

1. Introduction

1.1. Background

The Mid & Upper Sacramento River Regional Flood Management Plan (MUSR RFPM) is a locally-driven assessment of regional flood management issues within the Mid Sacramento Region and the Upper Sacramento River Region (collectively referred to as the Planning Area or Regions). The Mid and Upper Sacramento River regions comprises portions of Butte, Colusa, Glenn, Lake, Sutter, Tehama, and Yolo counties (see Figure 1-1), and contain a diverse set of stakeholder groups in urban cities, small communities, and rural areas. The MUSR RFMP is a follow up to the 2012 Central Valley Flood Protection Plan (CVFPP) and will be used to inform the 2017 update of the CVFPP. The MUSR RFMP will outline the long-term vision for flood management in the Regions and will include, among other things, a description of the current flood management conditions, opportunities for improving flood management within the Planning Area, needed projects based upon priority, and a preliminary financing plan.

The Mid Sacramento River and Upper Sacramento River Regions joined together in this planning effort because the Regions share common interests and goals, along with interconnected flood control facilities and systems. The MUSR RFMP was developed by participants from the Regions' counties, cities, local levee maintaining agencies (LMAs), water agencies, emergency response agencies, citizen groups, tribes, resource agencies, nongovernmental organizations (NGOs), and other interested stakeholders. The MUSR RFMP effort was funded by a Proposition 1E grant through the California Department of Water Resource (DWR).

1.2. MUSR RFMP Purpose, Goals, and Objectives

The MUSR RFMP is intended to provide the framework for the Mid and Upper Sacramento River Regions' vision for managing flood risk, and was developed using local experience, knowledge and expertise. It provides a reconnaissance-level assessment of regional flood risks, and presents a prioritized list of short-term and long-term flood risk reduction projects for the Regions. The Regions intend for the MUSR RFMP to be used by DWR to inform the Sacramento River Basin-Wide Feasibility Study (BWFS), Central Valley Flood System Conservation Strategy (Conservation Strategy), and 2017 update to the CVFPP.

The goals and objectives of the MUSR RFMP include:

- Assemble, coordinate, inform, and direct the regional participants for the organization, preparation, and completion of the MUSR RFMP using available financial and technical resources.
- Define opportunities and problems concerning flood management and protection issues within the Regions to be addressed in the MUSR RFMP.

- Cooperatively and collaboratively determine appropriate regional flood management/protection actions and projects that meet priority benefits and needs, and provide public safety and reduced flood risks for the Regions.
- Identify funding needs and resources in order to implement flood management/protection actions and projects included in the MUSR.
- Using local expertise and knowledge create a thoughtful flood management plan for the future in a directed, consistent, and sustainable manner to allow better economic and social certainty for the Regions and the State.
- Protect the agricultural, environmental, and urban infrastructure and resources of the Regions in an integrated and practical way that improves and benefits all sectors in the future.
- Assist the State in moving forward in its path of continuing to develop and implement a workable and progressive CVFPP that is in the best interest of the Regions and State.

1.3. Relationship to Other Planning Efforts

1.3.1. *2012 Central Valley Flood Protection Plan*

The Central Valley Flood Protection Act of 2008 mandated that DWR prepare the 2012 CVFPP to guide the State's participation in managing flood risk along the Sacramento River and San Joaquin River systems. The CVFPP proposes a State Systemwide Investment Approach (SSIA) for sustainable, integrated flood management in areas currently protected by facilities of the State Plan of Flood Control (SPFC). The primary goal of the 2012 CVFPP is to improve flood risk management by reducing the chance of flooding, and damages once flooding occurs, and improve public safety, preparedness, and emergency response. Supporting goals include improving operations and maintenance, promoting ecosystem functions through protection and restoration, improving institutional support, and promoting multi-benefit projects.

The initial CVFPP was adopted by the Central Valley Flood Protection Board (CVFPB) in June 2012 and will be updated every five years, with each update providing support for subsequent policy, program, and project implementation. The CVFPP did not incorporate the level of detail needed to delineate refined systemwide improvement alternatives, nor did it include a detailed discussion of local flood risk reduction priorities. Instead, it provides a broad vision to help direct regional- and state-level financing plans to guide investments which may be in the range of \$14 billion to \$17 billion over the next 20 to 25 years.

