildfire)

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (Assembly Bill (AB) 2140).

**Project Description:** Specifically, this section requires that each applicable jurisdiction adopt a local hazard mitigation plan (LHMP) in accordance with the federal Disaster Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

**Other Alternatives:** No action

**Existing Planning Mechanisms through which Action will be Implemented:** Safety Element of General Plan

**Responsible Office/Partners:** Sacramento County Planning Department and planning departments for each incorporated jurisdiction.

**Cost Estimate:** Jurisdictional board/staff time

**Participating Jurisdictions:** County and incorporated cities.

**Benefits (avoided Losses):** Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

**Potential Funding:** Local budgets

**Timeline:** 2021-2026

**Project Priority:** High

### *Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness*

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**Hazards Addressed:** Multi-hazard (Agricultural Hazards: Severe Weather/Insect/Pests, Aquatic Invasive Species, Avalanche, Climate Change, Dam Failure, Drought & Water shortage, Earthquake, Floods: 100/500 year, Floods: Localized Stormwater, Landslide, Mudslide, and Debris Flow, Levee Failure,

Pandemic Severe Weather: Extreme Heat, Severe Weather: Heavy Rain and Storms, Severe Weather: Wind and Tornado, Severe Weather: Winter Storm and Freeze, and Wildfire)

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Sacramento County plays a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

**Project Description:** A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The County will work with other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

**Other Alternatives:** Continue public information activities currently in place.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Existing County outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

**Responsible Office/Partners:** Sacramento County, incorporated communities, and other jurisdictions

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

**Cost Estimate:** Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

**Benefits (Losses Avoided):** Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

**Potential Funding:** Local budgets, grant funds

**Timeline:** Ongoing/Annual public awareness campaign

### **Action 3. County-wide Mass Care and Shelter Plan Update**

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**Hazards Addressed:** Multi-hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The current Mass Care & Shelter Plan was published in 2012 and is sorely out of date and does not include lessons learned from the COVID-19 pandemic (PPE, non-congregate sheltering, feeding, etc.). Regulations, guidance and training requirements from the National to local level have changed significantly in the last nine years and needs to be captured and incorporated into County emergency mass care and sheltering operations. Lastly, several organizations listed in the current Plan no longer exist as they are portrayed in the Plan.

**Project Description:** Update the Mass Care and Shelter Plan memorializing Mass Care and Shelter activities that took place in response to the 2020 California wildfires and Novel Coronavirus 2019 (COVID-19). The project description includes:

- Updates to the 2012 Mass Care and Shelter Plan according to the latest available Federal, State and Local guidance and lessons learned from COVID-19 and wildfires
- Memorialize procedures and requirements for non-congregate sheltering and any other issues in managing sheltering in a social distancing environment
- Identify all of the non-congregate shelter facilities within Sacramento County; prioritize based on various factors including cost, access, flood plain, regional capacity, etc.
- Create a contact list of all non-congregate shelter options for future contract needs

**Other Alternatives:** Continue using current Mass Care & Shelter Plan and coordinate with agencies (as time permits) in order to update plans and procedures. Most mass care & shelter operations would be handled by OES, ARC and DHA adjusting procedures on the fly; with ad-hoc coordination with partnering agencies. This alternative is far less efficient and could cost lives.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Contract with competitively selected vendor to coordinate with all affected organizations throughout the County of Sacramento to create a straightforward Mass Care & Shelter annex with up-to-date information in order to make critical, real-time decisions.

**Responsible Agency/ Department/Partners:** Sac Co OES, PER, DHA, DHS, Jurisdictions' OES, Utilities, SacRT, Paratransit, ARC, VOAD

**Cost Estimate:** \$30,000

**Benefits (Losses Avoided):** The benefits of updating our Mass Care & Shelter Plan are four-fold. It will:

- Capture the latest available Federal, State and Local guidance and lessons learned from COVID-19 and wildfires
- Memorialize procedures and requirements for non-congregate sheltering and any other issues in managing sheltering in a social distancing environment
- Identify all of the non-congregate shelter facilities within Sacramento County

- Provide a prioritize shelter list based on various factors including cost, access, flood plain, regional capacity, etc.

Having this information in the Plan in a consolidated and easy to reference manner will help all organizations understand their roles/responsibilities and which other support agencies and contacts are available. This update will also allow us to have at the ready, a complete and prioritized listing of all temporary evacuation points and shelter facilities within each zone in the County (to include 24/7 contact information). Having this information at our fingertips will save precious time and allow us to focus on caring for and sheltering our population; thus saving lives.

**Potential Funding:** FEMA and other available grants. Local, state funding.

**Timeline:** 3 years (recurring)

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

#### *Action 4. County-wide Evacuation Annex Update*

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**Hazards Addressed:** Multi-hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The current Evacuation Annex is three years old and minimally mentions the access and functional needs community, and includes little operational information with regards to services, locations and resources available or that would be requested in an evacuation. Also, there is no public campaign associated with our current Annex to help education the population in order for them to help themselves and relieve some of the burden on first responders. Finally, the current plan does not include demographic information (English as second language, vehicle ownership, medically fragile, etc.) in order to be able to pre-plan resources based on the zone evacuated.

**Project Description:** Update the Sacramento County Evacuation Plan and associated appendices. Memorialize lessons learned during evacuations and patient movement activities that took place in response to the Novel Coronavirus 2019 (COVID-19) and 2020 California wildfires. Project Description includes:

- Update the 2018 Evacuation Plan and associated appendices
- Identify all potential Temporary Evacuation Points (aka Evacuation Transfer Points) within Sacramento County; prioritize based on various factors including cost, access, flood plain, regional capacity, etc.
- Identify non-congregate sheltering within each zone, and determine travel distance, road capacity, and time from one zone to another
- Create numeric evacuation zones, as sub-sets of the Sheriff Patrol Districts; to include, mapping available cell towers (for pre-identified WEA polygons) and provide calculations on the number of people and the logistical support needed per zone per day
- Identify and create shapefiles for each of the zones to be loaded onto the emergency web pages and other operational software/systems
- Develop a “Know your Zone” campaign
- Translation of evacuation messages into the top 4 identified languages within the County
- Estimate the number of people in each “evacuation zone” and calculate the needs for food (to include cultural/dietary suggestions), water, etc.

**Other Alternatives:** Continue using current Evacuation Annex and coordinate with agencies (as time permits) in order to update plans and procedures. Much of the evacuation operations would be handled by the Sheriff’s Office, possibly “writing procedures” in real-time; with ad-hoc coordination with partnering agencies. This alternative is far less efficient and could cost lives.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Contract with competitively selected vendor to coordinate with all affected organizations throughout the County of Sacramento to create a straightforward evacuation annex with pertinent information in order to make critical, real-time decisions.

**Responsible Agency/ Department/Partners:** Sac Co OES, PER, SacDOT, Jurisdictions’ OES, CHP, Utilities, SacRT, Paratransit, VOAD, ARC

**Cost Estimate:** \$95,000

**Benefits (Losses Avoided):** An Evacuation Annex that is coordinated with all responding agencies, partner organizations and local jurisdictions that defines evacuation zones, routes, evacuation points, zone demographics, and zone population will ensure highly efficient and effective evacuation operations when the time comes. This Annex will synchronize with local evacuation plans/routes to ensure a smooth transition to/through zones and jurisdictions. This annex will also include a “Know Your Zone” campaign to educate the population about their particular zone (routes, meeting points, etc.).

