

State of California
The Resources Agency
Department of Water Resources
Division of Flood Management



2006
INSPECTION REPORT
OF THE
FLOOD CONTROL PROJECT
MAINTENANCE AND REPAIR

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FOREWORD

Each spring and fall since 1947, the Department of Water Resources (DWR) has inspected and reported on the status of maintenance of flood control levees, channels, and other major works operated under cooperative arrangements between federal, State and local public entities. These flood control facilities are located on the floors of the Sacramento and San Joaquin Valleys and in Plumas, Lake, Placer, Modoc, and Solano counties.

The physical and procedural context within which these inspection activities take place, are described later in the Introduction. This work is part of the process of assurances given by the State to the federal government that certain flood control facilities constructed by the U.S. Army Corps of Engineers (USACE) for local flood protection shall be continuously maintained in such a manner and operated at such times and for such periods as may be necessary to obtain the maximum benefits as stated in the "Code of Federal Regulations", Title 33, Chapter II, Part 208, Flood Control Regulations. The Superintendent (or manager, engineer, engineer/manager) of each Local Maintaining Agency, including reclamation districts, levee districts, cities, county flood control districts, or county agencies, within the limits of any federal flood control project in the Sacramento and San Joaquin Rivers watersheds, is responsible for maintaining and operating the project works located within the boundaries or jurisdiction of such an agency.

To meet federal flood control regulations, DWR's inspection program requires the federal flood control facilities to be inspected four times each year, in intervals not exceeding 90 days. This report is the last of the quarterly reports on the status of maintenance of these facilities, and is based on evaluation of DWR's fall 2006 inspections and any deficiencies affecting structural integrity of the system levees. The fall inspections document corrected deficiencies noted during the previous spring inspection and any remaining deficiencies entering flood season. DWR assigns an overall rating for each LMA during the fall inspection period.

In addition to the State inspections documented in this report, it should be noted that USACE also performs its own independent "spot" inspections each year as part of the continuing federal interest in the maintenance and operation of the Sacramento and San Joaquin Rivers flood control systems. These "spot" inspections are documented in an annual report prepared by the USACE.

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1 INTRODUCTION

The purpose of this report is to document the results of the California Department of Water Resources (DWR) fall 2006 flood control system inspections and any deficiencies that may be affecting the structural integrity of the system levees. This report is for use by the U.S. Army Corps of Engineers (USACE), The Reclamation Board (Board), Local Maintaining Agencies (LMA), and other interested parties.

As stated in USACE's Standard Operation and Maintenance (O&M) Manual, each maintaining district is required to perform a detailed inspection every 90 days, including prior to the flood season, immediately following each major high water period, and at any other time deemed necessary by the LMA Superintendent. The findings of these inspections are to be reported to The Reclamation Board's Chief Engineer through DWR's Flood Project Integrity and Inspection Branch (FPIIB).

To meet Federal Flood Control Regulations, each year the federal flood control facilities are to be inspected four times, in intervals not exceeding 90 days. As requested by the Reclamation Board, reports on the inspections will be submitted quarterly to the Board.

1.1 Background

The State of California's extensive flood control system relies heavily on adequate operation and maintenance activities. Guidelines have been developed to assist the LMA in carrying out its responsibilities for levee and channel maintenance. To monitor these maintenance activities, DWR performs inspections and reports on the maintenance of flood control system project levees, channels and structures performed by the LMA. The inspections thus verify that local agencies are performing their legal and statutory responsibilities and are meeting their legal obligations to operate and maintain the flood control project. Designated floodways are also inspected periodically.

The operation and maintenance of encroachments on flood control project facilities is also very important. The Reclamation Board must authorize all encroachments on flood control project facilities prior to their construction. DWR inspects the construction of these projects to ensure conformance with the approved plans and permit conditions. DWR also reports unauthorized encroachments to the Reclamation Board and works with the LMA to abate unauthorized encroachments.

More details and background on the flood control system, its maintenance and inspection requirements, and encroachments are provided below.

1.1.1 Flood Control System Overview

Congress authorized the Sacramento River Flood Control Project (SRFCP) in 1917, and subsequent supplemental authorizations (e.g. Sacramento River major and minor tributaries, American River levees, etc.) have added components to the SRFCP over the years. The San Joaquin River Flood Control System consists of a number of separate federally authorized flood control projects, most of which have been built since the 1940's (e.g. Merced and Fresno counties stream groups, Lower San Joaquin River, etc.). In addition, the Reclamation Board has designated floodways on virtually all the Sierra rivers draining into the San Joaquin Valley and the Tulare Lake Basin. The two major river flood control systems (Plates 1 and 1A) have combined totals of approximately 1,613 miles of federal project levees (shown on Plate 2), 1,200 miles (148,000 acres) of designated floodways (shown on Plate 2), several thousand acres of project channels (shown on Plate 2), and 56 other major flood control works (e.g. overflow weirs, flood relief structures, outfall gates, and the Sutter Bypass pumping plants). Designated Floodways, adopted by the Reclamation Board, are a significant part of the flood control system and include many major rivers and streams that are not Flood Control Project Channels.

The federal government, acting through the USACE, designed and constructed many of these federal levees and other flood control works; some existing levees were also incorporated into the Sacramento and San Joaquin flood control systems through the passage of federal statutes. The State of California generally provides lands, easements, and rights-of-ways when necessary for project construction. An exception to this process is the Lower San Joaquin River Flood Control Project that was designed and constructed to federal standards by the State of California (substituting physical works for acquisition of more costly flowage easements required for the authorized federal project). Local public entities within both river systems have the responsibility, liability and duty to maintain and operate the levees and other flood control works on a day-to-day basis in accordance with guidelines provided in the USACE Standard O&M Manual, and each applicable supplement for individual project units. The only flood control features for which operation and maintenance are not performed by local entities are those SRFCP works maintained by DWR in accordance with Water Code Section 8361, and those facilities within Maintenance Areas (MA) that are maintained by DWR, with local beneficiaries paying the costs under Water Code Section 12878.

1.1.2 Flood Control System Maintenance

When the Board adopted the projects, a Local Maintaining Agency was identified for every project feature. For SRFCP, each Local Maintaining Agency's responsibilities were set in Water Code Section 8370. Otherwise, each Local Maintaining Agency signed an assurance agreement. This agreement is specific and details the responsibility of the local district. Each segment of the flood control project is described in a supplement to the USACE's Standard O&M Manual. These supplemental manuals serve as a guide to assist each district in carrying out its responsibilities for levee maintenance. Section 2.3 of this document describes some of the standards to be met by the LMAs in the performance of their routine work.

1.1.3 Flood Control System Inspections

The Division of Flood Management's Flood Project Integrity and Inspection Branch provides engineering support in the assessment of hydrologic, hydraulic and geotechnical performance to evaluate system performance and rehabilitation of the Sacramento and the San Joaquin River Flood Control systems levees, channels, and related structures in support of the Department's responsibilities under Water Code Sections 8360, 8370, 8371, and 12878. The Branch provides technical support and recommendations to the Reclamation Board on site-specific levee integrity issues, maintenance area formation, and enforcement of unauthorized encroachment violations. The Branch performs visual inspections to ensure that levees, channels and related structures for which the State has provided assurances to the federal government are operated and maintained in accordance with the Code of Federal Regulations (CFR) Title 33, Section 208.10.

Local agencies have legal and statutory responsibilities pursuant to Water Code Sections 12642, 12657, and 8370 under assurance agreements with the State to operate and maintain their flood control projects "on any stream flowing into, or in, the Sacramento Valley or the San Joaquin Valley." In addition to project levees, the State also inspects designated floodways, project channels and flood control structures. In consultation with LMAs, DWR has implemented a new inspection program under which four inspections are to be performed every year.

The U.S. Army Corps of Engineers Flood Control Projects Inspection Guidelines form the basis of this new inspection program. DWR held four public workshops in April of 2006 to discuss these guidelines and inspection requirements. With input from the LMA, the new inspection program has been developed as explained in Section 2.

1.1.4 Flood Control System Encroachments

California Water Code Section 8710 requires the Reclamation Board's approval of all plans for encroachments on flood control project facilities. Prior to approval, the Board receives recommendations from DWR and USACE relating to engineering, maintenance, and the flood control aspects of the encroachment to ensure that the encroachment project design does not degrade the standards of USACE's Standard O&M Manual or present a risk to the public. An environmental review committee provides an assessment of the proposed encroachment. Following approval by the Board or its General Manager, DWR FPIIB inspectors are responsible for inspecting the encroachment construction to ensure conformance with the approved plans and permit conditions.

The Reclamation Board also controls encroachments within designated floodways, shown on Plate 3. While permits are required before construction of any encroachment within the designated floodway, citizens often fail to submit applications to the Reclamation Board and these encroachments are not discovered until the inspection of the floodways. Access to these floodways is limited because some owners of private lands next to the designated floodway do not allow entry. Maintaining a clear channel for flood flows is necessary to allow water to easily pass during peak flows.

FPIIB staff continually works with the LMAs to abate unauthorized encroachments. Following the Reclamation Board's direction, when a given reach of the system has numerous encroachments the Floodway Protection Section (FPS) has focused upon developing regional plans for rectifying unauthorized encroachments. When encroachments remain unabated after plans are executed and the local districts are unable to resolve the issues with the assistance of the FPS, the nonconforming individuals are brought before the Reclamation Board for further instruction, legal action and, if necessary, forced removal of the encroachments.

1.2 Inventory of Flood Control System Works

This section includes an inventory of total levee miles, number of structures by type, number and miles of project channels, and number of districts by type. The inventories are broken out by basin for the Sacramento, San Joaquin and Miscellaneous Streams and Basins.

Table 1-1 includes the number of project levee miles of the various types of levee for which maintaining agencies are responsible. Note that levees designated as either rock sites or possible decertification are still considered project levees and are supposed to be inspected by Department of Water Resources FPIIB levee inspectors.

Table 1-1: Total Levee Miles

Basin	Levee Districts	Maintained by State of California	Named Districts	Reclamation Districts	Total Miles
Sacramento River Basin	52	299	196	555	1102
San Joaquin River Basin	-	-	339	150	489
Miscellaneous Streams Basins	-	4	18	-	22
Total	52	303	553	705	1613

Table 1-2 includes a breakdown of flood control structures by type within the Sacramento River, San Joaquin River, and Miscellaneous Streams and Basins. Also, the location of these structures in the Sacramento and the San Joaquin Flood Control System is shown on Plate 4.

Table 1-2: Flood Control Structures

Basin	Weirs	Pumping Plants	Other Diversion/Control Structures	Total Structures
Sacramento River Basin	11	6	8	25
San Joaquin River Basin	2	6	9	17
Miscellaneous Streams and Basins	1	1	12	14
Total	14	13	29	56

A total of 87 channels, streams and tributaries are under the board's inspection jurisdiction. The Sacramento River projects total 40, the San Joaquin projects total 33, and small miscellaneous projects total 14. Table 1-3 includes the number of Flood Control Project Channels (not confined by project levees) and total miles for the Sacramento River, San Joaquin River, and Truckee River and Fairfield Vicinity.

Table 1-3: Flood Control Project Channels

Basin	Channels	Total Miles
Sacramento River Basin	7	58
San Joaquin River Basin	14	186
Truckee River and Fairfield Vicinity	4	5
Total	25	249

Table 1-4 includes a breakdown of the type and number of levee maintaining agencies within the Sacramento River, San Joaquin River, and miscellaneous streams basins. The location of these LMAs in the Sacramento and the San Joaquin Flood Control System is shown on Plate 1.

Table 1-4: Number of Levee Maintaining Agencies including MA's

Basin	Type of Levee Maintaining Agency				Total of all Levee Maintaining Agencies
	Levee Districts	Maintained by State of California	Named Districts	Reclamation Districts	
Sacramento River Basin	5	25	10	32	72
San Joaquin River Basin	-	-	6	26	32
Miscellaneous Streams Basins	-	1	2	-	3
Total	5	26	18	58	107

1.3 Memo 43 – New FEMA and Corps of Engineers Policies

1.3.1 Memo 43 and Deficient Project LMAs

On September 25, 2006 the Federal Emergency Management Agency (FEMA) released Procedure Memorandum No. 43 – Guidelines for Identifying Provisionally Accredited Levees (Memo 43). Subsequently, on September 26, 2006 the USACE released an internal policy guidance memorandum to provide direction and to establish the priority for use of Inspection of Completed Works (ICW) inspection funds during Fiscal Year 2007. Memo 43 has direct implications to FEMA certification, and USACE internal policy guidance on the ICW program has the potential to deny a local maintaining agency eligibility status for flood damage rehabilitation assistance under Public Law 84-99 (PL 84-99) if the minimum acceptable level of maintenance cannot be sustained. The USACE originally published a list of 36 California Project LMAs having inadequate maintenance that were to lose their PL 84-99 rehabilitation eligibility if their maintenance deficiencies were not corrected and verified prior to April 2007.