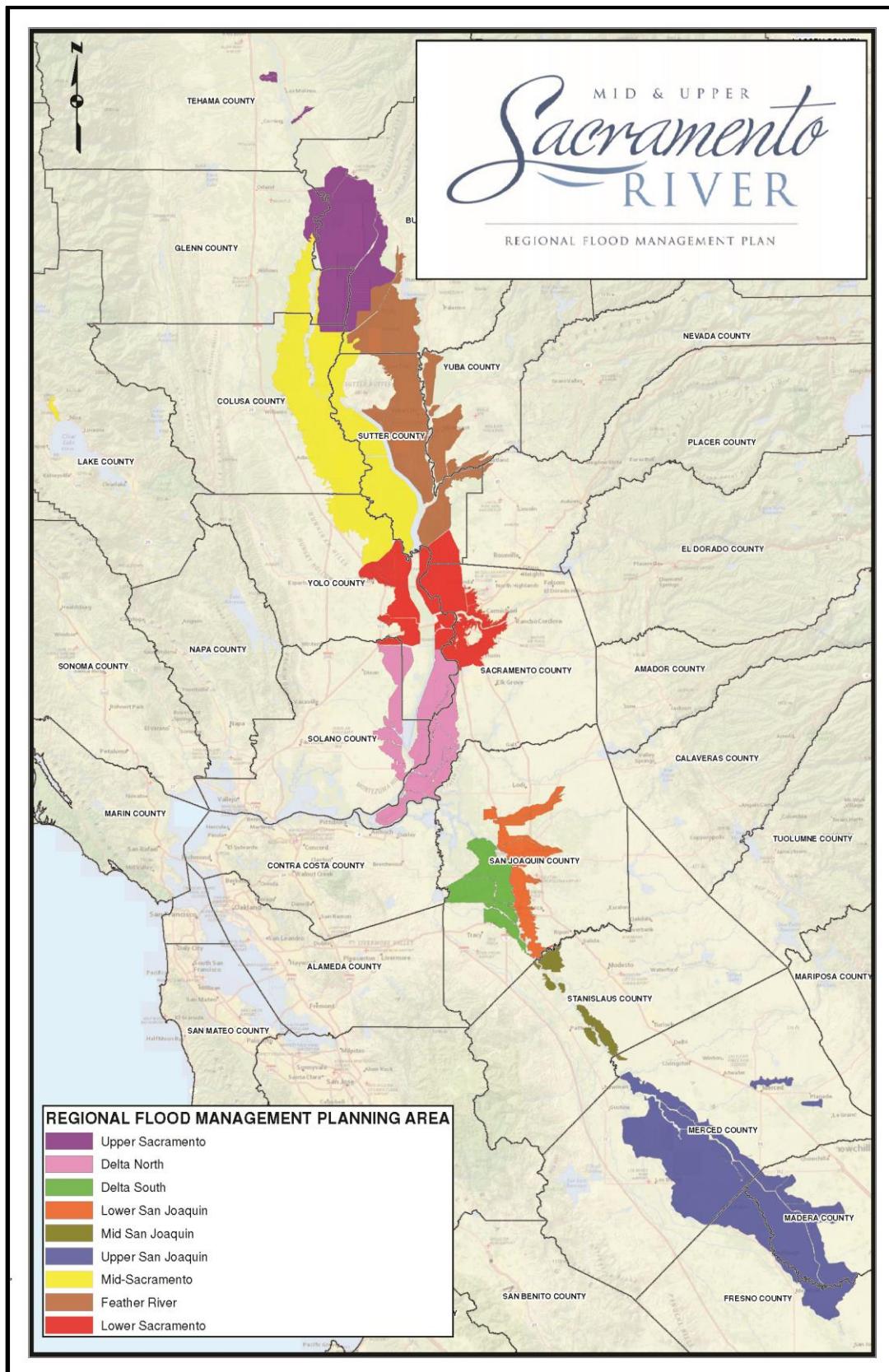
1.3.2. *Regional Flood Management Plans*

DWR launched the Regional Flood Management Planning effort to assist local agencies in developing long-term regional flood management plans that address local needs, articulate local and regional flood management priorities, and establish the common vision of regional partners. The six planning regions (originally nine, but some combined) are the Upper/Mid-Sacramento River, Feather River, Lower Sacramento River/Delta North, Lower San Joaquin River/Delta South, Mid-San Joaquin River, and Upper San Joaquin River (see Figure 1-1).

Each of the six planning regions formed a working group led by a local agency and consisting of representatives from flood management agencies, land use agencies, flood emergency responders, permitting agencies, and agricultural and environmental interests.

The MUSR RFMP was prepared in direct coordination with both the Lower Sacramento/Delta North and Feather River Regions during this RFMP planning process. In particular, the Regions collaborated extensively in regard to operation and maintenance (O&M) issues, and on issues related to the Cherokee Canal, Butte Sink, Sutter Bypass, and Yolo Bypass.

Figure 1-1. Regional Flood Management Planning Areas



1.3.2.1. DWR Basin-Wide Feasibility Studies, Conservation Strategy & 2017 CVFPP

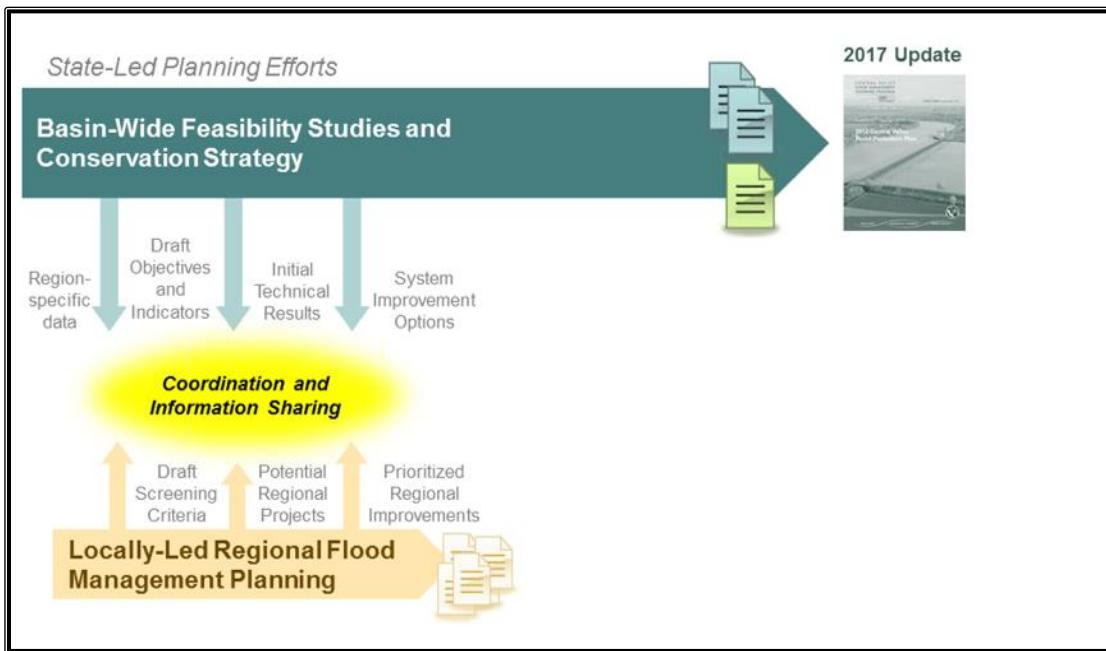
DWR intends to refine the SSIA concept proposed in the 2012 CVFPP through the development of Basin-Wide Feasibility Studies (BWFS) of the Sacramento and San Joaquin River Basins. The BWFS will inform the development of the 2017 update to the CVFPP. Flood management actions that will be considered in the BWFS include system improvements such as weirs and bypasses, regional flood risk reduction actions (especially those that incorporate other benefits such as recreation or water supply), and implementation of a habitat conservation strategy which integrates environmental enhancement and sustainability objectives into flood management projects and activities.