**Potential Funding:** FEMA and other available grants. Local, state funding.

**Timeline:** 3 years (recurring)

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

*Action 5. Evacuation Planning Countywide*

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**Hazards Addressed:** Multi-hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Sacramento’s unique geography and riverine systems make evacuation difficult and constrained by bridges and other elements. Refining the evacuation zones are necessary to study and identify corridors for improvement and/or provide identification of areas where rapid or early evacuation may be necessary.

**Project Description:** The evacuation zone mapping and hazard threat assessment will help in the county’s compliance with SD 99 and AB 747 regarding evacuation corridor capacity and multiple community egress. Once the elements are studied, they may be applied to zone mapping criteria. Following mapping, an awareness campaign to inform residents of their relative risk and familiarize them with their zones and primary routes of travel will be necessary. The software that would be used is Zonehaven or similar GIS based product that can integrate with the county’s alerting system.

**Other Alternatives:** Increase capacity of corridors used for evacuation.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Emergency Operations Plan, Evacuation Annex, SACOG corridor capacity studies, MARAC Region IV Evacuation Guidelines

**Responsible Agency/ Department/Partners:** Sacramento County OES

**Cost Estimate:** \$2 million

**Benefits (Losses Avoided):** Improvements to corridors and/or capacities to evacuate greater numbers of people. Improvement to the resiliency of corridors to allow more of the community to shelter-in-place for certain disaster types

**Potential Funding:** Roadway improvement, capital project funding

**Timeline:** Within 5 years

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

*Action 6. Expand Broadband/Wifi Access*

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**Hazards Addressed:** Multi-hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The COVID-19 Pandemic has brought to light disparities in access to broadband and Wi-Fi within communities.

**Project Description:** Wifi and broadband access would be distributed at county park facilities. The installation of additional towers in the Sacramento-San Joaquin Delta would address existing coverage gaps that disadvantage that community from receiving timely safety information.

**Other Alternatives:** Partner with companies installing 5G and explore additional wireless alternatives.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Agency/ Department/Partners:** Sacramento County OES

**Cost Estimate:** \$4 million

**Benefits (Losses Avoided):** Improvements to areas of the county without adequate coverage. This will foster more rapid technology that uses automated alert and warning such as Shake Alert, Alert Notifications, Levee Failure and Flash Flood Warnings or other sensor technologies used to study conditions for potential future mitigation or provide warning.

**Potential Funding:** FEMA, Cal OES, and other grant sources.

**Timeline:** Within 5 years

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



## *Climate Change and Pandemic Actions*

### *Action 7. Implement and improve telecommuting and remote work access for County operations*

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**Hazards Addressed:** Climate Change, Pandemic

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The COVID-19 pandemic created a nationwide work-from-home program virtually overnight. The County, like many organizations, was technologically unprepared for this shift, lacking high-speed broadband access, computer hardware, backbone infrastructure, and software solutions to allow employees to work-from-home. The shift to remote work resulted in significant, measurable decreases in traffic, air pollution, and greenhouse gas (GHG) emissions. The ability to work remotely, whether from home or alternative work locations, has proven feasible, and will remain as a component of business and government operations. This shift to remote work provides one method to prevent the reemergence of COVID-19 or other communicable diseases in the workplace. It also assists in achieving the reductions in Vehicle Miles Traveled (VMT) necessary to reduce the effects of climate change. Climate change has been identified as a public health threat and national security risk. Therefore, it is becoming increasingly apparent that the ability to remotely work and decentralize government operations will provide lasting public health, climate, and national security benefits.

**Project Description:** This project could include high-speed broadband access, computer hardware, backbone infrastructure, and software solutions.

**Other Alternatives:** Return to the pre-COVID model of centralized government operations.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** This action could be implemented through changes to internal County policies such as information technology, purchasing, and capital improvements. The action would also be coordinated with labor organizations and their agreements. This action is consistent with and supportive of measures and policies in the County Climate Action/Adaptation Plan.

The action would dovetail with existing programs such as the State Homeland Security Program (SHSP) and the Urban Area Security Initiative (UASI).

**Responsible Agency/ Department/Partners:** OCE, DTECH, DPS, SacOES, PER, DGS

**Cost Estimate:** \$10,000 to \$1,000,000

**Benefits (Losses Avoided):** This action would result in reduced public health risk from communicable disease and would reduce the effects of climate change through the reduction of GHG emissions associated with employee commute trips. This action has the added co-benefit of supporting dispersed personnel and decentralized infrastructure and services; thus making the community more resilient to natural or man-made disasters by minimizing the target footprint and assuring a pathway for continuity of operations.

**Potential Funding:** FEMA hazard mitigation program. Local, state and private funding. Other grants, incentives, and donations, including in-kind services.

**Timeline:** 1-3 years

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

*Action 8. Implement the actions contained within the Sacramento County Climate Action/Adaptation Plan*

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**Hazards Addressed:** Climate Change, Multi-Hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** In recent decades, human activities (e.g., burning of fossil fuels for transportation and energy, increasing rates of deforestation and development) have contributed to elevated atmospheric greenhouse gas (GHG) concentrations. Human-caused emissions of GHGs above natural ambient concentrations are responsible for intensifying the greenhouse effect, leading to a trend of unnatural warming of the Earth’s climate, known as global climate change, or global warming. Global climate change has a number of adverse effects on natural resources and the human population. These include:

- rising sea levels due to thermal expansion of ocean water and melting of polar ice caps and sea ice, which can inundate low-lying areas exposed to tidal action and increase the severity of flooding risk;
- changes in the timing, severity, and amounts of rainfall and snowfall, leading to changes and greater variability in wet and dry periods that will affect water supply and flood risk;
- increased stress to vegetation and terrestrial and aquatic habitats, leading to adverse effects on biological resources and sensitive species;
- changes in the frequency and duration of heat waves and droughts, which can affect human populations and community infrastructure; and
- increases in wildfire hazards.

Over the long term, these changes create the potential for a wide variety of secondary consequences, including human health and safety risks, economic disruptions, diminished water supply, shifts in ecosystem function and habitat qualities, and difficulties with provision of basic services.

Addressing climate change requires an integrated approach, or plan, that targets both the sources and the potential effects of climate change.

**Project Description:** This project would include the implementation of the GHG reduction measures and adaptation strategies contained within Sacramento County’s Climate Action Plan(s) and Vulnerability Assessment(s). Projects could include the following: revisions to adopted plans and codes, creation of new programs, incentives, education and outreach, demonstration projects, capital improvements, land acquisition, and carbon sequestration projects.

**Other Alternatives:** Address climate impacts on a singular basis through each individual hazard such as increased flooding, drought, wildfires, extreme weather, increased heat events, and critical infrastructure vulnerabilities.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Updates to the General Plan, Zoning Code, Design Guidelines, Building Code, Stormwater Design, and County Code. Changes to internal County policies such as purchasing, capital improvements, and fleets. Negotiation of labor agreements.

**Responsible Agency/ Department/Partners:** PER, DWR, SacDOT, SacOES, BP&I, DGS, SMUD, Regional Parks, SMAQMD, non-governmental and community-based organizations.

**Cost Estimate:** Varies depending on project size and scope. Order of magnitude of tens to hundreds of thousands of dollars most common.

**Benefits (Losses Avoided):** Because climate change exacerbates most other hazards, the benefits of this mitigation action include those associated with most other mitigation actions in this annex. Additionally, the centralized and coordinated all-hazards approach of addressing climate change through this mitigation action will provide economies of scale, multiple co-benefits, and the policy and legal framework to assure that climate adaptation, resiliency, and meaningful greenhouse gas (GHG) reductions occur.

**Potential Funding:** FEMA hazard mitigation program. Local, state and private funding. Other grants, incentives, and donations, including in-kind services.