The USACE reviewed the DWR annual inspection reports written between 2002 and 2005. LMAs with questionable maintenance performance were identified and inspected by the USACE and the list of 36 Project LMAs was created. Subsequent joint (USACE, DWR, LMA) verification inspections of identified levee maintenance deficiencies reaffirm the USACE high expectations for levee maintenance and the Local Maintaining Agency failure to perform adequate levee maintenance on a consistent basis. Some key maintenance deficiencies that have been consistently identified through these ongoing inspections are: brush and vegetation on levee slope; excessive trees not pruned to standards; rodent activity; lack of access; minor erosion; and many unauthorized encroachments along with a lack of adequate maintenance on authorized encroachments. The joint verification inspections identified 8 Project LMAs that corrected the noted deficiencies in the USACE inspections. Those 8 LMAs were removed from the list, leaving a final list of 28 Project LMAs within California at risk of losing their PL 84-99 coverage.

The USACE notified the Reclamation Board, which notified the 28 Project LMAs that they have until March 2008 to correct their deficiencies. Failure of a Local Maintaining Agency to correct its deficiencies within that period will result in the LMA being declared inactive for rehabilitation coverage under PL 84-99. The USACE will still provide flood fight assistance to inactive LMAs; however, any high water damage suffered by an inactive LMA will not be eligible for rehabilitation assistance. Although some of the deficiencies have the potential to be corrected within the USACE one-year grace period to retain PL 84-99 eligibility, other LMA deficiencies will require environmental agency negotiations or Reclamation Board enforcement assistance that extends beyond this grace period.

All 28 LMAs identified by the USACE are being required to submit a correction plan that clearly demonstrates how the deficiencies will be corrected. The correction plan is to be

submitted within 90 days (June 25, 2007) for USACE approval. Some correction plans will be more complex and require close interaction with environmental agencies and the Reclamation Board to correct the deficiencies. Each correction plan will include a timeline for corrective measures to be completed as well as an evacuation and communication plan.

Plans will be reviewed by DWR and the Reclamation Board and approved by the USACE. Each Local Maintaining Agency will notify DWR upon completion of its corrective measures. DWR first and then the USACE will re-verify the corrections. Those LMAs whose corrections are rated as acceptable or minimally acceptable will be removed from the maintenance deficient list. Those whose corrections are rated as unacceptable and who do not obtain a better rating by the end of the grace period (March 31, 2008) will be considered as inactive for PL 84-99 rehabilitation coverage.

Impacts of the Corps' PL 84-99 policy directive on the DWR inspection program include:

- Additional verification inspections are required on an ongoing basis. LMAs rated as fair, poor, or unsatisfactory which have corrected their deficiencies which got them on the list will require a verification inspection to retain or regain their PL 84-99 protection.
- A training program for levee inspectors and LMAs must be created and implemented, leading to uniform conformance with the somewhat more strict requirements being applied by the USACE in their evaluation of the flood project maintenance
- Because of conflicts between the USACE requirements for removal of vegetation and the California Department of Fish and Game, and the United States Fish and Wildlife Service prohibitions against removal of vegetation on flood project levees, significant environmental policy negotiations will be needed to develop reasonable vegetation standards for the California levee system. DWR may act as the mediator in the negotiations between the LMA, the USACE, and the environmental agencies with the goal being to establish standards that are consistent with balancing environmental protection with flood control. In the meantime, DWR will develop and follow interim vegetation guidelines that conform to environmental policies and provide improved maintenance. Protected vegetation will need to be inventoried and documented for future negotiations with the environmental agencies.

1.3.2 New Corps of Engineers Policies

After the completion of the fall 2006 inspections, USACE Headquarters and the Sacramento District of the USACE indicated through statements and draft documents that USACE will impose much stricter criteria for vegetation on levees and other flood project components. The proposed new USACE criteria are different from historic inspection criteria applied by DWR and the Reclamation Board in the following ways: existing trees and their root systems must be removed from levees and other project components; no new trees will be allowed, and; no trees or brushy vegetation will be allowed within 15 feet of the landside or waterside levee toes. This would apply to the strip of land an additional five feet beyond the 10 foot wide easement held throughout most of the project system by the Reclamation Board and includes removal of all root systems from trees and brushy vegetation whose driplines extend into the 15 foot wide strip.

In addition, the results of the inspections done by USACE to create the list of 28 LMAs with maintenance deficiencies and the proposed new criteria indicate a lower tolerance for encroachments onto the levee or the Reclamation Board's 10 foot wide easement.

The impacts of such a drastic change in vegetation criteria and the more critical evaluation of encroachments will be very significant and widespread. In response, during the spring 2007 inspections, DWR inspectors are documenting the presence of trees, vegetation, and encroachments that would likely be considered unacceptable under the expected USACE criteria.

If the expected criteria are adopted, dozens of LMAs with heretofore acceptable maintenance performance could be rated as unacceptable. Environmental agency laws, regulations, and requirements would make it extremely expensive to meet the vegetation criteria and impossible to do so in the short term. It would also be extremely difficult and expensive to remove the encroachments required under the USACE criteria.

DWR and the Reclamation Board will petition USACE asking for a more comprehensive approach to levee and project maintenance that would allow for the most cost effective application of funds to keep the system safe. Whether the proposed USACE criteria are applied as proposed or in a more limited manner that allows some trees to remain on levees, it will take significant time to resolve all of the environmental and financial issues inherent in removing a huge amount of vegetation.

The time period required to correct maintenance deficiencies could vary depending on several factors. Conflicts exist between USACE maintenance requirements for removal of vegetation and both the California Department of Fish and Game and U.S. Fish and Wildlife Service prohibitions against vegetation removal on flood project levees. Significant environmental policy negotiations will be needed to develop reasonable vegetation standards for the California levee system. DWR may act as the mediator in the negotiations between the LMAs, the USACE, and the environmental agencies with the goal being to establish standards that are consistent with balancing environmental protection with flood control. Unauthorized encroachments and right-of-way access issues also complicate maintenance activities. The Reclamation Board may need to engage its enforcement authority to remove unauthorized encroachments that the Local Maintaining Agencies cannot resolve. Additional right-of-way acquisitions could provide access to existing private land to allow maintenance and flood fight operations to occur.

In the meantime, historic maintenance standards will be applied during spring 2007 inspections and normal maintenance efforts will be expected of all LMAs. Those LMAs that continue to show inadequate maintenance will be subject to the Maintenance Compliance Process, which follows.

1.4 Maintenance Compliance Process

Some of the LMAs have shown a history of poor maintenance practices. Many other LMAs will receive unacceptable ratings if the USACE criteria are adopted. All LMAs will be encouraged to improve their practices and resolve their identified deficiencies. Negative impacts that could result from failure to improve are loss of PL 84-99 rehabilitation eligibility and FEMA certification, as well as having the State of California take over their maintenance.

If an LMA cannot resolve the identified deficiencies within a reasonable period of time, or if it fails to complete the approved correction plan or are otherwise given an inactive classification, the Maintenance Area (MA) formation process could be initiated in accordance with Water Code Sections 12878 through 12878.21.

Some criteria that could be used to screen these deficient projects and to select an LMA for inclusion in the MA formation process are as follows:

- 1) Severity – Severity is based on the type of protection the project provides as related to lives and property/infrastructure at risk. In addition, the nature of deficiencies as they relate to structural integrity is important to delineate.
- 2) Magnitude/Scale of Project – This relates to factors such as size of the LMA or number of miles affected, cost to restore the levee to adequate maintenance standards and annual maintenance cost thereafter compared to the annual benefit received by the protected area, ability and willingness of the LMA to pay for levee restoration and maintenance thereafter, and the financial effects for the levee not being eligible under PL84-99.
- 3) Environmental or Right of Way Issues – The concern here is identifying the reason for deferred maintenance. Do environmental regulations related to brush and vegetation clearing, encroachment enforcement issues, or access issues affect the LMA's ability to perform maintenance? If so, performing adequate maintenance may take more time to achieve.
- 4) History – The history of maintenance deficiencies not being addressed by the LMA is also an important factor to consider.

The MA formation process consists of:

- Develop a Statement of Necessary Work, including the first two years' operational budget
- Develop the regional MA boundary
- Begin the public hearing process, which allows an adjoining LMA or public entity to provide maintenance services
- Create the assessment district to fund the maintenance activities

The MA formation process is initiated to comply with Water Code Section 12878, and to notify the local agencies that maintenance deficiencies exist and need to be corrected. Formation of a State MA is only one possible solution. The deficient LMA is provided the opportunity to correct the deficiencies if it is willing and able to do so. The possible outcomes of initiating the MA formation process consist of:

- LMA provides improved maintenance within existing budget and resources
- LMA provides improved maintenance with additional Proposition 218 assessment resources
- State MA is formed to correct the deficiencies
- Formal USACE decertification of the project feature

In summary, DWR will follow these steps to achieve improved maintenance:

- Obtain Action Plans from any LMA selected for MA formation process
- Identify time period required to correct problems
- Send notification letter to appropriate land use agency indicating LMA inspection status, maintenance history, and PL 84-99 eligibility
- If maintenance obligations are not met in a reasonable time frame, MA formation process begins as outlined above

2 INSPECTION PROCEDURES AND RATING CRITERIA

2.1 New Inspection Procedures

Inspection procedures were modified in April 2006 to meet the requirements in Title 33 of the CFR of four separate levee inspections each year. Spring and fall inspections will be done by DWR levee inspectors as has been done in previous years. In addition, summer and winter inspections will be done by each LMA with DWR providing technical guidance. A new rating system of Satisfactory, Marginally Satisfactory, and Unsatisfactory was used to evaluate levee maintenance and condition. This system is explained in Section 2.2. In January 2007 the USACE proposed another revision to the inspection rating system. This new system will be based on the "USACE Inspection Guide for Flood Control Works". This new rating system will rate each item Acceptable, Minimally Acceptable, or Unacceptable. This new interim system will be implemented for the DWR levee inspectors during their spring 2007 joint levee inspections. The rating criteria will be item specific unlike the current rating system, which is interpretive.

Flood Project Integrity and Inspection Branch staff held four public meetings from Yuba City to Turlock in April 2006 to explain the new inspection program to representatives of the local maintaining agencies. The new inspection schedule and use of the new inspection sheets were described to the end users. The 2006 inspection program is as follows:

- Spring inspections by DWR occur after high water levels have receded. Inspection reports containing the findings and identifying areas needing improvement are sent to the LMA. The LMA will use the reports in their maintenance and improvement efforts to ensure compliance with Title 33. DWR levee inspectors will coordinate with the LMA and may accompany them on joint summer inspections to discuss non-compliance and needed improvements; otherwise, the LMAs will inspect their levees and report back to DWR that they have done so.
- Fall inspections by DWR occur before the beginning of flood season to verify that needed maintenance or improvements have been completed. Fall inspection reports will also be sent to the LMA. Failure to make necessary improvements can result in the lowering of the overall rating of an LMA's levees. The LMA will perform the winter inspections to monitor levee performance during the high water period and identify any new deficiencies, then report findings to DWR.

In addition to the spring and fall levee inspections, summer inspections by DWR inspectors focus on structures, pumping plants, project channels, and designated floodways. The designated floodways are not currently inspected at consistent intervals. Some designated floodways are inspected once every year and others are not. These inspections may include physical on-the-ground inspections or may use aerial photography as a means to inspect the floodways. DWR is moving toward a more consistent program to cover these inspections and report on the status of the floodways pending authorization of new positions to hire additional staff to perform this work.