While the BWFS will focus on refining the SSIA from the 2012 CVFPP, they will also consider and may include projects and actions recommended by the RFMPs that are determined to be consistent with the CVFPP. The improvements will be evaluated based on the ability to meet basin-wide objectives, such as resiliency, flexibility, and sustainability of the flood management system along the Sacramento and San Joaquin rivers. DWR has indicated that it intends to fully coordinate the activities of the BWFSs and RFMPs in a way that the two planning processes inform each other and are properly integrated. This integration will facilitate the further consideration of recommended regional improvements in the BWFS.

In conjunction with the BWFS, DWR is also developing the *Conservation Strategy*. The Conservation Strategy will inform the development of the 2017 update of the Central Valley Flood Protection Plan and the BWFS by providing the systemwide context, information, and tools that are needed to guide the improvement of riverine and floodplain ecosystems. The Conservation Strategy will build upon the Conservation Framework, which was included as Appendix 2 of the adopted 2012 CVFPP.

Figure 1-2 provides a graphical description of the relationship between the parallel planning efforts.

Figure 1-2. Relationship between the State-led BWFS and the locally-led RFMP



1.3.3. Northern Sacramento Valley Integrated Regional Water Management Plan

The MUSR RFMP was used to help develop the flood control component of the 2014 Northern Sacramento Valley Integrated Regional Water Management Plan (NSVIRWMP). The NSVIRWM is a collaborative effort to enhance coordination of the water resources management in the region. NSVIRWM involves multiple agencies, stakeholders, tribes, individuals, and groups to address water-related issues and offer solutions that can provide multiple benefits to the region. The NSVIRWMP includes representatives of the six counties working in partnership with community stakeholders, tribes, and the public to identify the water-related needs of the region.

1.4. MUSR RFMP Development Process

The MUSR RFMP Planning Area consists of portions of seven counties: Butte, Colusa, Glenn, Lake, Sutter, Tehama, and Yolo; the cities of Chico and Colusa; the smaller communities of Gerber, Hamilton City, Nord, Durham, Dayton, Nelson, Richvale, Glenn, Ord Bend, Butte City, Princeton, Meridian, Grimes, Robbins, and Afton; Levee Districts 1, 2, and 3; the Sacramento West Side Levee District; and eight Reclamation Districts (RDs): Lake County Watershed Protection District, Tehama County Flood Control & Water Conservation District, the Colusa Basin Drainage District, the Colusa Rancheria, and four DWR Maintenance Areas. An overview of the area defined as the Mid and Upper Sacramento Region is shown in Figure 1-3.