**Timeline:** 1-5 years

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

***Action 9. Develop and incentivize carbon sequestration plans and programs***

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**Hazards Addressed:** Climate Change

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** In recent decades, human activities (e.g., burning of fossil fuels for transportation and energy, increasing rates of deforestation and development) have contributed to elevated atmospheric greenhouse gas (GHG) concentrations. Human-caused emissions of GHGs above natural ambient concentrations are responsible for intensifying the greenhouse effect, leading to a trend of unnatural warming of the Earth's climate, known as global climate change, or global warming. Global climate change has a number of adverse effects on natural resources and the human population. These include:

- rising sea levels due to thermal expansion of ocean water and melting of polar ice caps and sea ice, which can inundate low-lying areas exposed to tidal action and increase the severity of flooding risk;
- changes in the timing, severity, and amounts of rainfall and snowfall, leading to changes and greater variability in wet and dry periods that will affect water supply and flood risk;
- increased stress to vegetation and terrestrial and aquatic habitats, leading to adverse effects on biological resources and sensitive species;
- changes in the frequency and duration of heat waves and droughts, which can affect human populations and community infrastructure; and
- increases in wildfire hazards.

Over the long term, these changes create the potential for a wide variety of secondary consequences, including human health and safety risks, economic disruptions, diminished water supply, shifts in ecosystem function and habitat qualities, and difficulties with provision of basic services.

The sequestration of carbon dioxide from the atmosphere combined with robust reductions in the emissions of GHGs is an accepted method to address climate change. Carbon sequestration can best be achieved by focusing on habitat preservation, increasing the urban forest and connected open space, and carbon farming.

**Project Description:** This project would include the implementation of various sequestration projects including open space land acquisition and management, carbon farming education and pilot programs, incentives, and investment in new sequestration technology. This program may be coordinated with industry groups and non-profits.

**Other Alternatives:** Address climate impacts on a singular basis through each individual hazard such as increased flooding, drought, wildfires, extreme weather, increased heat events, and critical infrastructure vulnerabilities.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Climate Action Plan and updates to the General Plan and Zoning Code. University of California (UC) Agricultural Extension Cooperative Agreements.

**Responsible Agency/ Department/Partners:** PER, Regional Parks, SMAQMD, non-governmental and community-based organizations, SMUD, Agricultural Commissioner, Farm Bureau, Cattlemen's Association, Nature Conservancy, Sacramento Valley Conservancy.

**Cost Estimate:** Varies depending on project size and scope. Order of magnitude of tens to hundreds of thousands of dollars most common.

**Benefits (Losses Avoided):** Because climate change exacerbates most other hazards, the benefits of this mitigation action include those associated with most other mitigation actions in this annex. Additionally, the centralized and coordinated all-hazards approach of addressing climate change through this mitigation action will provide economies of scale, multiple co-benefits, and the policy and legal framework to assure that climate adaptation, resiliency, and meaningful greenhouse gas (GHG) reductions occur.

**Potential Funding:** FEMA hazard mitigation program. Local, state and private funding. Other grants, incentives, and donations, including in-kind services.

**Timeline:** 1-5 years

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

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**Action 10.**     *Update the Sacramento County Climate Action for carbon neutrality by 2030*

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**Hazards Addressed:** Climate Change, Multi-Hazard

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** In recent decades, human activities (e.g., burning of fossil fuels for transportation and energy, increasing rates of deforestation and development) have contributed to elevated atmospheric greenhouse gas (GHG) concentrations. Human-caused emissions of GHGs above natural ambient concentrations are responsible for intensifying the greenhouse effect, leading to a trend of unnatural warming of the Earth’s climate, known as global climate change, or global warming. Global climate change has a number of adverse effects on natural resources and the human population. These include:

- rising sea levels due to thermal expansion of ocean water and melting of polar ice caps and sea ice, which can inundate low-lying areas exposed to tidal action and increase the severity of flooding risk;
- changes in the timing, severity, and amounts of rainfall and snowfall, leading to changes and greater variability in wet and dry periods that will affect water supply and flood risk;
- increased stress to vegetation and terrestrial and aquatic habitats, leading to adverse effects on biological resources and sensitive species;
- changes in the frequency and duration of heat waves and droughts, which can affect human populations and community infrastructure; and
- increases in wildfire hazards.

Over the long term, these changes create the potential for a wide variety of secondary consequences, including human health and safety risks, economic disruptions, diminished water supply, shifts in ecosystem function and habitat qualities, and difficulties with provision of basic services.

Addressing climate change requires an integrated approach, or plan, that targets both the sources and the potential effects of climate change.

On December 16, 2020, the Sacramento County Board of Supervisors adopted a resolution declaring a climate change emergency. The resolution requires urgent and immediate mobilization of public and private resources to develop and implement a climate action plan that identifies and integrates current and future actions necessary to achieve an equitable, sustainable, and resilient economy and transition to a countywide carbon neutrality footprint by 2030.

**Project Description:** Pursuant to the County's adopted climate emergency resolution, this project would include an update to the Climate Action Plan and associated elements of the County General Plan to update GHG forecasts, GHG reduction measures, and policies to achieve carbon neutrality by 2030.

**Other Alternatives:** Do not update the climate action plan and/or achieve and document carbon neutrality through other means.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** The project would most likely be implemented through a concurrent update to the General Plan. It could also include: revisions to the Zoning Code, Design Guidelines, Building Code, Stormwater Design, and County Code; changes to internal County policies, such as purchasing, capital improvements, and fleets; and negotiation of labor agreements. Another planning mechanism could be through adoption of an annex to the County Emergency Operations Plan.

**Responsible Agency/ Department/Partners:** PER in collaboration with DWR, SacDOT, SacOES, BP&I, DGS, SMUD, Regional Parks, SMAQMD, non-governmental and community-based organizations.

**Cost Estimate:** \$500,000

**Benefits (Losses Avoided):** The release of atmospheric carbon dioxide is a major contributing factor to climate change. Because climate change exacerbates hazards, the benefits of this mitigation action include those associated with most other mitigation actions in this annex. Establishing carbon neutrality, would assure that no more carbon is released than is sequestered, and that the impacts associated with climate change will be reduced.

**Potential Funding:** FEMA hazard mitigation program. Local, state and private funding. Other grants, incentives, and donations, including in-kind services.

**Timeline:** 3-5 years

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

*Dam Failure, Flood: 1%, 0.5%, 0.2% annual chance, Flood: Localized Flood, Levee Failure, Subsidence, and Severe Weather: Heavy Rains and Storms Actions*

*Action 11. Bicycle/pedestrian bridge across Discovery Park connecting Garden Highway to the Jibboom Street bridge*

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**Hazards Addressed:** Flood, Earthquake, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The Natomas Basin has a high risk of flooding and is bordered by Interstate 5, Highway 80, canals, and the Sacramento and American Rivers. These features provide barriers to the safe and efficient evacuation of pedestrians and bicycles from the Basin during a flood. Originally, the Jibboom Street Bridge crossed the American River from the south and connected to the Garden Highway. The Jibboom Street bridge now drops into Discovery Park, which is designed to flood every winter during high water events thus preventing people in Natomas from accessing the bridge. During these high water events, bicyclists are allowed to use the shoulder of the Interstate 5 bridge to cross the American River. This situation is potentially unsafe and leads to a high level of traffic stress for users. The level of stress would be exacerbated during a mass evacuation event and the risk of an accident would increase, which would then limit the bridge's effectiveness in moving people out of harm's way.