Inspections of the Sacramento and San Joaquin Flood Control Project levees, designated floodways, project channels, and other major flood control works consist of visual inspections by DWR's levee inspectors and in some cases by the LMA. Information gathered during these inspections is used to verify adherence to the maintenance standards or to document otherwise. Separate levee inspection sheets are developed for each district during the spring and fall inspections and are shared with the local levee maintaining agencies and USACE. Using information obtained in the fall joint inspection, inspectors rate the condition of the levees based on the rating criteria described below, but do not perform an assessment of the structural integrity of the levees or their foundations.

In addition to the field inspections for deficiencies in levees, structures, floodways and channels, the flood control system is inspected for unauthorized encroachments and permitted construction projects on flood control facilities for compliance with the Reclamation Board permit conditions.

2.2 Rating Criteria

The new rating standards for levees used by DWR inspectors in 2006 were derived from the "U.S. Army Corps of Engineers Inspection Guide for Flood Control Works" and the State's regulations for vegetation on oversized levees. Ratings of "S" for Satisfactory, "M" for Marginally Satisfactory and "U" for Unsatisfactory are given for each criterion. The ratings are defined as follows:

Satisfactory (S) – *The rated item will function as designed and intended during the next flood event. This corresponds with **Compliant (C)** for the pre-2006 ratings.*

Marginally Satisfactory (M) – *The rated item has a minor deficiency that needs to be corrected. The deficiency will not seriously impair the function of the item during the next flood event. This corresponds with **Improvement Needed (I)** for the pre-2006 ratings.*

Unsatisfactory (U) – *The rated item is so serious that the item will not adequately function in the next flood event, compromising the project's ability to provide reliable flood protection. This corresponds with **Non-Compliant (N)** for the pre-2006 ratings.*

2.3 Levee Maintenance Criteria

When applying the ratings described above, a number of factors pertaining to levee maintenance are considered. The following 12 criteria are extracted from Title 33, CFR, except for the reference within Item 4 to The Reclamation Board's California Code of Regulations, Title 23, Waters, Division 1, Reclamation Board, §131, Table 8, Suitable Vegetation.

1. Readiness for Flood Emergency

Each district shall have an organized plan to combat a flood situation effectively. This should include the appointment of a Superintendent to supervise and execute the plan, maintain a stockpile of standard flood-fighting equipment and materials, and have available a network of handheld radios or cellular telephones for communication while patrolling during a flood emergency.

2. Adequate Levee Section and Grade

Each district must perform the work necessary to maintain levee side-slopes, grade, and crown width to meet the standards for its particular reach of the levee system. Levee design standards are summarized on Plate 5.

3. Adequate Encroachment Control

Each LMA is held responsible to prevent the construction of, or to require the removal of any illegally encroaching structures on the levee or within the ten-foot regulatory easement at the landward toe of the levee. Also, the maintaining agency must stop any modifications or alterations to the levee. If any person or organization deems any construction or modification necessary within the levee regulatory easement, that person or organization must apply for an encroachment permit. The permit may only be issued by The Reclamation Board. Failure of the local agency to control unauthorized encroachments can threaten the integrity of the levee, interfere with levee patrol visibility, hamper a flood fight and, therefore, be cause for downgrading the district's annual rating in this report.

4. Vegetation and Obstructions

Each district shall have a program to selectively control vegetation on the levee slopes and in rock revetments. This requirement provides visibility for inspection and patrol and prevents interference with flood-fighting activities. Some vegetation on oversized levees is permitted in accordance with standards as set forth in the California Code of Regulations, Title 23. However, present DWR inspection criteria allow vegetation on standard sized levees as well, provided that visibility and flood fight capabilities are maintained. Both Water Side and Land Side slopes are rated for vegetation and obstructions. An un-maintained band of vegetation is allowed along the waterside toe on levees of sufficient height.

5. Rodent and Animal Control

It is imperative that each district has a rodent control program. Diligent efforts to eradicate burrowing animals are a necessity, and eliminating them from an infested levee is extremely difficult. Control of these animals must be pursued frequently and persistently to assure safety of the levee during flood periods. Repair of the burrows is necessary to maintain the integrity of the levee. This category also includes effective control of grazing animals on the levee or easement.

6. Seepage/Boils

Seepage under or through the levee can cause boils, leading to erosion and possible failure of the foundation or structure of the levee. Seepage and boils must be identified, monitored, controlled, and corrected as quickly and effectively as possible.

7. Slope Stability and Repair of Cracks, Erosion and Caving

Each district shall maintain slope stability and repair cracks, flow current or wave wash erosion, and caving or other structural problems. Timely repair of these problems is critical. Failure to address slope stability problems and repair cracks, erosion, or caving could lead to levee failure.

The Superintendent is required to report to The Reclamation Board's Chief Engineer any suspected or known structural abnormalities found during his inspections. Such un-repaired structural problems are also cause for downgrading of the district rating.

8. Condition of Rock Revetment

Each district shall make all repairs to scour, wash, settlement, or failure of any portion of rock revetments. Rock revetments have been installed at locations where stream flow conditions indicate the need for such protection. Early detection and prompt repair will result in a minimum of effort and reduce the cost to restore the revetment.

9. Condition of Levee Crown and Roadway

Each district is required to keep crown roadways shaped and graded to provide proper drainage and all weather access. Repair of ruts and addition of gravel ensures a serviceable road under even the most adverse conditions.

10. Condition of Pipes and Interior Drainage System

Each district must examine all structures situated through, in or on the levee for stability and structural soundness and record its observations twice annually. All component parts must be examined for proper operation and reliability before the start of each flood season. New structures should be installed or older structures repaired only in accordance with adopted Reclamation Board standards and under the supervision of qualified Reclamation Board personnel. Defective structures must be repaired, replaced, or removed immediately. Although maintenance and repair of pipes and other structures passing through a levee are the responsibility of the owner (e.g. a farmer owning an irrigation pipe), the LMA is responsible for inspecting the pipes for corrosion, collapse, valve integrity, seepage, and any other condition, which could threaten the integrity of the levee. Because of its full-time presence, the LMA is most able to discover and identify actual and potential problems and should make all efforts to immediately notify DWR of any problems found and thereafter include the problems on their inspection reports until they are resolved. DWR works with the Reclamation Board to require the timely repair or removal of the pipes or other structures that threaten the levee integrity.

11. Concrete Floodwalls / Closure Structures

In some instances, a portion of a levee is not built to the design height of the rest of the levee. A floodwall, usually either concrete or driven piling, is built to provide necessary hydraulic capacity. In some cases, due to space constraints, a floodwall may be constructed in lieu of a levee. Where a roadway or railroad passes through a levee or floodwall, a closure structure is built on either side of the roadway to hold gates or barriers to be installed before high water events. Floodwalls, closure structures, gates, and barriers must be properly maintained, structurally sound, and of proper height and design. Gates and barriers and installation paths must be readily accessible for timely installation and dependable performance.

12. Overall Rating and District Maintenance Program

The Overall Ratings are given by each inspector and are based upon each inspector's observations as reported during the spring or fall inspection. Crucial areas focused upon are the LMA's readiness for conducting flood fights; adequate levee section and grade; presence of encroachments that would significantly impede a flood fight or obstruct a proper inspection; wild growth that would preclude a proper inspection or occlude a boil or major seepage spot; presence of excessive rodents, un-repaired burrows in the levee section, or damage caused by livestock; significant movement or the appearance of failure in the levee section; an inadequately engineered or maintained all-season crown roadway; and known pipe failures. Due to the nature of these observations, the ratings are based on the judgment of inspection and engineering staff.

3 REPORT ON INSPECTION ACTIVITIES

Fall 2006 inspections were completed on all 1,613 miles of levees with ratings given to items relating to: levee section and grade; encroachment control; vegetation and obstructions; rodent and animal control; seepage and boils; slope stability and repair of cracks, erosion, and caving; rock revetment; crown and roadway; pipes and interior drainage system; floodwalls and closure structures; and overall condition and maintenance program. Additional erosion in the San Joaquin River basin was surveyed and documented separately and is discussed in Section 4.2.2.

3.1 Levee Maintenance

3.1.1 Overall Levee Maintenance Ratings

Overall levee maintenance ratings are assigned to each LMA based on each inspector's observations as reported during the fall inspection. The overall ratings given are subjective and depend on each inspector's interpretation of the overall condition of the levees. A summary of the overall status of the maintenance of the flood control system levees is provided in Table A-1.

3.2 Channel Maintenance

A total of 87 channels, streams and tributaries are under the board's inspection jurisdiction. The Sacramento River project totals 40, the San Joaquin project totals 33, and 14 are from small miscellaneous projects.

Reports on channel clearance activities and overall conditions have been submitted to DWR by several LMAs and are summarized in tables A-8, A-9 and A-10.

3.3 Flood Control Project Pumping Plants

Utilizing the USACE inspection criteria 7 additional inspection items were added to the current DWR Pump Station rated items list: Pumps Station Operating Log, Operation and Maintenance Manual or a posted operating instruction guide, Communications, Operator Safety, Security Fencing, Power, and Metallic features condition. All 13 Project facilities were inspected under the revised inspection criteria - 12 were rated satisfactory based upon flood readiness and 1 marginally satisfactory due to a pipe outlet condition.

4 OTHER BRANCH ACTIVITIES

The Division of Flood Management's Flood Project Integrity and Inspection Branch provides engineering support in the assessment of hydrologic, hydraulic and geotechnical performance to evaluate system performance and rehabilitation of the Sacramento and the San Joaquin River Flood Control systems levees, channels, and related structures in support of the Departments' responsibilities under Water Code Sections 8360, 8370, 8371, and 12878. The Branch provides technical support and recommendations to the Reclamation Board on site-specific levee integrity issues, maintenance area formation, and enforcement of unauthorized encroachment violations. The Branch performs visual inspections to ensure that levees, channels and related structures are operated and maintained in accordance with the Code of Federal Regulations Title 33, Section 208.10. The Flood Project Integrity Sections and the LMA Assessment Section will be evaluating the overall integrity of the Sacramento and San Joaquin River Flood Control System project levees. The evaluations will include hydrologic and hydraulic assessments to confirm that design conveyance capacity has not been compromised. These sections will also address flood system documentation as part of the State Plan of Flood Control. Geotechnical assessments are being conducted by the Levees Evaluations Branch to evaluate the structural stability of the levees.

4.1 2005-2006 High Water Events

This section discusses the damages experienced from the December 2005–January 2006 and April 2006 high water events and FPIIB hydraulic modeling in support of the State Plan of Flood Control.

4.1.1 December 2005-January 2006 and April 2006 Public Law 84-99 Reconnaissance

The Central Valley experienced two high water events since the completion of the fall 2005 inspections. The late December 2005 early January 2006 storms concentrated on the Sacramento Basin, and the April 2006 storms focused on the San Joaquin Basin.

The U.S. Army Corps of Engineers (USACE) has authority under Public Law 84-99 (PL 84-99) to supplement local efforts in the repair of federally constructed flood control projects damaged by high water. For each of the two high water events, the USACE, Sacramento District, sent a notice to the Reclamation Board (Board), who then sent a notice to each Local Maintaining Agency, requesting applications from LMAs for rehabilitation assistance for their flood control project(s) that sustained damages from the high water. The Flood Project Integrity and Inspection Branch (FPIIB) processed these requests, verified each request for completeness, conducted field investigations of each damage site, and forwarded the requests to the Board. Soon thereafter, the USACE, FPIIB, and the Local Maintaining Agencies (LMAs) began scheduling joint inspections to visit the damaged sites and confirm PL 84-99 eligibility. For the event concentrated in the Sacramento Basin, over 40 applications were received and more than 300 damaged sites were visited during the month of June. For the San Joaquin Basin event, 8 applications were received and over 160 damaged sites were visited in August. The reconnaissance information for both events has been forwarded to the Levee Repairs Branch. The Levee Repairs Branch prioritized the damage sites and is handling the design and construction phase for the sites needing repair.

4.1.2 April 2006 High Water Staking

As a result of the April 2006 storm, the Division of Flood Management (DFM) was tasked by the USACE to stake high water marks throughout the entire San Joaquin River Basin. This assignment was delegated to FPIIB. The purpose of the task was to document the flood event and use the data to assist in calibrating system-wide water surface profiles for existing and future Hydrologic Engineering Center River Analysis System (HEC-RAS) models.