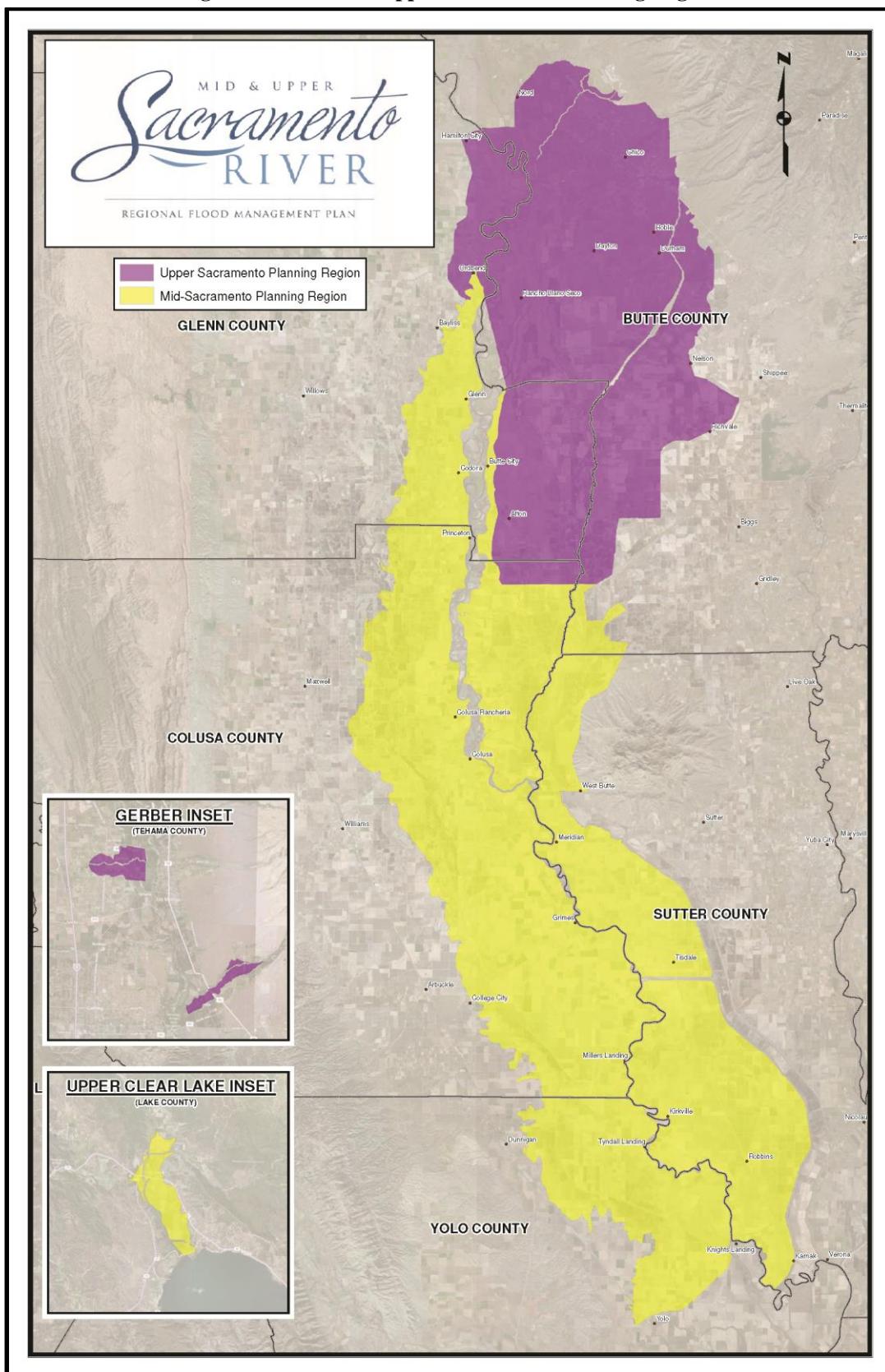
The approach for developing the MUSR RFMP consisted of first, conducting a series of individual small group meetings with all of the participating local levee maintaining agencies, cities, counties, small communities, and interested stakeholders within the region. The series of

small group meetings were intended to reach all interested parties within the Planning Area. The initial small group meetings presented the background, purpose, and objectives of the MUSR RFMP and solicited input from attendees on their thoughts and ideas for flood management within the region.

The small group meetings were followed up with a series of meetings of the Focus Area Workgroups. Given the scale and complexity of the issues at hand, the Focus Area Workgroups were established to make it easier for locals to have direct involvement in the parts of the MUSR RFMP that they cared about the most. A group was established for each of the following Focus Areas: Urban Areas, Operations & Maintenance, Emergency Response, Rural Areas, Small Communities, System Improvements, and Multi-Benefit. To facilitate development of multi-benefit strategies, partnerships and collaborations, two workshops were held in the fall of 2014. The workshops provided the opportunity for stakeholders to learn about each other's projects and work together on envisioning how projects may be refined to be best positioned for future funding. The workshop forum initiated dialogue on the next steps needed to develop and implement mutually beneficial projects. The workshops also helped identify a framework for establishing partnerships and collaborations with the goal of packaging priority projects to enhance opportunities for implementation.

A MUSR RFMP webpage was created to provide information on meetings and study progress to all stakeholders (<http://musacrfmp.com/>), and a Project Outreach Coordinator with a telephone hotline (530-809-9317) was established to provide a single point of contact for all parties. Any and all interested parties within the Regions were encouraged to be a part of the MUSR RFMP planning effort. As of early 2014, the stakeholder database included about 450 members.

Figure 1-3. Mid and Upper Sacramento Planning Region



1.5. Organization of the Planning Team

Reclamation District 108 was the grant recipient and lead agency for preparing the MUSR RFMP. RD 108 retained Peterson Brustad, Inc. as the lead consultant to assist in the research, planning, and preparation of the RFMP. A Steering Committee was formed to help guide and assist the MUSR RFMP team with plan development. The Steering Committee consisted of representatives from the participating counties, cities, reclamation districts, levee districts, and other levee maintaining agencies. Additionally, all tribal groups, NGOs, agricultural interests, and landowners within the MUSR RFMP Planning Area were encouraged to be involved.

In addition to the Steering Committee, a smaller Administration Committee with representatives from the Mid Sacramento and the Upper Sacramento regions was formed in order to guide the day-to-day activities of the planning team. The Administration Committee members were elected by the Steering Committee in November 2012, and additional members were added in 2014.

1.6. Organization of this Report

This report is organized to reflect the chronological sequence of the planning process. Beginning with a description of background information and the regional setting, the report describes the identified problems and opportunities. With this foundation, potential actions that may address these problems are identified. Generally, the chapters are organized to correspond with the Focus Area Workgroups, elaborating on the specific challenges and potential solutions for each topic. A summary of all of the potential flood risk management improvements is then presented, followed by an assessment of potential benefits, costs, and impacts. Based on all of these elements, a locally-determined set of priorities is formulated and documented, and the opportunities for potential financing alternatives are investigated and described.

1.7. Sources of Existing Information

The MUSR RFMP relies primarily on existing sources of information provided by local agencies, property owners, interested individuals, NGOs, as well as state and federal agencies. The major sources used to inform the RFMP include:

- Local studies and data;
- Stakeholder input;
- Central Valley Flood Protection Plan (2012), including attachments, and CVFPB Resolution 2012-2025;
- Flood Control System Status Report (2010);
- State Plan of Flood Control Descriptive Document (2010);
- Upper/Mid Sacramento River Region Flood Atlas (May 2013);
- California's Flood Future: Recommendations for Managing the State's Flood Risk (2013);
- DWR LMA Annual Reports (2013);
- DWR Non-Urban Levee Evaluations (ongoing);

- DWR Urban Levee Evaluations (ongoing);
- DWR Central Valley Floodplain Evaluation and Delineation Hydraulic Models (ongoing); and
- DWR Flood System Repair Program (ongoing).