**Project Description:** This project would utilize the existing right-of-way (ROW) to connect the bike trail that runs along the portion of the Garden Highway in Natomas, west of Interstate 5, through Discovery Park to the Jibboom Street Bridge and increase connectivity for all modes of transportation into and out of the Natomas Basin.

**Other Alternatives:**

- Expand/modify the existing Interstate 5 bridge over the American River to include bicycle/pedestrian areas to allow for safe and convenient crossings.
- Build the Green Line light rail extension bridge over the American River including bicycle/pedestrian areas to allow for safe and convenient crossings.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Updates to the American River Parkway Plan, Bicycle Master Plan (or Active Transportation Plan), and Capital Improvement Plan (CIP) budgeting process.

**Responsible Agency/ Department/Partners:** SacDOT, Regional Parks, PER, City of Sacramento, SacOES

**Cost Estimate:** \$1-10 million

**Benefits (Losses Avoided):** This project would help avoid the loss of human life during a flood in the Natomas Basin by providing a safe and secure evacuation route for bicycles and pedestrians. It would also provide an accessory point of ingress/egress to the Natomas Basin in the event the Interstate 5 bridge over the American River was compromised. A co-benefit by providing year-round bicycle and pedestrian

connections across the American River, is that Vehicle Miles Traveled (VMT) would be reduced, which would reduce greenhouse gas (GHG) emissions. Reducing GHG emissions will reduce the impacts of climate change and thereby reduce the other hazards exacerbated by climate change.

**Potential Funding:** FEMA hazard mitigation program. local, state and private funding. SACOG and other grants, Natomas Basin development fees, incentives, and donations, including in-kind services.

**Timeline:** 5 years

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

***Action 12. Acquire Floodprone Properties***

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**Hazard(s) Addressed:** Flood, Levee Failure

**Issue/Background:** Acquisition in lieu of elevation or other mitigation measure could be applicable when there is a structure at risk of flooding in an area that would be suitable for long term ownership by a public agency.

**Project Description:** Appraisal, agreement, acquisition, demolition, deed restriction

**Other Alternatives:** Flood control, flood-proofing, structure elevation

**Existing Planning Mechanism(s) through which Actions will be Implemented:** various park and parkway plans and open space plans

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$400,000 to \$2,000,000(+) per property, depending on appraised value and project benefit

**Benefits (Losses Avoided):** life safety, elimination of flood damage because the structure is gone

**Potential Funding:** various FEMA grants, park grants, clean water grants

**Timeline:** 5 years

**Project priorities (High, Medium, Low):** Medium

***Action 13. Maintain and improve railroad embankment levee from south of Freeport to south of Hood, a reach owned by CA Parks Department (Railroad Museum)***

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**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5



**Issue/Background:** The abandoned railroad line from Freeport to south of Hood is an embankment separating Beach Stone Lakes floodplain from the area to the west toward the Sacramento River. The railroad right of way is owned by the CA Parks Department associated with the Railroad Museum. It also is the secondary protection should the Sacramento River levee fail, which is owned and maintained by the CA DWR Maintenance Area 9.

**Project Description:** The long term plan by the state of California is not understood by the local community. This railroad embankment acts like a levee but needs repair and improvement.

**Other Alternatives:** An analysis of project alternatives should be developed.

**Existing Planning Mechanism(s) through which Actions will be implemented:** County flood planning.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$20,000,000

**Benefits (losses avoided):** When the Beach Stone Lakes floodplain is high, failure of this railroad could allow floodwater from east to west damaging areas including the historic town of Hood.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 2 to 5 years

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

***Action 14. McCormack Williamson flood control weir***

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**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Local flooding occurs in the Beach Stone Lakes and Franklin Pond area, building up against the levees that surround the McCormack Williamson Tract (Reclamation District 2110) until the levee breaks as recently occurred in 2017. The solution is to construct a permanent weir at the northeast end of the tract.

**Project Description:** California Department of Water Resources intends to construct a weir that will reduce the risk of sudden levee failure, thereby reducing flood damage upstream and downstream of the McCormack Williamson Tract.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** The environmental impact report was circulated years ago, there will be a supplemental report in 2021.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section.

**Cost Estimate:** \$30,000,000

**Benefits (losses avoided):** \$millions if a levee were to break due to the sudden surge of water associated with a breach at McCormack Williamson Tract.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

**Project Priority (H, M, L):** High

***Action 15. Flood risk mitigation for Mobile Home and Recreational Vehicle Parks***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Mobile home Parks and RV Parks are licensed by the State of California, the parks are grandfathered into the Code of Federal Regulations requiring the floors to be 3 feet high regardless of actual flood risk.

**Project Description:** Flood risk reduction, flood warning systems, evacuation procedures

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** County flood planning.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$200,000 to develop risk map products for the properties

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** Within 5 years

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

***Action 16. Plan for Public Information (PPI)***

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**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The FEMA Community Rating System describes best practices and rewards NFIP communities who have a PPI

**Project Description:** Keeping the Program for Public Information (PPI) current and annually implementing the program is important to the community's awareness and preparedness in case of flood but it also provides other important information such as mitigation measures, building restrictions and storm water regulations

**Other Alternatives:** Delay or omit informational outreach, but that would not be appropriate

**Existing Planning Mechanism(s) through which Actions will be implemented:** The FEMA Community Rating System is a very good guide to PPI.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section.

**Cost Estimate:** \$80,000 per year

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Annual

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

***Action 17. Mitigation of repetitive loss flood areas and properties***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** When a structure floods twice in ten years it is deemed a repetitive loss property and there should be additional effort applied to mitigating the flood hazard at that property, of course, subject to a willing property owner. Where one structure is listed as repetitive loss by FEMA, there are often more who happened to not have insurance or for other reasons were not listed, thus the community maps repetitive loss areas.

**Project Description:** Map repetitive flood loss areas, discover the cause of the flooding, field surveying may be required, contact the property owners, develop mitigation strategies and implement mitigation projects.

**Other Alternatives:** There are area specific alternatives described in the repetitive loss plan, these will be detailed when property owners invite the County to help them.

**Existing Planning Mechanism(s) through which Actions will be implemented:** This is an important part of the Sacramento County Program for Public Information.

**Responsible Agency / Department / Partners:** County DWR in coordination with other state, county, and local agencies.

**Cost Estimate:** \$5 million

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

***Action 18. Flood risk mapping***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** FEMA flood insurance rate maps simply tell people if they are in or out if they must buy flood insurance or not, however, the maps do not tell people the frequency, depth, and velocity of the water.

**Project Description:** Flood risk mapping would be done in a location, such as a repetitive loss area, to determine the frequency, depth and velocity of the water. Then flood warning systems can be established and ultimately flood hazard mitigation projects can be constructed.

**Other Alternatives:** Treating all flood insurance rate map floodplains the same is not a viable alternative.

**Existing Planning Mechanism(s) through which Actions will be implemented:** The tools are available; it really depends on an area of residents desiring this information.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$100,000 per area analyzed

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

*Action 19. Storm Ready*

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** It is believed that every resident, homeowner, business owner should understand the flood hazard that could affect their interests and mitigate that risk. Mitigation measures include being ready to flood fight and to evacuate, being storm ready.

**Project Description:** Weather radio, understanding the hazard and risk, high water notices describing the flood depth, brochures, outreach,

**Other Alternatives:** No action

**Existing Planning Mechanism(s) through which Actions will be implemented:** County flood planning.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$100,000

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

*Action 20. Alder Creek flood hazard mitigation*

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**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Alder Creek drains from the City of Folsom through Aerojet and into Lake Natomas. It is a drainage area that was heavily gold mined in the late 1800s into mid-1900s. Now, there are land development interests. On the creek is a circa 1890 miner's debris dam that is in poor shape.