LMAs within the San Joaquin River Basin were contacted in mid April, 2006 by FPIIB to stake high water marks for their areas. Reclamation District (RD) 1602 in Patterson and RD 17 in Stockton, CA were used as staging areas to provide surveyor lath stakes for participating LMAs. FPIIB staked high water marks for LMAs unable to participate. FPIIB staff provided staking criteria to participating LMAs to ensure staking uniformity for incorporation into the proposed San Joaquin River System hydraulic model. The staking effort was completed in about 2 ½ weeks.

Surveying of the high water stakes began in May of 2006 using three separate field groups provided by Division of Engineering's Geodetic Branch, the U.S. Bureau of Reclamation, and Operations and Maintenance Precise Surveys Section. The data collection was completed in early July, processed, and received by FPIIB in early November 2006.

4.2 Survey Programs

4.2.1 Levee Crown and Cross Section Survey Program

The Fiscal Year (FY) 2006-7 Budget Change Proposal (BCP) for FPIIB included a five-year levee and bathymetric survey program. The intent was to obtain levee crown elevations (about 320 miles each year) for the 1,613 miles of project levees and levee and bathymetric cross sections at selected locations; however, the five-year levee and bathymetric survey program has been revised due to two additional survey efforts currently underway:

- USACE National Levee Database (NLD), Sacramento District, project plans to survey all 1613 miles of levee crown with 5-6 mile interval cross-sections by July 1, 2007, which includes locating features such as ramps, crossings, and structures. The USACE NLD will provide continual updated information to the database for the Sacramento and San Joaquin Levee System. This information is part of a National Levee Safety Program to help support the Inspection of Completed Works (ICW) Program, emergency response, and FEMA's Map Modernization and Levee Certification programs.
- DWR's Levee Evaluations Branch is proceeding with full cross-section surveys at each exploration hole location (approx. 1,000 foot intervals). The Levee Evaluations Branch plans to complete comprehensive surveys for approximately 300 miles of urban levees in 2007, followed by rural levees in subsequent years. This survey program is using aerial laser-imaging (LIDAR) to collect the levee geometry data.

DWR's Levee Repairs Office has initiated an effort to coordinate with all flood management-related survey efforts to assess the needs and schedules of each program, to assure survey efforts are streamlined to avoid unnecessary duplication, and to ensure all survey data is adequately managed. As a result of these recent efforts, FPIIB has decided to revise its five-year levee and bathymetric survey program based on the overall needs of flood management.

4.2.2 Waterside Erosion Surveys by Boat and Land (San Joaquin River system)

In September 2006, FPIIB began erosion surveys of the San Joaquin River flood control system project levees. The surveys were conducted as closely as possible to Ayres Associates criteria for the Sacramento River system. Surveys were completed by boat in the areas that were navigable. In areas that were not navigable or where wide berms obstructed visibility, surveys were completed by land. The fall 2006 levee inspection sheets were reviewed to determine districts where erosion was noted. Due to time constraints, land surveys were prioritized and completed based on this previously noted erosion.

Specific data collected at each erosion site include:

- Approximate river mile as per 1984 USACE Aerial Atlas
- Right or left bank
- Levee mile start/end (optional)
- Local maintaining agency
- GPS begin/end
- Estimated height of erosion (ft)
- Estimated site length (ft)
- Erosion location on the bank (toe, lower slope, mid bank, upper slope)
- Existing revetment type, if any
- Proximity of erosion to the levee slope
- Remaining berm width
- Any comments or field notes
- Photo of site

Four days of boat surveys (over 57 miles) and six days of land surveys (over 320 miles) were conducted in the San Joaquin River system. Tables 4-1 and 4-2 provide a listing of the districts that were surveyed (at least partially) by boat or by land as of March 15, 2007.

Table 4-1: Erosion Surveys by Boat

Local Maintaining Agency	Total Damaged Sites Identified	PL 84-99 Submittal	New Sites Identified	Miles Surveyed
RD 1	2	None	2	1.15
RD 17	40	36	4	14.37
RD 404	7	None	7	2.38
RD 524	50	50	None	6.26
RD 544	43	43	None	10.33
RD 2062	9	None	9	8.28
RD 2085	None	None	None	6.18
RD 2089	9	None	9	2.90
RD 2095	4	None	4	3.38
RD 2107	None	None	None	2.37

Table 4-2: Erosion Surveys by Land

Local Maintaining Agency	Total Damaged Sites Identified	PL 84-99 Submittal	New Sites Identified	Miles Surveyed*
Lower San Joaquin Levee District	2	None	2	191.40
San Joaquin Flood Control District	32	None	32	127.99
RD 2058	4	None	4	3.00
RD 2095	4	None	4	1.45

*Miles surveyed in the Lower San Joaquin Levee District and San Joaquin County Flood Control District includes channels and canals. These channels and canals were either not surveyed or removed from the list, since they do not meet the criteria for this levee erosion survey. The mileage was included in this table to account for the total district project miles.

Table 4-3 lists the districts that were not surveyed by boat or land and summarizes the reason they were not surveyed in 2006. A plan is being developed to survey these areas during the summer of 2007.

Table 4-3: Districts that have not been surveyed for erosion

Local Maintaining Agency	Reason for Not Surveying	Miles Not Surveyed
RD 17	French Camp Slough only – Can be navigated by small boat	1.81
RD 404	French Camp Slough only – Can be navigated by small boat	1.76
RD 1602	Navigable, but large berms block visibility	6.29
RD 2031	Navigable on San Joaquin, but large berms block visibility; Navigation on Stanislaus River unknown	13.19
RD 2058	West of Paradise Road – Not practically Navigable	3.00
RD 2062	Paradise Cut only – Not practically navigable; levee slopes are steep and covered with vegetation; visibility is very limited; cannot see from opposite bank	4.03
RD 2063	Navigable, but large berms block visibility; levee slopes not maintained by district, no visibility by land	10.63
RD 2064	Navigable on San Joaquin, but large berms block visibility; Navigation on Stanislaus River unknown	11.90
RD 2075	Navigable, but large berms block visibility	7.52
RD 2091	Navigable, but large berms block visibility	7.92
RD 2092	Navigable, but large berms block visibility	3.76
RD 2094	Navigable, but large berms block visibility	3.28
RD 2096	-	0.17
RD 2101	Navigable	3.50
RD 2107	Paradise Cut only – Not practically navigable	1.84
Madera County	-	26.65
Merced Stream Group	-	6.30

The erosion sites for the San Joaquin River system have been plotted onto an aerial atlas very similar to the Ayres report for the Sacramento River system. Figure 4.1 shows the general location of the San Joaquin River system erosion sites identified in this survey.

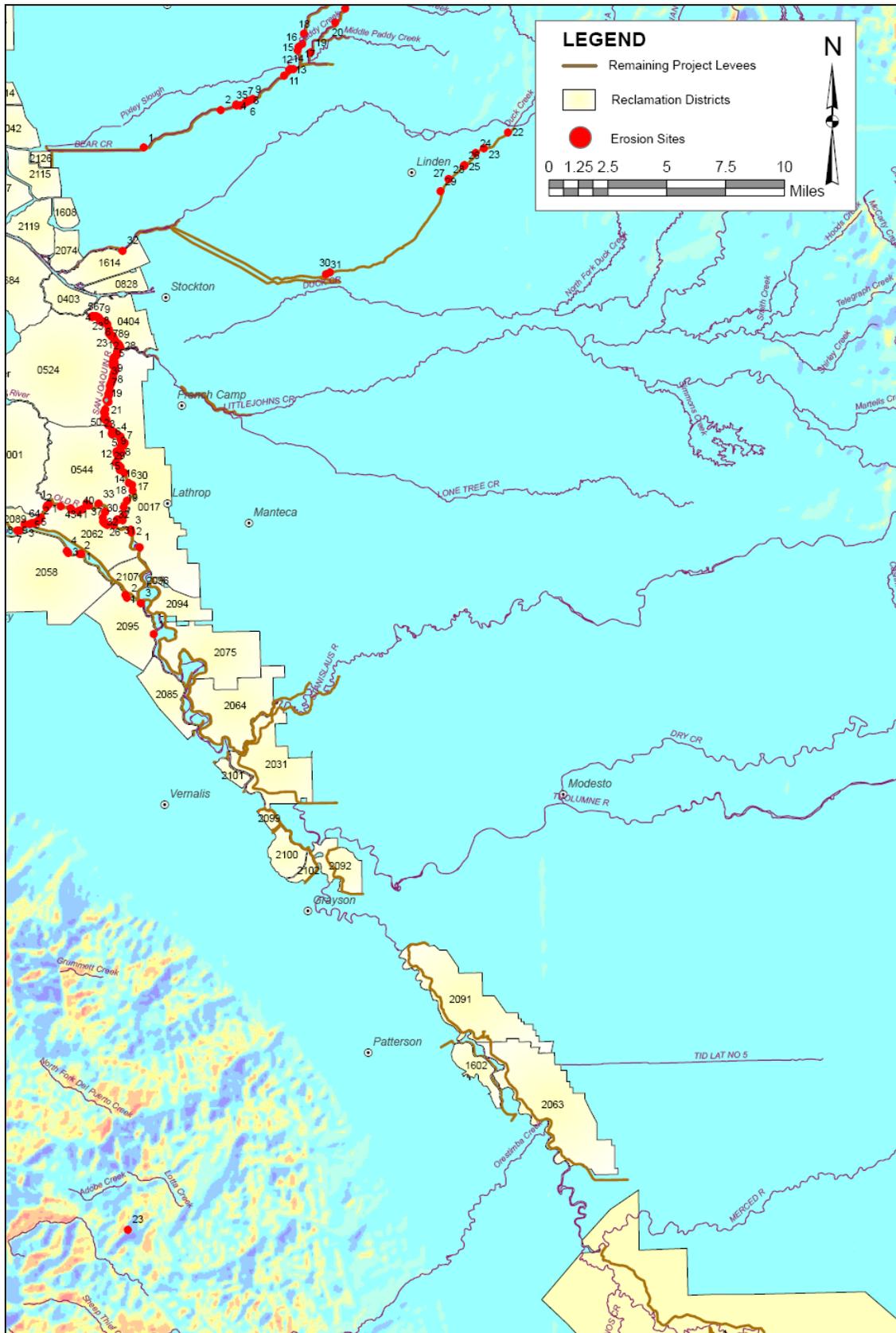


Figure 4.1

Highlights:

- Of the 28 LMAs, 10 were surveyed by boat (at least partially).
- Of the over 490 total project levee miles, over 57 were surveyed by boat.
- Over 380 miles of erosion surveys have been completed.
- About 113 miles remain which have not been surveyed by boat or land.
- Erosion sites have not yet been prioritized or ranked for severity.

Erosion Criteria:

Sites were included in this erosion survey if they met one of the following three criteria:

- a) Bank erosion into the projection of the levee slope.
- b) Berm width of less than 35 feet.
- c) The site was submitted by the local maintaining agency for PL 84-99 assistance from the April 2006 high water.

Several creeks or sloughs in the San Joaquin system include stretches where one bank is on high ground. The high ground could be an orchard or golf course that is filled to the height of the levee crown. Also, some stretches are oversized levees that have landside stability berms built up to levee crown elevation. The stability berm might be thirty or more feet wide. Erosion on these stretches is not noted in this survey.

APPENDIX A – INSPECTION RATING TABLES

A.1 Description of Inspection Rating Tables

As required by USACE's Standard O&M Manual, DWR staff inspects the Sacramento-San Joaquin River Flood Control System to verify adherence to the specified maintenance standards. As a result of each inspection, levee inspection sheets are developed for each district during the spring and fall inspections and are shared with the local levee maintaining agencies and USACE. DWR's inspectors then summarize the information gathered during these inspections and present it in several tables. The tables presented in this appendix reflect the general status of maintenance of the flood control system based on subjective ratings by individual inspectors. These tables do not reflect an assessment of the structural integrity of the levees or their foundations.

To find the rating of a specific district in this report the reader must know the district number and which waterway borders the district. Once the reader has this information, details of the ratings may be found in the appropriate Table. To understand the basis for the reported ratings, refer to the rating criteria in Section 2.3.