The MUSR RFMP also incorporated information from city and county general plans, as well as institutional knowledge of the flood management facilities system from city, county, RD, LMA, and stakeholders involved in the daily O&M of their respective facilities.

The MUSR RFMP used best available information and, therefore, data sets from existing sources may not fall entirely within the Planning Area boundaries. The information in the MUSR RFMP was compiled from a number of documents, each with differing levels of detail, completeness, and study area boundaries.

1.8. Regional Partners

Historically, major flood management initiatives in California have been undertaken by local, state, and federal agencies in an evolving cooperative relationship. Beginning in the 1850s, levee improvements were initiated as entirely local undertakings, with sporadic efforts to provide state coordination and oversight. In 1910 the Jackson Plan, a comprehensive plan for flood protection for the Sacramento Valley, was proposed by the United States Army Corps of Engineers (USACE). Based on the flows recorded in the floods of 1907 and 1909, the plan relied on a system of levees along existing streams, supplemented by overflow weirs and bypasses to convey excess flood flows. The State Reclamation Board (renamed the Central Valley Flood Protection Board in 2007) was created in 1911 to carry out the plan, subsequently supported by the federal authorization of the Sacramento River Flood Control Project (SRFCP) in 1917 (CVFPB, 2012). The SRFCP was the first Federal flood control project outside the Mississippi River Valley and was the major project for flood control on the Sacramento River and its tributaries. The State and federally authorized SRFCP, which was substantially completed by 1958, includes the levees along the Sacramento River, the Feather River, Yuba River, Bear River, Cherokee Canal, the Sutter Bypass, and Wadsworth Canal (and the West Intercepting Canal and East Intercepting Canal, which feed into it). From 1917 to 2006, the USACE played a lead role in planning, authorizing, financing, constructing, and inspecting flood system improvements in the Sacramento Valley, incorporating and improving upon the levee system originally constructed by local agencies.

Since 2006, DWR and local agencies have played more prominent roles, providing leadership on major levee improvement projects in the Central Valley. The roles of the agencies involved can be expected to continue to shift in response to political and policy changes, funding availability, interest, and leadership. The roles of the key local, state, and federal agencies involved in providing and permitting flood management projects and programs are summarized below. Other organizations that were involved in the development of this MUSR RFMP are also listed.