**Project Description:** Repair the dam so that it may stand the test of time.

**Other Alternatives:** Remove the dam and the sediment behind it

**Existing Planning Mechanism(s) through which Actions will be implemented:** Glenborough Master Plan.

**Responsible Agency / Department / Partners:** City of Folsom with oversight by County of Sacramento Floodplain Management Section

**Cost Estimate:** \$1M to \$10M

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

*Action 21. Operational protocol for American River pump stations that are affected by the reoperation of Folsom Dam*

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Folsom Dam has a new lower and larger spillway that allows the operator to do forecast based water management; however, the river will be high more often. Consequently the operation of the pump stations might need to be revised. This could include upgrades to the pump stations.

**Project Description:** Analysis, modeling and mapping, discussion with operations team and consider what changes might be necessary

**Other Alternatives:** No Action

**Existing Planning Mechanism(s) through which Actions will be implemented:** Sacramento County floodplain management staff have prepared models for existing condition at each pump station.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$1M

**Benefits (losses avoided):** Reduced risk to people and property.

**Potential Funding:** FEMA, CA DWR, USACE, other

**Timeline:** Within 5 years.

**Project priorities (High, Medium, Low):** medium

**Action 22. *Arcade Creek flood control***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Flooding is a common occurrence on Arcade Creek,

**Project Description:** Construct Gum Ranch basin, improve existing floodwalls and levees, clean sediment, repair erosion, improve pump station(s), complete FEMA modeling and mapping updates, outreach public information

**Other Alternatives:** Other mitigation measures

**Existing Planning Mechanism(s) through which Actions will be implemented:** South Branch Arcade Creek CLOMR/LOMR, Arcade Creek analysis and map revision, Evergreen Estates, Cameron Ranch, and operation and maintenance reports.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$5 million (+/-)

**Benefits (losses avoided):** Flood control, flood risk knowledge and outreach, flood hazard mitigation.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

**Action 23. *Beach Stone Lakes area flood risk reduction program***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Flooding is frequent after heavy rains in the Beach Stone Lakes area

**Project Description:** McCormack Williamson weir, Stanton Island flood control, Snodgrass Slough conveyance improvement, raise structures, raze structures, raise wells, abandon basements, add foundation vents, construct floodwalls and flood berms, livestock mounds. Encourage CA DWR to repair and improve the Sacramento River levee from Freeport to downstream of Hood, manage peak flow and volume upstream, ensure flood risk, enhance warning and evacuation.

**Other Alternatives:** The alternatives are listed in the project description

**Existing Planning Mechanism(s) through which Actions will be implemented:** Beach Stone Lakes Area flood hazard mitigation program, various reports

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$50,000 to \$5M depending on scope of project(s)

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure are risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

***Action 24. Protect critical facilities from flooding***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Every property is important but there are certain facilities that are critical to be up and running post-flood-disaster, these critical facilities should take priority in flood hazard mitigation

**Project Description:** Raise, protect, or relocate structures and critical features so that they are reasonably safe from statistically improbable flood hazards

**Other Alternatives:** The alternatives are expressed in the project description

**Existing Planning Mechanism(s) through which Actions will be implemented:** General Plan Safety Element, Floodplain Management Ordinance, ASCE-24.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** Up to \$5M depending on size and scope of each project

**Benefits (losses avoided):** Structure protection from flooding but the importance of a critical facility post flood disaster would be much greater than merely the structure being protected

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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



**Action 25. Dam Safety (Activity 630)**

---

**Hazard(s) Addressed:** Dam Failure, Levee Failure, Heavy Rains and Storms, Flood, Localized Flood,

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** There are several dams that can affect Sacramento County, the most potentially catastrophic is Folsom. Recently and new spillway was constructed, so the chance of dam breach is reduced but there could be a ‘controlled’ release from the spillway that overwhelms the levees

**Project Description:** Develop an emergency management and public outreach effort using the Community Rating System Activity 630 as our guide.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** The Community Rating System Activity 630 is our guide for this Action.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$200,000 for the initial planning and outreach

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

**Action 26. Flood fighting for Delta legacy communities: Hood, Courtland, Locke, Walnut Grove**

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The levees protecting the Delta legacy communities are not accredited to FEMA standards and there should be attention directed to flood risk reduction for these communities.

**Project Description:** In the Flood Risk Reduction Plans for each of the Delta legacy communities there are proposed management actions. These actions should be considered and acted upon by the communities

**Other Alternatives:** Flood insurance is a form of mitigation

**Existing Planning Mechanism(s) through which Actions will be implemented:** Flood Risk Reduction Plans for each of the Delta legacy communities.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$millions as described in the plan for each community

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** Grants from Cal OES, FEMA, CA DWR

**Timeline:** Within 5 years

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

***Action 27. Implement Delta Small Communities Projects***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake, Earthquake Liquefaction

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** In 2018-2021, Sacramento County Water Resources developed, with CA DWR grant funds and significant input from the communities, programmatic flood risk reduction plans for the towns of Hood, Courtland, Walnut Grove east, Locke, and Walnut Grove west.

**Project Description:** Each plan has management actions and recommendations

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** These are programmatic plans to which detailed plans and requisite documentation and environmental review will be required.

**Responsible Agency / Department / Partners:** Sacramento County in partnership with Delta communities and reclamation districts.

**Cost Estimate:** the cost estimates for each measure are described in the plans

**Benefits (losses avoided):** Reduced flood risk in the Delta communities. Water supply to the state of California and local flood control

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** 2 to 10 years

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

*Action 28. Elevate houses to reduce flood risk*

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Raising structures on a firm flood resistant foundation so that the floor is safely above the flood hazard elevation is agreed to be a very effective flood hazard mitigation measure.

**Project Description:** Raise houses and other structures so the floor is safely above the flood hazard elevation, the lower level would be subject to flooding and can only be used for vehicles and incidental storage, things that can be quickly relocated to high ground.

**Other Alternatives:** Flood insurance is not the best form of flood mitigation.

**Existing Planning Mechanism(s) through which Actions will be implemented:** Sacramento County Floodplain Management Section has managed numerous grants for the raising of houses.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** Typically \$150,000 to \$200,000 to raise a house

**Benefits (losses avoided):** Protection of property and life safety

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** Within 5 years

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

*Action 29. Flood emergency management exercises*

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** It is important to train for emergencies so that key people know what to do when/if the real event occurs. FEMA encourages flood emergency exercises by their Community Rating System in which the County is well ranked.

**Project Description:** Annual flood emergency exercises

**Other Alternatives:** There are various forms of exercises from tabletop, webinar, panel discussion, and full scale real time.

**Existing Planning Mechanism(s) through which Actions will be implemented:** The Sacramento County Floodplain Management Section and the Office of Emergency Services would plan the exercises and many others will play in the exercises.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$10,000 to \$150,000 per exercise depending on scope

**Benefits (losses avoided):** Understanding flood hazards and risks and how to manage a flood event is important in protecting life safety.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

***Action 30. Flood evacuation mapping***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** To understand flood hazards one must understand the routing of flood water and time to reach certain depths at which the evacuation would become rescue.

**Project Description:** Analyze various flood events and map the resulting flood, time to reach 12” deep in the streets and ultimate depth. Map evacuation routes for various scenarios.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** Much of this work has been done and should be reviewed, exercised and updated from time to time. There are areas where flood hazards have not yet been analyzed and evacuation mapping has not yet been completed.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$250,000 (+/-)

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

**Action 31. Floodproofing non-residential structures**

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** FEMA recommends flood-proofing of non-residential structures such as commercial, industrial, or churches when other mitigation measures are impractical.