To determine a district number and identify the adjacent waterway, refer to Plates 1 and 1A and locate the district. However, it may take careful observation to find the district in this manner. There is no relationship between the district numbers and their locations because districts are numbered sequentially when officially chartered by the legislature (district numbers are established by order of the date of the legislative act). Another way is to use Tables A-2, A-3 and A-4 (Levee Maintenance Ratings), which are listed by waterway group, and scan the lists to determine along which waterway the district lies. There are three major waterway listings; Sacramento River, San Joaquin River, and Miscellaneous Streams basins.

Table A-1 is a summary of maintenance ratings by project basin for 2006. The table shows the total project levee miles for the Sacramento River basin, San Joaquin River basin and Miscellaneous Streams basins and a break down of the percentage of levee miles within each basin that are rated satisfactory, marginally satisfactory, and unsatisfactory. The miles in Table A-1 are based on overall ratings for individual units within each district and therefore may not match with miles on Tables A-2, A-3 and A-4 (in which the miles are based on Composite Ratings of Multi-Unit Districts).

Tables A-2, A-3 and A-4 include the ten-year levee maintenance ratings for each district in the Sacramento River basin, San Joaquin River basin and miscellaneous streams basins, respectively. Some districts or maintenance areas are made up of multiple units. The ratings shown in these tables are composite maintenance ratings given for each district. In other words, not all units within the same district are rated the same. This composite rating reflects these differences and is based on the subjective opinion of the individual inspectors.

Tables A-5, A-6 and A-7 show project levee maintenance within the Sacramento River basin, San Joaquin River basin and miscellaneous streams basins, respectively. These tables show each district's compliance with federal regulations governing maintenance of flood protection works. The ratings represent a field assessment by DWR's inspection staff. The observations are from the top of the levee and describe conditions at the time of the fall inspection. In some cases, maintenance activity may have taken place since the previous inspection; however, this is not reflected in these ratings. Any rating for an individual levee reach does not make any statement regarding the structural integrity of the flood control facility.

Tables A-8, A-9 and A-10 summarize the status of channel clearance maintenance activities and the overall condition of flood control project channels for the Sacramento River basin, San Joaquin River basin and miscellaneous streams basins, respectively as reported by LMA. Missing information indicates that the requested information was not submitted to DWR in writing by the district.

TABLE A-1. Summary of Maintenance Rating by Project - 2006
Levee and Bank Protection Maintenance Rating (Percentage of miles in the given waterway)

Project	Total Miles	Satisfactory		Marginally Satisfactory		Unsatisfactory	
		Miles	% of Total Miles	Miles	% of Total Miles	Miles	% of Total Miles
<u>Sacramento River Basin</u>							
Sacramento River And Tributaries	1077.8	903.0	83.8%	166.6	15.5%	8.2	0.8%
Subtotal:	1077.8	903.0	83.8%	166.6	15.5%	8.2	0.8%
<u>San Joaquin River Basin</u>							
Lower San Joaquin Levee District	200.9	160.0	79.6%	40.9	20.4%	0.0	0.0%
Madera County Flood Control and Water Conservation Agency	26.7	12.8	47.9%	13.9	52.1%	0.0	0.0%
Merced County Stream Group (Merced Irrigation District)	6.3	1.6	25.4%	3.3	52.4%	1.4	22.2%
San Joaquin County Flood Control District	104.5	104.5	100.0%	0.0	0.0%	0.0	0.0%
San Joaquin River and Tributaries (includes all SJR Reclamation Districts)	143.5	86.8	60.5%	51.0	35.5%	5.7	4.0%
Turlock Irrigation District Gomes Lake Spur Levee (Formerly RD 2091, Unit 2)	0.3	0.3	100.0%	0.0	0.0%	0.0	0.0%
Subtotal:	482.2	366.0	75.9%	109.1	22.6%	7.1	1.5%
<u>Miscellaneous Streams and Basins</u>							
Lake County (Sutter Maintenance Yard)	3.9	3.9	100.0%	0.0	0.0%	0.0	0.0%
Lake County Flood Control District	14.3	14.3	100.0%	0.0	0.0%	0.0	0.0%
Plumas County	3.2	3.2	100.0%	0.0	0.0%	0.0	0.0%
Subtotal:	21.4	21.4	100.0%	0.0		0.0	0.0%
Grand Total:	1581.4	1290.4	81.6%	275.7	17.4%	15.3	1.0%

Note: There are an additional 25 miles of Rock Sites in the Sacramento River Basin and 6.9 miles of sites in the San Joaquin River Basin.

TABLE A-2. TEN-YEAR-MAINTENANCE RECORD ON SACRAMENTO RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Levee District											
No. 0001 Glenn County, Sacramento River	12.4	C	C	C	C	C	C	C	C	C	M
No. 0001 Sutter County, Feather River	16.7	C	C	C	C	C	C	C	C	C	S
No. 0002 Glenn County, Sacramento River	4.9	C	C	C	C	C	C	C	C	I	M
No. 0003 Glenn County, Sacramento River	12.2	I	I	C	C	C	C	C	C	C	M
No. 0009 Sutter County, Feather River	6.2	C	C	C	C	C	C	C	C	C	S
Reclamation District											
No. 0003 Grand Island	28.6	C	C	C	C	C	C	C	C	C	S
No. 0010 Simmerly	21.9	C	C	C	C	C	C	C	C	C	S
No. 0070 Meridian	23.6	C	C	C	C	C	C	C	C	C	S
No. 0108 River Farm	20.6	C	C	C	C	C	C	C	C	C	S
No. 0150 Merritt Landing	18.1	I	N	N	I	I	I	I	I	I	M
No. 0307 Lisbon	6.7	N	N	N	N	I	I	I	I	I	M
No. 0341 Sherman Island	9.7	C	I	C	C	C	C	C	C	C	S
No. 0349 Sutter Island	12.6	I	I	I	C	C	I	I	C	I	M
No. 0369 Libby-McNeil	0.8	I	I	N	N	I	I	I	C	I	S
No. 0501 Ryer Island	20.5	C	C	C	C	C	I	I	C	I	M
No. 0536 Egbert Tract	10.7	N	I	I	I	C	C	C	C	C	S
No. 0537 Lovdal	6.0	I	I	C	C	C	C	C	C	C	S
No. 0551 Pearson District	6.8	N	N	N	N	I	I	I	I	I	S
No. 0554 Walnut Grove	1.2	I	I	N	N	I	I	I	I	I	S
No. 0556 Upper Andrus	11.2	N	N	N	N	N	N	N	I	I	M
No. 0563 Tyler Island	12.4	N	N	N	I	I	I	I	I	I	M
No. 0755 Randall	1.9	N	N	N	N	C	C	C	I	C	M
No. 0765 Glide	1.7	C	C	C	C	C	C	C	C	C	S
No. 0784 Plumas Lake	35.2	C	C	C	C	C	C	C	C	C	S
No. 0785 Driver	5.6	I	I	N	I	C	C	C	C	C	S

S : Satisfactory
M : Marginally Satisfactory
U : Unsatisfactory
C : Compliant
I : Improvement Needed
N : Non-Compliant
(Rating Codes Prior to 2006)

TABLE A-2. TEN-YEAR-MAINTENANCE RECORD ON SACRAMENTO RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
No. 0787 Fair	4.4	C	C	C	C	C	C	C	C	C	S
No. 0817 Carlin	9.0	C	I	N	N	C	C	C	C	C	U
No. 0827 Elkhorn	4.2	I	N	N	N	C	C	C	C	C	S
No. 0900 West Sacramento	13.6	C	C	C	C	C	C	C	C	C	M
No. 0999 Holland Land	32.4	C	C	C	C	C	C	C	C	C	S
No. 1000 Natomas	42.6	C	C	C	C	C	C	C	C	C	S
No. 1001 Nicolaus	44.0	C	C	C	C	C	C	C	C	C	M
No. 1500 Sutter Basin	54.4	C	C	C	C	C	C	C	C	C	S
No. 1600 Mull	14.7	N	N	N	I	C	C	C	C	C	S
No. 1601 Twitchell	2.5	C	C	C	C	C	C	C	C	C	S
No. 1660 Tisdale	12.1	C	C	C	C	C	C	C	C	C	S
No. 2035 Conway Ranch	12.1	C	C	C	C	C	C	C	C	C	S
No. 2060 Hastings Island	16.0	C	C	C	C	C	C	C	C	C	M
No. 2068 Yolano	8.7	C	C	C	C	C	C	C	C	C	S
No. 2098 Cache Haas Area	11.3	I	I	I	I	I	I	I	I	I	M
No. 2103 Wheatland	9.8	C	C	C	C	C	C	C	C	C	S
No. 2104 Peters Pocket	7.4	I	I	C	I	I	C	I	C	C	S
Named District											
American River Flood Control District	34.2	C	C	C	C	C	C	C	C	C	M
Brannan-Andrus Levee Maintenance District	19.3	C	C	C	C	C	C	C	I	C *	M
Butte County Chico, Mud and Sandy Creeks	24.7	C	C	C	C	C	C	C	C	C	S
Butte County Sacramento River (Rock Sites)	3.5	Did Not Inspect; Rock Sites									
City of Sacramento City of Sacramento	3.6	C	C	C	C	C	C	C	C	C	S
Eastern Honcut Creek Area Van Tress	1.5	C	C	C	C	C	C	C	C	C	S
Glenn County (Rock Sites)	1.5	N	N	N	Did Not Inspect; Rock Sites						
Knights Landing Ridge Drainage District	12.6	C	C	C	C	C	C	C	C	C	S
Marysville Levee District	11.4	C	C	C	C	C	C	C	C	C	U

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N : Non-Compliant
(Rating Codes Prior to 2006)

* Overall Integrity O.K. Was given 'I' rating for 69% of total levee miles for the District on Sacramento River. Improvements needed for adequate encroachment control and control of growth on Levee/Revetment.

TABLE A-2. TEN-YEAR-MAINTENANCE RECORD ON SACRAMENTO RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Sacramento River West Side Levee District	50.2	C	C	C	C	C	C	C	C	C	S
Solano County Mellin Levee	0.6	C	N	C	C	C	C	C	C	C	M
Tehama County Flood Control District Deer Creek	5.6	I	C	C	I	C	C	C	C	C	S
Tehama County Flood Control District Elder Creek	8.0	C	C	C	C	C	C	C	C	C	S
Tehama County Flood Control District Sacramento River (Rock Sites)	13.3	I	I	I	Did Not Inspect; Rock Sites						
Yolo County Cache Creek	0.3	C	C	C	C	C	C	C	C	C	S
Yolo County Service Area No. 6 Sacramento River	6.0	N	N	N	I	C	C	C	C	C	S
Maintained by State of California											
Cache Creek	25.1	C	C	C	C	C	C	C	C	C	S
East Interceptor Canal South Levee	3.0	C	C	C	C	C	N	N	C	C	S
East Levee Sutter Bypass	22.1	C	C	C	C	C	C	C	C	C	S
East Levee Yolo Bypass Levee	2.0	C	C	C	C	C	C	C	C	C	S
East Levee Sacramento River	27.3	C	C	C	C	C	C	C	C	C	S
Fish and Game (Shea Levee) Sacramento River	0.3	C	C	C	C	C	C	C	C	C	S
MA-0001 Reclamation District 2047	17.1	C	C	C	C	C	C	C	C	C	S
MA-0003 Reclamation District 803 - 823	5.2	C	C	C	C	C	C	C	C	C	S
MA-0004 Reclamation District 81/Washington Levee District	3.4	C	C	C	C	C	C	C	C	C	S
MA-0005 Butte Creek	33.4	C	C	C	C	C	C	C	C	C	S
MA-0007 Drainage District 1 and Unorganized	12.1	C	C	C	C	C	C	C	C	C	S
MA-0009 East Levee	19.6	C	C	C	C	C	C	C	C	C	S
MA-0012 Colusa Basin Drain	11.3	C	C	C	C	C	C	C	C	C	S
MA-0013 Cherokee Canal	42.0	C	C	C	C	C	C	C	C	C	S
MA-0016 Reclamation District 777	4.1	I	C	C	C	C	C	C	C	C	S
Murphy Slough at M&T Ranch Unit No. 01	0.8	I	I	C	I	C	C	C	C	C	S
Murphy Slough at M&T Ranch (Rock Sites)	6.7	Did Not Inspect; Rock Sites									
Putah Creek	16.3	C	C	C	C	C	C	C	C	C	S
Sacramento Bypass	3.6	C	C	C	C	C	C	C	C	C	S