Figure 1-4. Upper Sacramento River Region LMAs

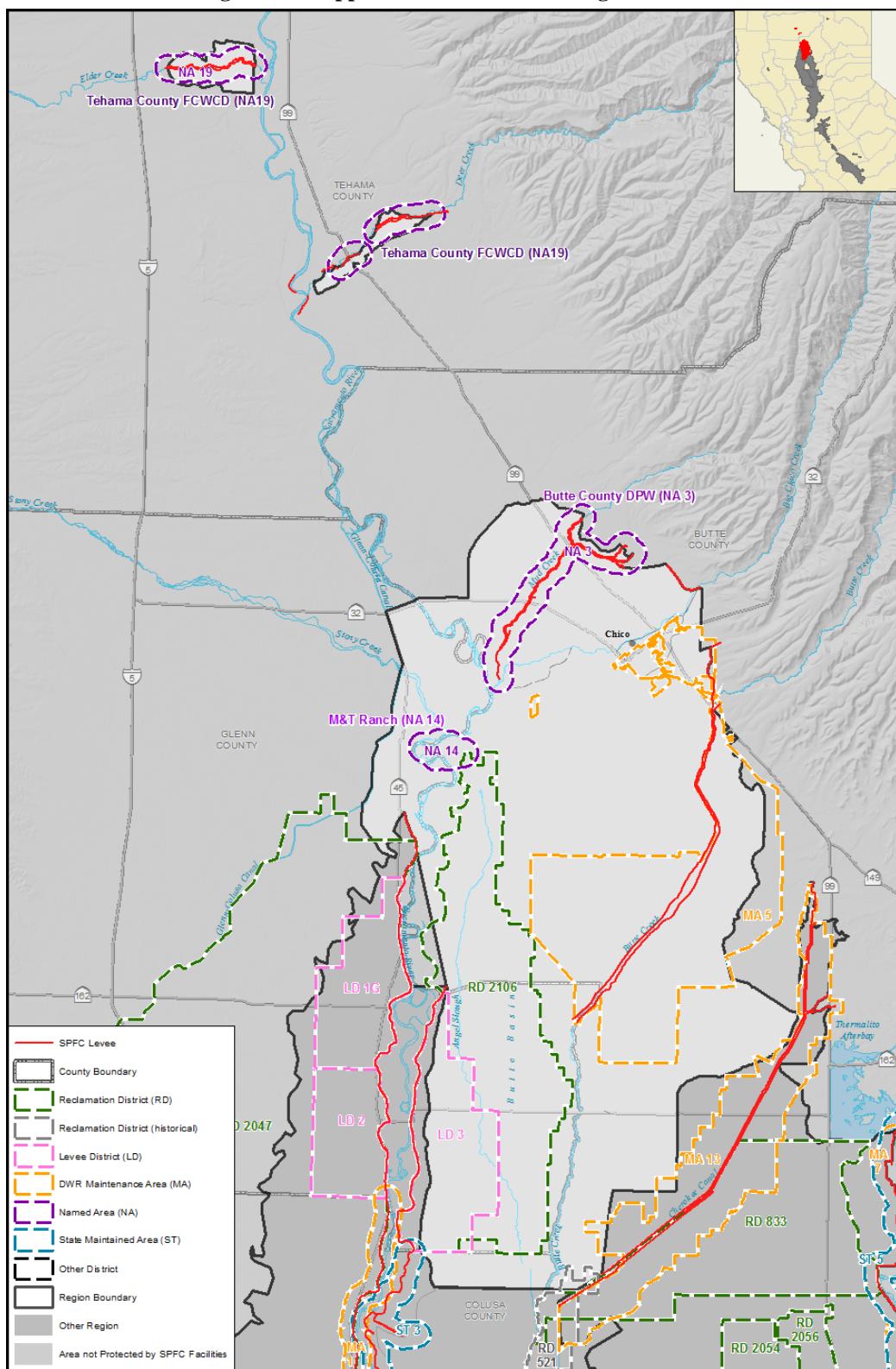
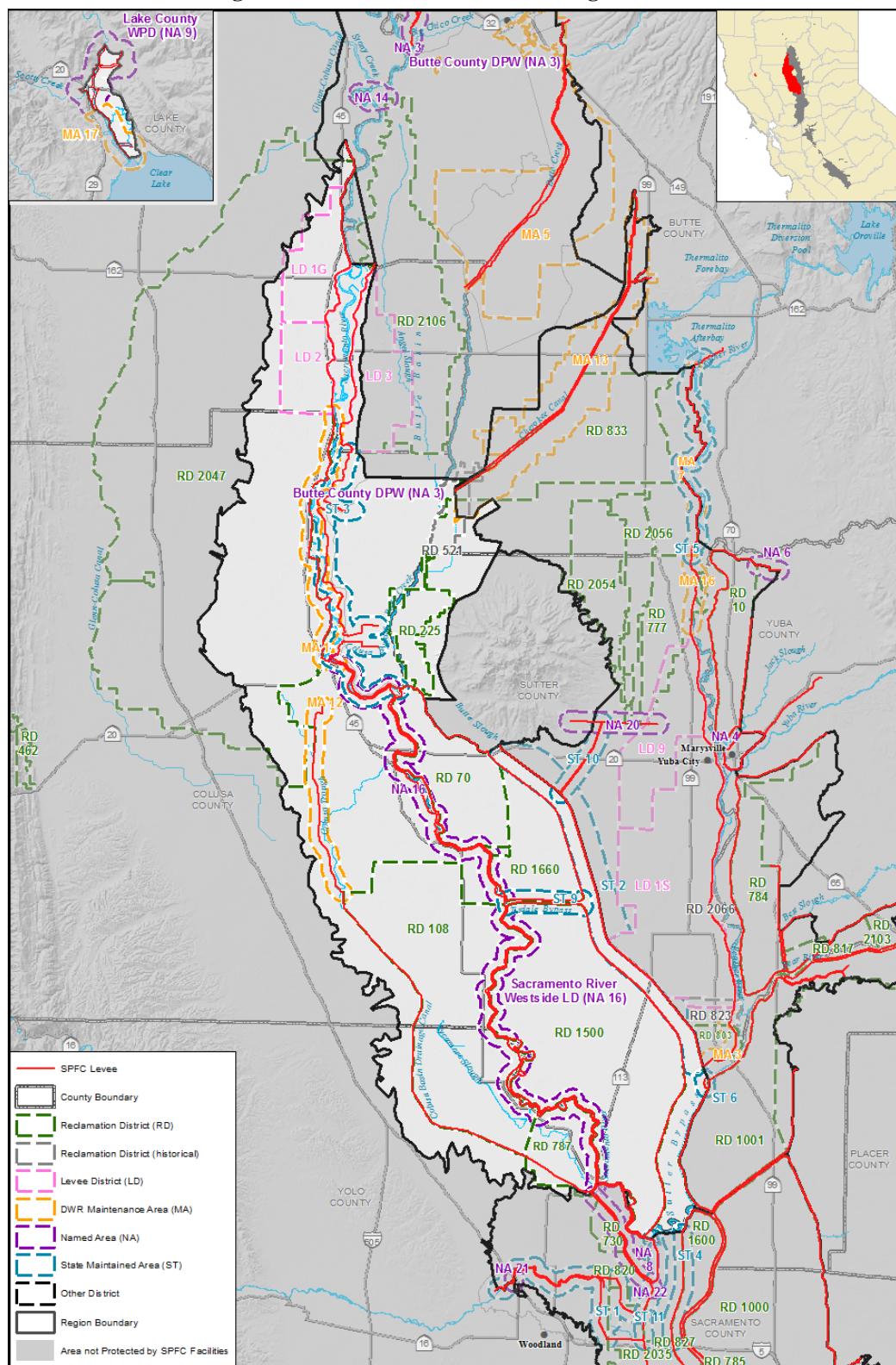


Figure 1-5. Mid Sacramento River Region LMAs



1.8.1. Local Public Agencies

Local levee districts, reclamation districts, and state maintenance areas, known collectively as LMAs, regularly patrol, maintain, and repair the levees within their jurisdictions as well as fight floods when they occur. The LMAs have given assurances to the CVFPB that they will operate and maintain the levees that are a part of the SPFC (Project levees) (see Table 1-1, Figure 1-4 and Figure 1-5) in perpetuity in accordance with criteria established by USACE. The LMAs were the primary local partners in this RFMP process.