**Project Description:** Dry flood-proofing is most effective for shallow flooding, using berms, floodwalls, flood fight materials, flood gates at doors, flood proofing membrane on walls, reshaping landscaping. Wet flood-proofing can be effective when dry flood-proofing is not; in this, the flood water would be allowed to enter the building causing only limited damage.

**Other Alternatives:** There are flood control and other flood mitigation measures that should be considered before deciding on flood-proofing.

**Existing Planning Mechanism(s) through which Actions will be implemented:** Sacramento County Floodplain Management Ordinance.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$50,000 to \$200,000 depending on the project and subject to the benefits

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

**Action 32. Flood insurance studies (modeling and mapping the special flood hazard area)**

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Sacramento County DWR is aware of areas that need updated modeling and mapping. While for the purposes of local floodplain management, local information such as historic high water and internal studies is often used, it is also appropriate to memorialize the updated modeling in the form of an approved flood insurance study.

**Project Description:** Model the hydrologic and hydraulic characteristics of the watershed in question, map the results of the modeling, peer review, and submit to FEMA for a Flood Insurance Rate Map revision.

**Other Alternatives:** Continue using best available information for floodplain management purposes and explain the differences to the interested parties upon request.

**Existing Planning Mechanism(s) through which Actions will be implemented:** Sacramento County Floodplain Management Ordinance

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$300,000, typical, per modeling/mapping effort

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

***Action 33. Update Hydrology Standards***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The 1996 County Hydrology Standards are to be updated, starting with depth duration and frequency (DDF), consideration of climate change predictions as they impact DDF.

**Project Description:** Analyze historic rainfall records and update the statistical analysis and the DDF for current date then consider climate change. Outreach the updated data to hydrology experts for peer review. Then, update the County Hydrology Standards.

**Other Alternatives:** Continue using older standards, but that's not a good alternative

**Existing Planning Mechanism(s) through which Actions will be implemented:** Hydrology Standards dated 1996, Updated depth duration frequency analysis 2021.

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$200,000

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

**Action 34. *Laguna Creek flood control, modeling, and mapping***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Laguna Creek extends from Rancho Cordova, through the unincorporated Vineyard area, into Elk Grove, then to the City of Sacramento (see the Laguna Creek Watershed Council [www.lagunacreek.org](http://www.lagunacreek.org)).

**Project Description:** There are three flood control facilities planned for Laguna Creek:

- Triangle Aggregate Pit (2022-2025)
- Southgate Soccer Field Basin (2021-2022)
- Kalwani Basin Site (2025-?)

**Other Alternatives:** Others were considered in the 1990s, this is the preferred alternative

**Existing Planning Mechanism(s) through which Actions will be implemented:** The plan is described in the Vineyard Springs drainage study as updated (2002-2005).

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$20M

**Benefits (losses avoided):** Controlling peak flow while allowing the beneficial function and habitat value of the natural creek is the primary benefit protecting property, roads, and casualties.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

**Action 35. *Update County GIS aerial photography and LiDAR topography***

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** For floodplain mapping and modeling, it is important to have updated aerial survey data

**Project Description:** Fly the County with LiDAR and photography, georeferenced the area.

**Other Alternatives:** Continue using old topographic

**Existing Planning Mechanism(s) through which Actions will be implemented:** County GIS and Survey will take the lead

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$200,000

**Benefits (losses avoided):** Reduced risk to people, property, critical facilities, and infrastructure at risk of flooding.

**Potential Funding:** FEMA, CA DWR, US Army Corps of Engineers, others

**Timeline:** Within 5 years

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

**Action 36.** *Maintain and improve Sacramento River levee from south of Freeport to south of Hood, a reach owned and operated by CA DWR Maintenance Area 9*

---

**Hazard(s) Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** The Sacramento River east bank levee from Freeport to down-river of Hood is a primary flood control and water supply feature and is owned and operated by the State of California Department of Water Resources, Maintenance Area 9. This is also deemed to be one of the weakest levees in the system in need of repair and improvement.

**Project Description:** Repair, improve, and certify this reach of levee to urban standards to ensure flood control and water supply for the 20 million water users to the south.

**Other Alternatives:** No action.

**Existing Planning Mechanism(s) through which Actions will be implemented:** This is fully in the hands of the State of California

**Responsible Agency / Department / Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$120 million

**Benefits (losses avoided):** Save lives, protect property, provide reliable water supply to agriculture and 20 million people in the central and southern part of the state.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** Within 5 years



**Project Priority (H, M, L):** High

***Action 37. Use Existing Aggregate Mining Pits for Flood Control***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** On Laguna Creek and Morrison Creek there are large aggregate mines that can be used long-term as flood control as well as other mixed uses. There are planned aggregate mines on Elder Creek, similarly a possibility for flood control.

**Project Description:** Where the open pit mine is near a creek it is straight forward for a weir to allow peak flow in the creek to spill into the pit, then when the creek water surface profile subsides, the water could be pumped back into the creek. This would reduce peak flow downstream.

**Other Alternatives:** Construct flood control in other locations, mitigate flood risk by other methods.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Master planning for the Vineyard area, Jackson corridor, Laguna Creek, Morrison Creek, Elder Creek

**Responsible Agency/ Department/Partners:** Sacramento County Department of Water Resources

**Cost Estimate:** \$2,000,000

**Benefits (Losses Avoided):** Flood control, property and casualty protection

**Potential Funding:** Various FEMA grants, other grants, local cost share

**Timeline:** 1 to 5 years

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

***Action 38. Implement Storm Drain Capital Improvement Plan***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Design and construction of drainage capital improvement projects to repair facilities and to make improvements that will reduce flooding.

**Project Description:** The County of Sacramento has a 5 year capital improvement plan

**Other Alternatives:** Defer the projects, but that would not be favorable

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** 5 year capital improvement plan to which projects may be added and priorities may be adjusted

**Responsible Agency/ Department/Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$100,000 to \$10 million

**Benefits (Losses Avoided):** Reduce flooding, protect property and casualty losses

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 1 to 5 years

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

***Action 39. Woodside Condominiums Flood Risk Reduction***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Woodside Condominiums is comprised of about 725 individually owned units in which all own a share of the common area which includes the structures and each own the interior of their unit. There are about 90 units in buildings that have flooded multiple times and there are about that many additional units that flooded one time.

**Project Description:** Raise the buildings that are most prone to flooding. Construct flood-proofing walls, berms, planter around those building that flooded only one time.

**Other Alternatives:** Many other alternatives have been considered but the project described here is the best

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** There is a thick file on this subject at Sacramento County DWR.

**Responsible Agency/ Department/Partners:** County of Sacramento Floodplain Management Section

**Cost Estimate:** \$15 million (+/-)

**Benefits (Losses Avoided):** Reduce property and casualty losses

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 1 to 5 years

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

**Action 40.      *Implement Actions In The Courtland Flood Risk Reduction Plan 2021***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** If a levee were to fail on RD 551 or RD 755 the floodwater would be in the town of Courtland in about 2 days. Measures in the Courtland Flood Risk Reduction Plan 2021 would serve to reduce the risk of damage due to flooding.

**Project Description:** See Courtland Flood Risk Reduction Plan 2021, e.g., construct a flood fight road around the back of town to an appropriate profile elevation so that the available Muscle Wall could be deployed to fight the rising water should a levee break anywhere on the reclamation district.