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(Rating Codes Prior to 2006)

TABLE A-2. TEN-YEAR-MAINTENANCE RECORD ON SACRAMENTO RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Tisdale Bypass	9.0	C	C	C	C	C	C	C	C	C	S
Wadsworth Canal	9.4	C	C	C	C	C	C	C	C	C	S
West Interceptor Canal South Levee	1.8	C	I	C	C	C	C	C	C	C	S
West Levee Feather River at Hamilton Bend	1.2	C	C	C	C	C	C	C	C	C	S
West Levee Feather River at Nelson Bend	0.5	C	C	I	N	N	C	C	C	C	S
West Levee Yolo Bypass	9.3	C	C	C	C	C	C	C	C	C	S
Willow Slough Bypass	12.5	C	C	C	C	C	C	C	C	C	S

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TABLE A-3. TEN-YEAR-MAINTENANCE RECORD ON SAN JOAQUIN RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Reclamation District											
No. 0001 Union Island	1.2	C	C	C	C	C	C	C	C	C	S
No. 0017 Mossdale	16.2	C	C	C	C	C	C	C	C	C	S
No. 0404 Boggs	4.1	C	C	I	I	I	C	C	C	I	S
No. 0524 Middle Roberts Island	6.3	I	I	I	I	I	I	I	I	I	M
No. 0544 Upper Roberts Island	10.3	C	C	C	C	C	C	C	C	I	S
No. 1602 Del Puerto	6.3	I	C	N	I	I	I	I	C	C	S
No. 2031 Elliot	13.2	C	C	C	C	C	C	C	C	C	S
No. 2058 Pescadero	6.7	C	C	C	C	C	C	C	I	I	S
No. 2062 Stewart Tract	12.3	C	C	C	C	C	C	C	C	C	M
No. 2063 Crows Landing	10.6	I	I	N	C	C	C	C	C	C	M
No. 2064 River Junction	11.9	I	I	I	C	C	C	C	C	I	U
No. 2075 McMullin	7.5	C	C	I	C	C	C	C	C	C	M
No. 2085 Kasson	6.2	C	C	C	C	C	C	C	C	C	M
No. 2089 Stark Grove	2.9	C	C	C	C	C	C	C	C	C	M
No. 2091 Chase	7.9	C	C	C	C	C	C	C	C	C	S
No. 2092 Dos Rios	3.8	C	C	C	C	C	C	C	C	C	S
No. 2094 Walthall	3.3	C	C	C	C	C	C	C	C	C	S
No. 2095 Paradise Junction	4.9	C	C	C	C	C	C	C	C	C	M
No. 2096 Wetherbee Lake	0.2	C	C	C	C	C	C	C	C	C	S
No. 2099 El Soya Ranch	2.4	Did Not Inspect.									
No. 2100 White Lake Ranch	2.7	Did Not Inspect.									
No. 2101 Blewett	3.5	C	C	C	I	I	C	C	C	C	S
No. 2102 Lara Ranch	1.8	Did Not Inspect.									
No. 2107 Mossdale Landing	4.2	C	C	C	C	C	C	C	C	C	S
Named District											
Lower San Joaquin Levee District	200.9	C	C	C	C	C	C	C	C	C	S

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(Rating Codes Prior to 2006)

TABLE A-3. TEN-YEAR-MAINTENANCE RECORD ON SAN JOAQUIN RIVER BASIN, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Madera County Flood Control and Water Conservation Agency	26.7	C	C	C	C	C	C	C	C	C	M
Merced County Stream Group	6.3	I	I	I	I	I	I	I	I	N	U
San Joaquin County Flood Control District Bear Creek	46.5	C	C	C	C	C	C	C	C	C	S
San Joaquin County Flood Control District Littlejohn Creek	6.4	C	C	C	C	C	C	C	C	C	S
San Joaquin County Flood Control District Mormon Slough, Stockton Diverting Canal and Calaveras River	51.6	I	I	N	N	I	C	C	C	C	S
Turlock Irrigation District	0.3	-	-	-	-	C	C	C	C	C	S

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TABLE A-4. TEN-YEAR-MAINTENANCE RECORD ON MISCELLANEOUS STREAMS BASINS, 1997 - 2006
Overall Maintenance Ratings, By Year (Composite Ratings of Multi-Unit Districts)

Maintaining Agency	Miles	97	98	99	00	01	02	03	04	05	06
Named District											
Lake County Flood Control District	14.3	C	C	C	C	C	C	C	C	C	S
Plumas County	3.2	C	C	C	C	C	C	C	C	C	S
Maintenance Area											
MA-0017 Lake County Sutter Maintenance Yard - Middle Creek	3.9	-	-	-	-	C	I	I	I	I	S

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Levee District																
No. 0001																
Glenn County, Sacramento River	140	X		12.40	S	S	M	M M	M	-	M	S	S	-	-	M
Sutter County, Feather River	144	X		16.70	S	S	S	S M	M	-	-	-	S	-	-	S
No. 0002																
Glenn County, Sacramento River	139	X		4.90	S	S	M	S M	M	-	S	-	S	-	-	M
No. 0003																
Glenn County, Sacramento River	2		X	12.20	S	M	M	S M	M	-	M	-	S	-	-	M
No. 0009																
Sutter County, Feather River	148	X		6.20	S	S	M	S S	M	-	-	-	S	-	-	S
Reclamation District																
No. 0003																
Unit No. 01, Steamboat Slough	104		X	11.00	S	S	M	M M	S	-	S	S	S	S	-	S
Unit No. 02, Sacramento River	104	X		17.60	S	S	M	M M	S	-	S	S	S	S	-	S
No. 0010																
Unit No. 01, Simmerly Slough	151	X		7.70	S	S	S	S S	S	-	S	-	M	S	-	S
Unit No. 02, Feather River	151		X	11.20	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 03, Honcut Creek	151		X	3.00	S	S	S	S S	S	-	S	-	S	S	-	S
No. 0070																
Unit No. 01, Sutter Bypass	133	X		8.00	S	S	M	S S	S	-	S	-	S	S	-	S

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d : Units 3, 4 & 5 are non-leveed channels and are now listed in Table A-9. Channel Clearance and Condition, San Joaquin River Basin.

TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
							WS	LS								
Unit No. 02, Sacramento River No. 0108	134	X	15.60	S	S	M	S	M	S	-	M	-	S	S	S	S
Colusa Basin Drain No. 0150	132	X	20.60	S	S	S	S	S	S	-	S	-	S	S	S	S
Unit No. 01, Sutter Slough	112	X	0.50	S	S	M	M	S	S	-	S	S	S	S	-	S
Unit No. 02, Sacramento River	112	X	8.00	S	S	S	S	S	S	-	S	S	S	S	-	M
Unit No. 03, Elk Slough No. 0307	112	X	9.60	S	S	M	M	M	S	-	S	S	S	S	-	S
Sacramento River No. 0341	114	X	6.70	S	S	M	M	M	S	-	S	S	S	S	-	M
Unit No. 01 Threemile Slough	101	X	3.30	S	S	M	M	S	S	-	S	S	S	S	-	S
Unit No. 02 Sacramento River No. 0349	101	X	6.40	S	S	M	M	S	S	-	S	S	S	S	-	S
Unit No. 01 Sacramento River	110	X	1.60	S	S	S	S	M	S	-	S	S	S	S	-	M
Unit No. 02 Steamboat Slough	110	X	4.40	S	S	S	S	M	S	-	S	S	S	S	-	M
Unit No. 03 Sutter Slough No. 0369	110	X	6.60	S	S	S	S	S	S	-	S	S	S	S		S
Sacramento River No. 0501	111	X	0.80		S	S	M	M	S	-	S	S	S	-	-	S
Unit No. 01 Steamboat Slough	105	X	6.80	S	S	S	S	M	S	-	S	S	S	S	-	M

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Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
							SM	SL								
Unit No. 02 Cache Slough	105	X	3.60	S	S	S	S	S	S	-	M	S	S	S	-	S
Unit No. 03 Miner Slough	105	X	7.80	S	S	S	M	S	S	-	U	S	S	S	-	M
Unit No. 04 Sutter Slough	105	X	2.30	S	S	S	S	S	S	-	S	S	S	S	-	S
No. 0536																
Unit No. 01 Lindsey Slough	106	X	5.70	S	S	M	M	S	S	-	S	S	M	S	-	S
Unit No. 02 Yolo Bypass	106	X	5.00	S	S	S	S	S	S	-	S	S	M	S	-	S
No. 0537																
Unit No. 01 Sacramento River	9/116	X	4.80	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 02 Yolo Bypass	116	X	1.20	S	S	S	S	S	S	-	S	S	S	S	S	S
No. 0551																
Sacramento River	111	X	6.80	-	S	S	S	S	S	-	S	S	S	S	-	S
No. 0554																
Sacramento River	111	X	1.20	-	S	S	S	S	S	-	S	S	S	S	-	S
No. 0556																
Unit No. 01 Georgiana Slough	103	X	5.50	-	S	M	M	M	S	-	S	S	S	S	-	M
Unit No. 02 Sacramento River	103	X	5.70	-	S	M	S	S	S	-	S	S	S	S	-	M
No. 0563																
Georgiana Slough (Tyler Island)	103	X	12.40	S	S	M	M	M	S	-	S	S	M	S	-	M
No. 0755																
Sacramento River	111	X	1.90	-	S	S	M	M	S	-	S	S	S	S	-	M

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
No. 0765																
Sacramento River	114	X		1.70	S	S	M	M S	S	-	S	S	S	S	-	S
No. 0784																
Unit No. 01 Yuba River	149	X		2.20	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 02 Feather River	145	X		13.60	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 03 Bear River	5	X		4.70	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 04 Interceptor Canal	145	X		6.30	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 05 Interceptor Canal	145	X		4.20	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 06 South Dry Creek	145	X		0.30	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 07 Yuba River	149	X		3.90	S	S	S	S S	S	-	S	-	S	S	-	S
No. 0785																
Unit No. 01 Sacramento River	122	X		2.30	S	S	S	S S	S	-	S	S	S	S	S	S
Unit No. 02 Yolo Bypass	122	X		3.30	S	S	S	S S	S	-	S	S	S	S	S	S
No. 0787																
Colusa Basin Drain	132	X		4.40	S	S	S	S S	S	-	S	-	S	S	-	S
No. 0817																
Unit No. 01 South Dry Creek	146	X		3.80	S	S	S	M M	S	-	S	S	S	S	-	M
Unit No. 02 Bear River	146	X		3.90	S	S	S	M M	S	-	S	S	S	S	-	M
Unit No. 03 Dry Creek	146	X		1.30	S	S	S	U U	S	-	S	-	S	S	-	U
No. 0827																
Unit No. 01 Sacramento River	122	X		1.40	S	S	S	M S	S	-	S	S	S	S	S	S

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
							WS	LS								
Unit No. 02 Yolo Bypass No. 0900	122	X	2.80	S	S	S	M	M	S	-	S	S	M	S	S	S
Unit No. 01 Sacramento River	116	X	7.90	S	S	M	M	M	S	-	S	S	S	S	S	M
Unit No. 02 Yolo Bypass No. 0999	116	X	5.70	S	S	S	S	S	S	-	S	S	M	S	S	S
Unit No. 01 Yolo Bypass	113	X	15.40	S	S	M	M	S	S	-	S	-	M	S	-	S
Unit No. 02 Miner Slough	113	X	2.30	S	S	M	S	M	S	-	S	S	S	S	-	S
Unit No. 03 Sutter Slough	113	X	3.80	S	S	M	M	M	S	-	S	S	S	S	-	S
Unit No. 04 Sacramento River	113	X	1.20	S	S	M	M	M	S	-	S	S	S	S	-	S
Unit No. 05 Elk Slough No. 1000	113	X	9.70	S	S	M	M	M	S	-	S	-	S	S	-	S
Unit No. 01 Sacramento River	124	X	18.60	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 02 American River	124	X	2.30	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 03 Natomas E Canal	124	X	17.30	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 04 Natomas X Canal No. 1001	124	X	4.40	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 01 Yankee Slough	141	X	4.20	S	S	M	S	S	S	-	S	-	S	S	-	S
Unit No. 02 Yankee Slough	141	X	3.70	S	S	M	S	S	S	-	S	-	S	S	-	M
Unit No. 03 Bear River	5/141	X	12.60	S	S	M	M	M	S	-	S	S	S	S	-	S
Unit No. 04 Feather River	141	X	13.30	S	S	M	M	M	S	-	S	S	S	S	-	M
Unit No. 05 Natomas X Canal	142	X	5.40	S	S	S	S	S	S	-	S	-	S	S	-	S