Table 1-1. Local Maintaining Agencies for the SPFC Levees in the MUSR Regions

| Local Maintaining Agency | County | Stream | Total Miles of Levee |
|---|--------|---|----------------------|
| Butte County Public Works | Butte | Mud Creek, Sycamore Creek, Dry Creek, Sheep Hollow Creek, Big Chico Creek Diversion Channel | 24.7 |
| Tehama County Flood Control & Water Conservation District | Tehama | Deer Creek, Elder Creek | 13.6 |
| Levee District 1 | Glenn | Sacramento River | 12.5 |
| Levee District 2 | Glenn | Sacramento River | 4.9 |
| Levee District 3 | Glenn | Sacramento River | 12.2 |
| Reclamation District 70 | Sutter | Sacramento River, Sutter Bypass | 23.6 |
| Reclamation District 108 | Colusa | Colusa Basin Drain | 20.9 |
| Reclamation District 787 | Yolo | Colusa Basin Drain | 4.4 |
| Reclamation District 1500 | Sutter | Sacramento River, Sutter Bypass | 54.4 |
| Reclamation District 1660 | Sutter | Sacramento River, Sutter Bypass | 12.1 |
| Lake County Watershed Protection District | Lake | Middle Creek, Scott's Creek, Alley Creek, Poge Creek, Clover Creek | 10.5 |
| Sacramento River Westside Levee District | Colusa | Sacramento River | 50.2 |
| DWR Sutter Yard Maintenance Area 1 | Colusa | Sacramento River | 17.1 |
| DWR Sutter Yard Maintenance Area 5 | Butte | Butte Creek, Little Chico Creek Diversion | 33.3 |
| DWR Sutter Yard Maintenance Area 12 | Colusa | Colusa Basin Drain | 11.3 |
| DWR Sutter Yard Maintenance Area 17 | Lake | Middle Creek | 3.9 |
| DWR Sutter Yard Statutory Area 3 | Colusa | Sacramento River | 27.2 |
| DWR Sutter Yard Statutory Area 9 | Sutter | Tisdale Bypass | 8.9 |

In addition to the LMAs listed previously, the following list shows the other local public agencies that were involved in this Mid and Upper Sacramento River RFMP planning process:

- Glenn County Planning and Public Works
- Colusa County Department of Public Works
- City of Colusa
- City of Chico
- Colusa Basin Drainage District
- Rock Creek Reclamation District
- Reclamation District 2140
- Reclamation District 2047

- Western Canal Water District
- TC Canal Authority
- Glenn-Colusa Irrigation District
- Princeton-Codora-Glenn Irrigation District
- Gerber/Las Flores CSD
- Richvale Irrigation District
- Richvale Sanitary District
- Hamilton City F.D.
- Ord Bend F.D.
- Robbins F.D.
- Sacramento River Fire Protection District
- Glenn-Colusa F.D.
- Butte County OEM
- Sutter County OEM
- Tehama County OES
- Yolo County OES
- Colusa County OEM
- Glenn County Sheriff's Department

1.8.2. *State Agencies*

Central Valley Flood Protection Board

The CVFPB, with regulatory authority over the SPFC levees, has given assurances to USACE that the federally-authorized Project levees will be operated and maintained in accordance with federal requirements. The CVFPB has the authority to serve as the non-federal sponsor for capital improvement projects for levees in the Regions, regulates encroachments, and works to assure that the various components function as a system.

California Department of Water Resources

DWR, primarily acting through the Division of Flood Management, is responsible for State-level flood management in the Planning Area, including cooperating with USACE in project planning, design, and funding; cooperating with the National Ocean and Atmospheric Administration (NOAA) in flood and water supply forecasting; operating the Flood Operations Center; providing flood fight assistance for local agencies; and maintaining portions of the flood management system.

DWR's levee maintenance responsibilities include portions of the system designated for State maintenance in the California Water Code (CWC §8361(f)) and operating Maintenance Areas (MAs) when local agencies cannot or choose not to meet the maintenance obligations established under the assurances given to the CVFPB and USACE (CWC §12878 et. seq.). Under these authorities, DWR will assume responsibility for levee maintenance.

California Office of Emergency Services

The California Office of Emergency Services (Cal OES) has overall State emergency response management authority, which among other things, includes assuring that State and local agencies operate in accordance with the Standardized Emergency Management System (SEMS).

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) administers State laws and regulations regarding the protection of fish, wildlife, plant and native habitat resources, and as such, exerts permitting authority over flood control project construction, operation, and maintenance activities, as well as managing State wildlife areas and ecological reserves in the region. There are several state listed species that are known to occur in the region including Townsend's big-eared bat, Swainson's hawk, California black rail, greater sandhill crane, bank swallow. A complete list of special status species with potential to occur in the region is included in chapter 6. Under Sections 1600-1607 of the California Fish and Game Code, the California Department of Fish and Wildlife regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. CDFW also administers a number of laws and programs designed to protect fish and wildlife resources. Principal of these is the California Endangered Species Act of 1984 (CESA – Fish and Game Code Section 2050 et seq), which regulates the listing and “take” of endangered and threatened species. A “take” of such a species may be permitted by CDFW through issuance of permits pursuant to Fish and Game Code section 2081.

State Water Resources Control Board and the Regional Water Quality Control Board, Central Valley Region

The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Board, Central Valley Region (RWQCB), administer State water rights and water quality laws and regulations. The SWRCB, given its authority over water rights, including stream diversions, may exert regulatory authority over flood control or environmental restoration projects that result in new diversions from existing channels. The RWQCB requires that construction projects, such as levee improvement projects, avoid injurious discharges from worksites to streams by preparing and adhering to Stormwater Management Plans and following Best Management Practices for chemicals, diesel fuel, drilling fluid, and other typical construction fluids. The RWQCB also works closely with USACE when it issues Clean Water Act, Section 404 permits (regulates the discharge of dredged and fill material into waters of the United States, including wetlands), which must include a certification by the RWQCB that water quality will not be impaired (Section 401 permit).