**Other Alternatives:** Several alternatives are discussed in the Courtland Flood Risk Reduction Plan 2021

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Courtland Flood Risk Reduction Plan 2021

**Responsible Agency/ Department/Partners:** County of Sacramento Floodplain Management Section / RD 551

**Cost Estimate:** There are several Management Actions described, e.g. flood fight berm \$5M

**Benefits (Losses Avoided):** Expected annual damage, based on levee fragility analysis described in the Courtland Flood Risk Reduction Plan 2021, \$4M per year.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 1 to 5 years

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

**Action 41.      *Implement Actions In The Walnut Grove West Flood Risk Reduction Plan 2021***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** If a levee were to fail on RD 003 the floodwater would be in the town of Walnut Grove (west) in about 32 hours. Measures in the Walnut Grove West Flood Risk Reduction Plan 2021 would serve to reduce the risk of damage due to flooding.

**Project Description:** See Walnut Grove West Flood Risk Reduction Plan 2021, generally the flood fight road would be around the back of town constructed to an appropriate profile elevation so that the available

Muscle Wall could be deployed to fight the rising water should a levee break anywhere on the reclamation district.

**Other Alternatives:** Several alternatives are discussed in the Walnut Grove West Flood Risk Reduction Plan 2021

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Walnut Grove West Flood Risk Reduction Plan 2021

**Responsible Agency/ Department/Partners:** County of Sacramento Floodplain Management Section / RD 003

**Cost Estimate:** There are several Management Actions described, e.g. flood fight berm costing about \$5M

**Benefits (Losses Avoided):** Expected annual damage, based on levee fragility analysis described in the Flood Risk Reduction Plan 2021, averages about \$4M per year.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 1 to 5 years

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

***Action 42. Implement Actions In The Locke Flood Risk Reduction Plan 2021***

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**Hazards Addressed:** Flood, Localized Flood, Dam Failure, Levee Failure, Heavy Rains and Storms, Earthquake

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** If a levee were to fail on RD 369 the floodwater would be in the town of Locke in a few hours. Measures in the Locke Flood Risk Reduction Plan 2021 would serve to reduce the risk of damage due to flooding.

**Project Description:** The Locke Flood Risk Reduction Plan 2021 offers several alternative flood mitigation measures such as a cross levee

**Other Alternatives:** Several alternatives are described in the Locke Flood Risk Reduction Plan 2021

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Locke Flood Risk Reduction Plan 2021

**Responsible Agency/ Department/Partners:** County of Sacramento Floodplain Management Section / RD 369

**Cost Estimate:** There are several Management Actions described, e.g., a cross-levee costing about \$4M

**Benefits (Losses Avoided):** Expected annual damages, based on levee fragility analysis described in the Flood Risk Reduction Plan 2021, are about \$360K per year.

**Potential Funding:** FEMA grants, various federal grants, state grants, local match funding

**Timeline:** 1 to 5 years

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

## *Drought & Water Shortage, Severe Weather: Extreme Heat, and Wildfire Actions*

**Action 43.** *Reduce the urban heat island effect through the implementation of "cool communities" strategies, including but not limited to, increasing tree plantings, using cool/green roofs and cool/pervious pavements*

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**Hazards Addressed:** Severe Weather: Heat

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Locations where development dominates the landscape experience higher temperatures due to the Urban Heat Island Effect (UHIE), compared to landscapes that are mostly landscaped or natural vegetation. Human-made materials, such as asphalt and concrete, absorb heat and alter microclimate conditions by several degrees °F, exacerbate emissions of air pollutants, and increase the rate of photochemical production of ozone. The impacts of UHIE are more pronounced in the summer months when daily temperatures are highest during the year, leading to degraded air quality or increased heat exposure. Global climate change is exacerbating the UHIE and is increasing the impacts of severe heat events. Excessive heat:

- Negatively impacts health and well-being by exacerbating chronic and acute conditions (which increase emergency room visits and death rates, particularly for the most vulnerable populations);
- Increases electricity use — which can increase the costs for cooling, stress power generation and transmission systems, and increase greenhouse gas emissions;
- Negatively impacts our economy by reducing agricultural and labor productivity, among other factors;
- Impairs water quality and increases the volume of water required to keep trees and landscape alive and healthy.
- Damages critical infrastructure that has not been hardened.

The County supports “Cool Communities” programs designed to reduce the impacts of urban heat islands by increasing the reflectivity and emissivity of surfaces within the community, as well as using vegetative cover to shade surfaces from the sun. Cool Communities strategies are most successful when roofing, paving, and shade tree and shrub planting are used together on a wide scale to reduce the amount of heat energy absorbed by the built environment. This systematic approach reduces local ambient temperatures, energy used for air conditioning, and the potential for ozone formation in the lower atmosphere - a harmful pollutant.

Trees in urban areas help reduce the UHIE and provide aesthetic and environmental benefits to residential and commercial areas. Trees enhance a community's livability by softening street noise and enhancing pedestrian use. Urban trees provide stormwater quality benefits by intercepting small, more frequent rain and compensating, to some extent, the impact of paved areas. Trees also provide a cool green canopy of shade to reduce the heating effects of summer sun and consequently reduced energy consumption to cool buildings. The urban forest in Sacramento has provided distinct identities for local neighborhoods and has reduced summertime temperatures by minimizing reflective heat. As the County's urbanized area expands, the need for trees and associated canopy cover will increase. Since an urban forest is not static, the planting and maintenance of trees will be required to encourage healthy growth and to mitigate the impacts of extreme heat events and the UHIE.

Cool roofs are designed to maintain a lower roof temperature than traditional roofs that are heated through sun exposure and contribute to the UHIE. Cool roofs are composed of surfaces that reflect sunlight and

absorb less heat, which reduces heat flow into buildings and lowers energy usage and associated costs. Green roofs are rooftops that are partially or completely covered by vegetation. These forms of roofing lower the amount of heat absorbed by a building and reduces energy demand associated with air conditioning

Cool pavement reduces the effects of UHIE by reflecting sunlight and absorbing less heat as compared to traditional pavement. Pavement reflectance can be enhanced through the use of reflective aggregate, reflective or clear cinder, or a reflective surface coating. Pervious pavements help reduce the UHIE by cooling their surface and surrounding air as water passes through the pavement and evaporates.

**Project Description:** The project will increase tree plantings around buildings, in parking lots, and along public rights-of-way especially in the County's Environmental Justice Communities through the following activities:

- Planning for and mapping of the Urban Forest, including areas available to receive tree plantings
- Planting (materials and labor or financial support to partnering non-governmental organizations such as the Sacramento Tree Foundation)
- Maintenance activities for the existing Urban Forest including pruning, pest control and fertilization to extend tree life and longevity.
- Enforcement of existing tree protection ordinances and penalty provisions for replacement tree planting.
- Education and outreach to increase awareness of the importance of tree planting and maintenance on private property.

The project will also increase the use of cool/green roofs and cool/pervious pavements through activities such as code amendments, grants, and educational programs to promote, require and/or incentivize their use in both the replacement and construction of new, buildings, roads, sidewalks, parking areas, and bikeways.

**Other Alternatives:** Solar canopies over large parking lots and rooftops.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Climate Action Plan and updates to the General Plan, Zoning Code, Design Guidelines, Building Code, Stormwater Design, County Code, and/or County Improvement Standards.

**Responsible Agency/ Department/Partners:** PER, SMUD, Sac Tree Foundation, Regional Parks, SacDOT, BP&I

**Cost Estimate:** \$10,000 to \$250,000

**Benefits (Losses Avoided):** The "cool communities" strategy would reduce the UHIE and result in lower energy consumption thus reducing GHG emissions and improving air quality. This would result in lower cooling costs, reduced healthcare costs associated with heat-related illness and air quality, and a reduction in infrastructure repair costs. A co-benefit is that reducing greenhouse gas (GHG) emissions will reduce the impacts of climate change and thereby reduce the other hazards exacerbated by climate change.