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
								WS	LS								
Unit No. 06 East Side Canal No. 1500	142	X		4.80	S	S	S	M	M	S	-	S	-	S	S	-	M
Unit No. 01 Sacramento River	1/12	X		33.60	S	S	S	S	S	S	-	-	-	S	S	S	S
Unit No. 02 Sutter Bypass No. 1600	128/129	X		20.80	S	S	S	S	S	S	-	-	-	S	S	S	S
Unit No. 01 Sacramento	123	X		10.50	S	S	S	M	S	S	-	S	S	M	S	S	S
Unit No. 02 Yolo Bypass No. 1601	123	X		4.20	S	S	S	M	M	S	-	S	S	S	S	S	S
Threemile Slough No. 1660	102	X		2.50	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 01 Sacramento River	133	X		3.00	S	S	M	S	S	M	-	-	-	S	S	S	S
Unit No. 02 Sutter Bypass No. 2035	133	X		9.10	S	S	M	M	S	S	-	S	-	S	S	S	S
Unit No. 01 Cache Creek Settling Basin	126	X		2.00	S	S	S	M	M	S	-	S	-	M	S	-	S
Unit No. 02 Yolo Bypass	120/121	X		7.60	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 03 Willow Slough Bypass No. 2060	120	X		2.50	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 01 Lindsey Slough	107	X		7.20	S	S	M	S	S	S	-	S	S	S	S	-	M
Unit No. 02 Ulatis Creek	107	X		3.70	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 03 Cache Slough	107	X		5.10	S	S	S	S	S	S	-	S	S	S	S	-	S

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TABLE A-5. PROJECT LEVEL MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program	
No. 2068																	
Unit No. 01 Yolo Bypass	109	X		5.50	S	S	S	S	S	-	S	-	S	S	-	S	
Unit No. 02 Back Levee	109		X	3.20	S	S	S	S	S	-	S	-	S	S	-	S	
No. 2098																	
Unit No. 01 Yolo Bypass	109	X		3.90	S	S	S	S	S	-	S	S	S	S	-	S	
Unit No. 01A Cross Levee	109	X		0.60	S	S	S	S	S	-	S	-	S	S	-	S	
Unit No. 02 Cache Slough	109		X	2.00	S	S	S	S	S	-	M	-	S	S	-	M	
Unit No. 03 Haas Slough	109	X		1.90	S	S	U	S	S	-	M	-	M	S	-	M	
Unit No. 04 Back Levee	109		X	2.90	S	S	M	S	S	M	-	M	-	M	S	-	M
No. 2103																	
Unit No. 01 South Dry Creek	146		X	4.80	S	S	S	S	S	-	S	S	S	S	-	S	
Unit No. 02 Bear River	146	X		5.00	S	S	S	S	S	-	S	S	S	S	-	S	
No. 2104																	
Unit No. 01 Cache Slough	108		X	2.60	S	S	M	M	S	-	M	S	U	S	-	S	
Unit No. 02 Haas Slough	108	X		4.80	S	S	M	M	S	-	M	S	U	S	-	S	
Named District																	
American River Flood Control District																	
Unit No. 01 Arcade Creek	118		X	2.10	S	S	S	S	S	-	S	S	S	S	S	-	S
Unit No. 02 Natomas E Canal	118		X	4.00	S	S	S	S	S	-	S	-	S	S	-	S	
Unit No. 03A American River	118	X		1.90	S	S	S	S	S	-	S	S	S	S	-	S	
Unit No. 03B American River	118	X		1.60	S	S	S	S	S	-	S	S	S	S	-	S	

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Corps Operations and Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Unit No. 04 American River	118		X		11.00	S	S	M	S	S	-	S	S	S	S	-	M
Unit No. 05 Sacramento River	118		X		0.40	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 06 Linda Creek	118		X		1.30	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 07 Arcade Creek	118		X		1.90	S	S	S	S	S	-	S	-	S	S	S	S
Unit No. 08 Magpie Creek Diversion	118		X		1.48	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 09 American River	a		X		4.50	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 10 American River	a		X		4.00	S	S	S	S	S	-	S	S	S	S	-	S
Brannan-Andrus Levee Maintenance District																	
Unit No. 01 Georgiana Slough	103		X		6.00	S	S	M	M	M	M	S	S	M	S	-	S
Unit No. 02 Sacramento River	11/102		X		13.30	S	S	M	M	M	S	-	M	S	S	-	M
Butte County																	
Unit No. 01 Mud Creek	a		X		7.30	S	S	M	S	M	S	-	S	-	S	S	S
Unit No. 02 Mud Creek	a		X		8.20	S	S	M	S	S	M	-	M	-	S	S	S
Unit No. 02A Channel Slough	a		X		0.30	S	S	S	S	S	S	-	S	-	S	-	S
Unit No. 03 Sycamore and Sheep Hollow Creeks	a		X	X	4.20	S	S	S	S	S	S	-	M	-	S	S	-
Unit No. 04 Sycamore and Dry Creeks	a		X	X	2.90	S	S	S	S	M	S	-	S	-	S	S	-
Unit No. 05 Big Chico Diversion	a		X		1.80	S	S	S	S	S	S	-	S	-	S	S	-
Unit No. 06 Sacramento River (RS)	a		X		0.40	Did Not Inspect; Rock Site											
Unit No. 07 Sacramento River (RS)	a		X		0.30	Did Not Inspect; Rock Site											
Unit No. 08 Sacramento River (RS)	a		X		0.80	Did Not Inspect; Rock Site											

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TABLE A-5. PROJECT LEVEL MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
							WS	LS								
Unit No. 09 Sacramento River (RS)	a	X	0.50	Did Not Inspect; Rock Site												
Unit No. 10 Sacramento River (RS)	a	X	0.30	Did Not Inspect; Rock Site												
Unit No. 11 Sacramento River (RS)	a	X	0.40	Did Not Inspect; Rock Site												
Unit No. 12 Sacramento River (RS)	a	X	0.80	Did Not Inspect; Rock Site												
City of Sacramento																
City of Sacramento	117/118	X	3.60	S	S	S	S	S	S	-	S	S	S	S	S	S
Eastern Honcut Creek Area																
Van Tress	151	X	1.50	S	S	S	M	M	S	-	-	-	S	-	-	S
Glenn County																
Unit No. 01 Sacramento River (RS)	a	X	1.30	Did Not Inspect; Rock Site												
Unit No. 02 Sacramento River (RS)	a	X	0.10	Did Not Inspect; Rock Site												
Unit No. 03 Sacramento River (RS)	a	X	0.10	Did Not Inspect; Rock Site												
Knights Landing Ridge Drainage District																
Unit No. 01 Knights Landing Ridge Cut	127	X	6.40	S	S	S	S	S	S	-	S	-	S	S	S	S
Unit No. 02 Knights Landing Ridge Cut	127	X	6.20	S	S	S	S	S	S	-	S	-	S	S	S	S
Marysville Levee District																
Unit No. 01 Simmerly Slough	147	X	3.20	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 02 Feather River	147	X	1.30	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 03 Yuba River	17	X	6.90	S	S	S	U	U	S	-	S	S	S	S	-	U
Sacramento River West Side Levee District																
Sacramento River	130/131	X	50.20	S	S	S	S	S	S	-	S	-	S	S	S	S

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
								SL	MS								
Solano County																	
Mellin Levee	119	X		0.60	S	S	S	S	S	S	-	S	-	S	-	-	M
Tehama County Flood Control District																	
Unit No. 01 Deer Creek	a	X		4.10	S	S	M	M	M	S	-	M	-	S	-	-	S
Unit No. 02 Deer Creek	a	X		1.50	S	S	M	M	M	S	-	S	-	S	-	-	S
Unit No. 03 Deer Creek Rock Sites (RS)	a	X	X	1.30	Did Not Inspect; Rock Site												
Unit No. 04 Elder Creek	a	X		4.10	S	S	M	M	M	S	-	M	-	S	-	-	S
Unit No. 05 Elder Creek	a	X		3.90	S	S	M	M	S	M	-	M	-	M	-	-	S
Unit No. 06 Sacramento River (RS)	a	X		0.50	Did Not Inspect; Rock Site												
Unit No. 07 Sacramento River (RS)	a	X		0.80	Did Not Inspect; Rock Site												
Unit No. 08 Sacramento River (RS)	a	X		1.00	Did Not Inspect; Rock Site												
Unit No. 09 Sacramento River (RS)	a	X		0.20	Did Not Inspect; Rock Site												
Unit No. 10 Sacramento River (RS)	a	X		0.70	Did Not Inspect; Rock Site												
Unit No. 11 Sacramento River (RS)	a	X		0.50	Did Not Inspect; Rock Site												
Unit No. 12 Sacramento River (RS)	a	X		0.60	Did Not Inspect; Rock Site												
Unit No. 13 Sacramento River (RS)	a	X		0.70	Did Not Inspect; Rock Site												
Unit No. 14 Sacramento River (RS)	a	X		0.70	Did Not Inspect; Rock Site												
Unit No. 15 Sacramento River (RS)	a	X		0.10	Did Not Inspect; Rock Site												
Unit No. 16 Sacramento River (RS)	a	X		0.50	Did Not Inspect; Rock Site												
Unit No. 17 Sacramento River (RS)	a	X		0.70	Did Not Inspect; Rock Site												
Unit No. 18 Sacramento River (RS)	a	X		1.30	Did Not Inspect; Rock Site												

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TABLE A-5. PROJECT LEVEL MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Right Bank	Left Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
								WS	LS								
Unit No. 19 Sacramento River (RS)	a	X		0.30	Did Not Inspect; Rock Site												
Unit No. 20 Sacramento River (RS)	a		X	0.10	Did Not Inspect; Rock Site												
Unit No. 21 Sacramento River (RS)	a		X	0.60	Did Not Inspect; Rock Site												
Unit No. 22 Sacramento River (RS)	a		X	0.60	Did Not Inspect; Rock Site												
Unit No. 23 Sacramento River (RS)	a	X		0.90	Did Not Inspect; Rock Site												
Unit No. 24 Sacramento River (RS)	a	X		1.20	Did Not Inspect; Rock Site												
Yolo County																	
Cache Creek	126	X		0.30	S	S	S	S	S	S	-	S	-	S	S	S	S
Service Area No. 6 Sacramento River	7/127	X		6.00	S	S	M	M	S	S	-	S	-	S	S	S	S
<u>Maintained by State of California</u>																	
Cache Creek																	
Unit No. 01	126		X	11.80	S	S	M	S	M	M	-	S	S	S	S	S	S
Unit No. 02	126	X		11.00	S	S	M	S	S	S	-	S	S	S	S	S	S
Unit No. 04	126		X	2.30	S	S	S	S	S	S	-	S	S	S	S	S	S
East Interceptor Canal																	
South Levee				3.00	S	S	M	S	S	S	-	S	-	S	-	-	S
East Levee																	
Sutter Bypass	135		X	22.10	S	S	S	S	S	M	-	S	-	S	S	S	S
Yolo Bypass Levee	123		X	2.00	S	S	S	S	S	S	-	S	S	S	S	S	S
East Levee Sacramento River																	
Unit No. 01 Sacramento River	2/136/154	X		20.40	S	S	M	S	M	M	-	M	-	S	S	S	S