California Department of Conservation

The California Department of Conservation (DOC) is responsible for administering the California Surface Mining and Reclamation Act (SMARA) of 1975. It assures that local governments, such as cities and counties, adopt and administer ordinances compliant with the law. SMARA is an important consideration for most flood control projects, as it applies to any projects that disturb more than one acre of land or move more than 1,000 cubic yards of material. SMARA compliance involves formulating projects that do not result in injurious discharges from the disturbed area during the mining operation, followed by a reclamation plan which restores the mined land to beneficial use (DOC, 2013).

DOC also administers the Williamson Act, enacted in 1965, designed to help preserve agricultural land through property tax incentives and long-term contracts. It was enhanced in 1998 with the addition of Farmland Security Zone (FSZ) provisions, which offers additional incentives to extend the contract period from the normal 10-year period to 20 years. Butte, Colusa, Sutter, and Tehama Counties participate in the Williamson Act program. These counties also participate in the FSZ provisions as well.

The DOC also administers various grant programs for the acquisition of agricultural and open space preservation (DOC, 2013). Such programs may work synergistically with non-structural flood management projects, which may improve flood system capacity, reduce long-term risks to life and property, and improve resiliency through actions such as agricultural conservation easements, open space easements, levee setbacks and floodplain restoration, where locally supported and feasible.

1.8.3. *Federal Agencies*

U.S. Army Corps of Engineers

At the federal level, USACE is primarily responsible for planning, designing, and constructing federally-authorized flood management facilities, including dams, levees, and other structures. It also develops the operational rules for federally-funded flood control reservoirs, which include most of the major reservoirs on Central Valley streams. Following the Hurricane Katrina Gulf Coast disaster of 2005, USACE has implemented the Levee Safety Program (LSP), promulgated strict vegetation management guidelines, and strengthened its national levee inspection program. USACE regulates modifications to existing federal levees through Section 408. USACE also has regulatory responsibility for administering and enforcing Section 404 of the Clean Water Act, including issuing individual permit decisions and jurisdictional determinations; developing policy and guidance; and enforcing Section 404 provisions.

National Weather Service

The National Weather Service (NWS), a part of NOAA, operates centers throughout the United States that monitor and forecast climate, weather, severe storms, and runoff. In California, the NWS weather forecasting centers are supplemented by the California Nevada River Forecast Center (CNRFC) which cooperates with DWR to issue flood and water supply forecasts (CNRFC, 2013). These forecasts are critically important to the Regions because under winter storm conditions, flow in the rivers and local streams can increase rapidly, causing extreme peril for residents and property. Accurate and timely flood forecasts are an important component of the Regions' flood risk management system.

NOAA Fisheries

The Federal Endangered Species Act (16 USC 1531 et. seq.) requires formal consultation if a project will result in the “taking” of a species currently listed as threatened or endangered. Section 9 of the Act prohibits the “taking” of listed species. NOAA Fisheries is responsible for the protection of anadromous fisheries, which migrate through and spawn in the various channels within the MUSR Regions. In the Regions these species include green sturgeon, Central Valley steelhead, and Central Valley Chinook salmon. NOAA Fisheries plays an important role in the flood project planning process, providing guidance on ways to design and operate flood control works to minimize impacts and enhance fisheries habitat. Project proponents must consult with

NOAA Fisheries in all phases of federal flood management project planning, design, and construction that have the potential for impacting species of concern. In administering various federal statutes and regulations protecting migratory species of concern, NOAA Fisheries may also impose conditions on the operation of multi-purpose dams and reservoirs with federal participation, including the major reservoirs protecting the region (NOAA Fisheries, 2013).

U.S. Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) plays a similar role to that of NOAA Fisheries, with a focus on terrestrial, avian, and resident fish species and their habitats, and ensuring compliance with the Federal Endangered Species Act. In the Regions, some of the key species of concern are the green sturgeon, Central Valley steelhead, and Central Valley chinook salmon, giant garter snake, western yellow billed cuckoo, and valley elderberry long horned beetle, . In the Mid-Sacramento Region, the vernal pool fairy shrimp is also of concern. USFWS plays an important role in the flood project planning process, providing guidance on ways to design and operate flood control works to minimize impacts and enhance fish and wildlife habitats. USACE and other project proponents must consult with USFWS in all phases of federal flood management project planning, design, and construction (DWR, 2012, Atlas Map 19A and 19B).

The Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) plays a multitude of flood management roles, including managing the National Flood Insurance Program (NFIP), which includes mapping of and classification of flood hazards in the Regions. FEMA administers the Disaster Mitigation Act of 2000 (DMA 2000), which requires that local communities evaluate the natural hazards within their boundaries and develop mitigation plans for those hazards in order to maintain eligibility for its Pre-Disaster Mitigation (PDM) and Hazard Mitigation Grant Programs (HMGP). FEMA also provides federal disaster recovery assistance in the event of federal emergency declarations or disaster declarations. Federal emergency management efforts are structured in accordance with the National Incident Management System (NIMS).

1.8.4. *Other Organizations*

The following lists the other organizations and agencies that were involved in this Mid and Upper Sacramento River RFMP planning process:

- Colusa Indian Community Council
- Sacramento River Conservation Area Forum
- Family Water Alliance
- County Resource Conservation Districts
- County Farm Bureaus
- M&T Ranch
- Llano Seco
- The Nature Conservancy
- River Partners
- American Rivers
- Westervelt Ecological Services