**Potential Funding:** FEMA hazard mitigation grants, County Tree Mitigation Fund, CEQA mitigation applied to projects, State conservation and/or Climate grants, potential Climate Action Plan mitigation fee, SMUD Cool Roof Incentive program.

**Timeline:** Ongoing, 1-5 years

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

***Action 44. Defensible Space and Vegetation Management; Development of Areas of Refuge***

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**Hazards Addressed:** Grassland Fire/Wildfire

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Numerous areas of the community are affected by wildfires including the American River Parkway, Rancho Murrieta, Sloughouse and Jackson Highway. Wildfires can cut off the limited egress routes and residents and businesses need to identify areas of refuge that can protect people from approaching fire.

**Project Description:** Projects to create defensible space and vegetation management in communities most affected by wildfire dangers. To study the feasibility of designated areas of refuge, fund the purchase and design of those areas and implement a public education strategy on how to safely use those refuge areas.

**Other Alternatives:** Partner with local Fire Safe Councils, fire departments, General Plan changes requiring the identification of refuge sites. Alternatives could include expanding arterial and corridor capacity to effect large, rapid evacuation orders.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:**

**Responsible Agency/ Department/Partners:** Sacramento County OES

**Cost Estimate:** \$1.5 million

**Benefits (Losses Avoided):** Reduced wildfire risk.

**Potential Funding:** CAL FIRE grants, other grant funding sources.

**Timeline:** Within 5 years

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

***Action 45. Wildfire Suppression – Regional Parks and Open Space (urban interface)***

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**Hazards Addressed:** Hazard - Loss of residential and business structures and loss of habitat from wildfire. Post hazard results in sedimentation of creeks and rivers.

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Large areas of Sacramento County’s rural areas and open space are susceptible to wildfire. The multi-year drought conditions have stressed trees and other vegetation, increased flammability and lengthening the fire season. The County has experienced more and larger wildfires than in years past. Wildfire suppression is needed to reduce fire loads and reduce response time to minimize wildfire size and intensity.



**Project Description:** Mitigation includes: Fire fuel reduction and firebreaks maintenance. The method used depends on the terrain and type of fire fuel to remove (dry vegetation, limb ladders, etc.), such as hand crews with manual tools, livestock grazing, prescribed burns, mechanical fuels removal, planting of fire resilient vegetation and/or invasive species removal.

**Other Alternatives:** No Action

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Parks has a fire fuel reduction plan in place with prioritized areas based on the threat level and proximity to people and structures balanced against the available funding. Parks coordinates with other agencies for efficiencies in use of funds and manpower.

**Responsible Agency/ Department/Partners:** Sacramento County Department of Regional Parks / Sacramento Metropolitan Fire District, City of Sacramento Fire Department

**Cost Estimate:** \$200,000

**Benefits (Losses Avoided):** Primary benefit is protecting residential and commercial structures in areas adjacent to park lands.

**Potential Funding:** FEMA Hazard Mitigation grants, Agency funding

**Timeline:** Annual

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

#### ***Action 46. Wildfire Fighting - Support***

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**Hazards Addressed:** Wildfire risk within Sacramento County Regional Parks and in Open Space, especially at the urban interface.

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Large areas of Sacramento County's rural areas and open space are susceptible to wildfire. The multi-year drought conditions have stressed trees and other vegetation, increased flammability and lengthening the fire season. The County has experienced more and larger wildfires than in years past. Wildfire fighting support is needed to reduce response time to minimize wildfire size and intensity.

**Project Description:** Mitigation includes: Firebreak maintenance, clearance for access roadways, adding fire access signage, maintaining technology to share information on access routes, hydrants, sensitive habitat, and cultural resource areas. Coordination with local fire agencies on risks and response activities.

**Other Alternatives:** No Action

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Parks has identified locations for road clearance. Planning with other agencies is ongoing to prioritize hazardous conditions and make efficient use of funds.

**Responsible Agency/ Department/Partners:** Sacramento County Department of Regional Parks / Sacramento Metropolitan Fire District, City of Sacramento Fire Department

**Cost Estimate:** \$40,000

**Benefits (Losses Avoided):** Protecting park lands, adjacent neighborhoods, high priority forests, wildlife habitats, and cultural resources.

**Potential Funding:** Agency funding, fire grants

**Timeline:** Annual, and periodic as required by specific projects

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

*Action 47. Wildfire Suppression*

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**Hazards Addressed:** Wildfire

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** Large areas of Sacramento County’s rural areas and open space are susceptible to wildfire. Areas of concern include Regional Parks and Open Space areas, especially at the urban interface. The multi-year drought conditions have stressed trees and other vegetation, increased flammability and lengthening the fire season. The County has recently experienced more and larger wildfires than in years past. Wildfire suppression is needed to reduce fire loads and to reduce response time to minimize wildfire size and intensity.

**Project Description:** Mitigation includes: Clearance for access roadways and firebreaks, maintaining and adding fire access signage, sharing information on access routes, hydrants, sensitive habitat, and cultural resource areas. Providing areas for wildfire training (burns) for fire departments, when feasible. Active patrols to monitor for wildfire ignitions, and possibly adding remote monitoring equipment.

**Other Alternatives:** No Action

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** American River CWPP and other area fire plans and programs

**Responsible Agency/ Department/Partners:** Sacramento County Department of Regional Parks, Sacramento Metropolitan Fire District, City of Sacramento Fire Department

**Cost Estimate:** Flexible, depending on size and scope of project. FY21-22 County allocation in excess of \$1M

**Benefits (Losses Avoided):** Protecting park lands and facilities, adjacent neighborhoods, high priority forests, wildlife habitats, and cultural resources.

**Potential Funding:** FEMA grants, Fire grants, Agency funding

**Timeline:** Periodic scheduled work, at minimum implemented on an annual timetable.

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

## *Severe Weather: Extreme Cold and Freeze, High Winds and Tornadoes Actions*

### *Action 48. Establish Warming Centers with Backup Power*

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**Hazards Addressed:** Severe Weather, Extreme Cold and Freeze, Climate Adaptation

**Goals Addressed:** 1, 2, 3, 4, 5

**Issue/Background:** As Sacramento begins to experience temperature extremes and more frequent storm systems, the likelihood of those weather events being combined with a widespread loss of power is increased. Extreme cold, combined with high winds, can cause frostbite to occur. Climate adaptation strategies have called for building all-electric homes, which would leave homeowners without power during an extreme weather event and without options to adequately heat their home to remain safely in their home for the duration of the event.

**Project Description:** This project would identify likely sites to host residents as a warming center. In order to ensure that the warming center could maintain operations, an electrician should install building connections and transfer switches to allow the operation of generators to serve the building. Additionally, battery systems intended to provide electrical load for a short duration until generators could re-charge or connect to the building would prevent interruption of services.

**Other Alternatives:** Building code requirements to ensure new construction homes are self-sufficient and provide stable indoor temperatures during long-term power outages combined with severe weather.

**Existing Planning Mechanism(s) through which Action Will Be Implemented:** Severe Weather Cold and Freeze Emergency Plan, General plan, building codes

**Responsible Agency/ Department/Partners:** Sacramento County OES

**Cost Estimate:** \$3 million

**Benefits (Losses Avoided):** Facility wall batteries could be configured to charge during lower peak hours, or from direct solar charges thereby reducing demand on the grid infrastructure and

**Potential Funding:** Capital Improvement Funds; BRIC funding

**Timeline:** Within 5 years

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