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Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
								S	U								
Unit No. 02 Colusa Bypass	155	X		2.30	S	S	S	S	S	S	-	-	-	S	-	-	S
Unit No. 03 Colusa Bypass	155		X	2.30	S	S	S	S	S	S	-	S	-	S	-	-	S
Unit No. 04 Moulton Bypass	154	X		0.30	S	S	S	S	S	M	-	-	-	S	-	-	S
Unit No. 05 Moulton Bypass	154		X	2.00	S	S	S	S	M	M	-	S	-	S	-	-	S
Fish and Game (Shea Levee)																	
Sacramento River	3		X	0.30	S	S	M	S	S	S	-	-	-	S	-	-	S
Murphy Slough at M&T Ranch																	
Unit No. 01 Murphy Slough at M&T Ranch	a		X	0.80	S	S	S	M	M	S	-	-	-	S	-	-	S
Unit No. 02 Sacramento River (RS)	a		X	0.60	Did Not Inspect; Rock Site												
Unit No. 03A Sacramento River (RS)	a		X	0.50	Did Not Inspect; Rock Site												
Unit No. 03B Sacramento River (RS)	a		X	0.50	Did Not Inspect; Rock Site												
Unit No. 03C Sacramento River (RS)	a		X	0.10	Did Not Inspect; Rock Site												
Unit No. 04 Sacramento River (RS)	a		X	0.60	Did Not Inspect; Rock Site												
Unit No. 05 Sacramento River (RS)	a		X	0.90	Did Not Inspect; Rock Site												
Unit No. 06 Sacramento River (RS)	a	X		0.50	Did Not Inspect; Rock Site												
Unit No. 07 Sacramento River (RS)	a	X		0.80	Did Not Inspect; Rock Site												
Unit No. 08 Sacramento River (RS)	a		X	0.30	Did Not Inspect; Rock Site												
Unit No. 09 Sacramento River (RS)	a		X	1.00	Did Not Inspect; Rock Site												
Unit No. 10 Sacramento River (RS)	a		X	0.90	Did Not Inspect; Rock Site												
Putah Creek																	
Unit No. 01	119		X	9.00	S	S	S	S	S	S	-	S	S	S	S	-	S

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Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
								S	M								
Unit No. 02 Sacramento Bypass	119	X		7.30	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 01	122	X		1.80	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 02 Tisdale Bypass	116		X	1.80	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 01	156/133		X	4.50	S	S	S	S	S	S	-	-	-	S	-	-	S
Unit No. 02 Wadsworth Canal	129	X		4.50	S	S	S	S	S	S	-	-	-	S	-	-	S
Unit No. 01	135		X	4.70	S	S	S	S	S	M	-	M	-	S	-	-	S
Unit No. 02 West Interceptor Canal	135	X		4.70	S	S	S	S	S	M	-	M	-	S	-	-	S
South Levee West Levee				1.80	S	S	M	S	S	S	-	M	-	S	-	-	S
Feather River at Hamilton Bend	13	X		1.20	S	S	S	S	S	S	-	-	-	S	-	-	S
Feather River at Nelson Bend West Levee Yolo Bypass	13	X		0.50	S	S	S	M	M	S	-	-	-	S	-	-	S
Unit No. 01	127	X		2.70	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 02	127	X		1.50	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 03	127	X		1.50	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 04	119/120	X		3.60	S	S	S	S	S	S	-	S	S	S	S	S	S

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Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Willow Slough Bypass																
Unit No. 01	120	X	5.10	S	S	S	S	S	S	-	S	S	S	S	S	S
Unit No. 02	120	X	7.40	S	S	S	S	S	S	-	S	S	S	S	S	S
Maintenance Area																
MA-0001																
Sacramento River	6	X	17.10	S	S	M	S	M	M	-	M	-	S	-	-	S
MA-0003																
Feather River	143/13	X	5.20	S	S	S	S	S	M	-	M	-	S	-	-	S
MA-0004																
Sacramento River	9/116	X	3.40	S	S	S	S	S	S	-	S	S	S	S	S	S
MA-0005																
Unit No. 01 Butte Creek 1	153, c	X	15.40	S	S	M	S	S	M	-	M	-	S	-	-	S
Unit No. 02 Butte Creek 1	153, c	X	16.50	S	S	M	S	M	M	-	M	-	S	-	-	S
Unit No. 03 Little Chico Creek Diversion 1	153, c		1.50	S	-	S	S	-	-	-	-	-	-	-	-	S
MA-0007																
Feather River	152	X	12.10	S	S	M	M	M	M	-	M	-	S	-	-	S
MA-0009																
Sacramento River	111/115	X	19.60	S	S	S	S	S	S	-	S	S	S	S	S	S
MA-0012																
Colusa Drain Basin	132	X	11.30	S	S	M	S	S	M	-	M	-	S	S	S	S

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TABLE A-5. PROJECT LEVEE MAINTENANCE WITHIN SACRAMENTO RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
MA-0013																
Unit No. 01 Cherokee Canal	a	X	18.90	S	S	M	S	S	S	-	-	-	M	S	S	S
Unit No. 02 Cherokee Canal	a	X	23.10	S	S	S	S	S	S	-	S	-	S	S	S	S
MA-0016																
Feather River	4/148	X	4.10	S	S	M	M	M	M	-	M	-	S	S	S	S

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Reclamation District																
No. 0001																
Old River	8	X	1.20	S	S	S	S	S	S	-	S	S	S	S	-	S
No. 0017																
Unit No. 01 French Camp Slough	2	X	1.80	S	S	M	S	M	S	-	S	S	S	S	-	S
Unit No. 02 San Joaquin River	2	X	14.40	S	S	M	M	M	M	-	M	S	S	S	-	S
No. 0404																
Unit No. 01 San Joaquin River	1	X	2.30	M	S	M	M	M	U	-	M	S	S	S	-	S
Unit No. 02 French Camp Slough	1	X	1.80	M	S	S	M	S	U	-	M	S	S	S	-	S
No. 0524																
San Joaquin River	7	X	6.30	M	S	M	S	M	M	-	S	S	S	S	-	M
No. 0544																
Unit No. 01 San Joaquin River	7	X	6.10	S	S	M	S	S	S	-	M	S	S	S	-	S
Unit No. 02 Old River	7	X	4.20	S	S	M	S	S	S	-	U	S	S	S	-	S
No. 1602																
San Joaquin River	13	X	6.30	S	S	S	S	S	M	-	S	S	S	S	-	S
No. 2031																
Unit No. 01 Stanislaus River	4	X	7.20	S	S	S	M	M	S	-	M	S	M	S	-	S
Unit No. 02 San Joaquin River	4	X	6.00	S	S	M	S	M	S	-	S	S	S	S	-	S

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Corps Operations and Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
No. 2058																
Paradise Cut	10	X	6.70	S	S	S	S	S	S	-	S	S	S	S	-	S
No. 2062																
Unit No. 01 San Joaquin River	9	X	2.70	M	S	S	S	M	S	-	U	S	S	S	-	M
Unit No. 02 Paradise Cut	9	X	4.00	M	S	S	S	U	S	-	M	S	S	S	-	M
Unit No. 03 Old River	9	X	5.60	M	S	S	M	S	S	-	S	S	S	S	-	M
No. 2063																
San Joaquin River	6	X	10.60	S	S	M	M	M	S	-	S	S	M	S	-	M
No. 2064																
Unit No. 01 San Joaquin River	3	X	5.70	S	S	M	M	M	M	-	S	-	S	S	-	U
Unit No. 02 Stanislaus River	3	X	6.20	S	S	M	M	M	S	-	S	-	S	S	-	M
No. 2075																
San Joaquin River	3	X	7.50	S	S	M	S	M	S	-	S	S	S	S	-	M
No. 2085																
Unit No. 01 San Joaquin River	11	X	5.20	S	S	M	S	S	S	-	S	S	M	S	-	S
Unit No. 02 San Joaquin River	11		0.70	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 03 San Joaquin River	11		0.30	S	S	S	M	M	M	-	S	S	S	S	-	M
No. 2089																
Unit No. 01 Old River	8	X	1.50	S	S	S	M	M	S	-	S	S	M	S	-	M
Unit No. 02 Salmon Slough	8	X	1.40	S	S	U	U	M	S	-	S	S	S	S	-	M

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
No. 2091																
Unit No. 01 San Joaquin River	6/6A	X	7.60	M	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 02 San Joaquin River	6A		0.30	M	S	S	S	S	S	-	S	S	S	-	-	S
No. 2092																
San Joaquin River	5	X	3.80	S	S	S	S	S	S	-	S	S	S	S	-	S
No. 2094																
Unit No. 01 San Joaquin River	3	X	2.80	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 02 San Joaquin River	3		0.50	S	S	S	S	S	S	-	S	S	S	S	-	S
No. 2095																
Unit No. 01 Paradise Cut	10	X	1.50	S	S	S	S	S	S	-	S	S	S	S	-	M
Unit No. 2 San Joaquin River	11	X	3.40	S	S	S	M	M	S	-	M	S	S	S	-	M
No. 2096																
San Joaquin River	3	X	0.17	S	S	S	S	S	S	-	S	S	S	S	S	S
No. 2099																
San Joaquin River	12	X	2.40	Did Not Inspect; Possible Decertification.												
No. 2100																
San Joaquin River	12	X	2.70	Did Not Inspect; Possible Decertification.												
No. 2101																
Unit No. 01 San Joaquin River	12	X	3.20	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 02 San Joaquin River	12	X	0.30	S	S	S	S	S	S	-	S	S	S	S	-	S

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
							SL	MS								
No. 2102																
San Joaquin River	12	X	1.80	Did Not Inspect; Possible Decertification.												
No. 2107																
Unit No. 01 San Joaquin River	9	X	2.40	M	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 02 Paradise Cut	9	X	1.80	M	S	S	S	S	S	-	S	S	S	S	-	S
Named District																
Lower San Joaquin Levee District																
Unit No. 01 San Joaquin River	a	X	22.60	S	S	S	M	M	S	-	M	S	S	S	-	S
Unit No. 02A San Joaquin River	a, b	X	7.90	S	S	S	M	M	S	-	M	S	S	S	-	S
Unit No. 02B San Joaquin River	a, b	X	5.90	S	S	M	M	M	S	-	S	S	S	S	-	S
Unit No. 03 San Joaquin River	a	X	2.20	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 04 San Joaquin River	a	X	1.60	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 05 East Side Bypass	a	X	34.70	S	S	S	S	S	S	-	M	S	S	S	-	S
Unit No. 06 East Side Bypass	a	X	36.40	S	S	S	S	S	M	-	M	S	S	S	-	S
Unit No. 07 Bear Creek Bypass	a	X	3.60	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 08 Bear Creek Bypass	a	X	3.60	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 09 Owens Creek Bypass	a	X	0.90	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 10 Owens Creek Bypass	a	X	0.80	S	S	S	S	S	S	-	S	-	S	S	-	S
Unit No. 11 Mariposa Bypass	a	X	3.30	S	S	S	S	S	S	-	S	S	S	S	-	S
Unit No. 12 Mariposa Bypass	a	X	3.40	S	S	S	S	M	S	-	S	-	M	S	-	S
Unit No. 13 Ash Slough	a	X	1.30	S	S	S	S	S	S	-	S	S	S	S	-	S

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Unit No. 14 Ash Slough	a	X		1.30	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 15 Berenda Slough	a		X	2.00	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 16 Berenda Slough	a		X	2.00	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 17A Chowchilla Canal Bypass	a, b	X		10.30	S	S	S	S S	S	-	S	-	S	S	-	M
Unit No. 17B Chowchilla Canal Bypass (LM 2.50 to 8.35)	a, b	X		15.30	S	S	S	S S	S	-	S	-	S	S	-	M
Unit No. 18 Chowchilla Canal Bypass	a		X	15.30	S	S	S	S S	S	-	S	-	S	S	-	M
Unit No. 22 East Side Canal	a		X	5.50	S	S	U	S S	S	-	M	-	S	S	-	S
Unit No. 23 San Joaquin River	a	X		10.20	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 24 Chowchilla Canal Bypass	a		X	8.30	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 25 Salt Slough	a	X		2.50	S	S	S	S S	S	-	S	S	S	S	-	S
Madera County Flood Control and Water Conservation Agency																
Unit No. 01 Ash Slough	a	X		2.40	S	S	S	S S	M	-	M	-	S	S	-	M
Unit No. 02 Ash Slough	a		X	2.10	S	S	M	S S	M	-	S	-	S	S	-	S
Unit No. 03 Berenda Slough	a	X		1.60	S	S	S	S S	M	-	S	-	M	S	-	S
Unit No. 04 Berenda Slough	a		X	2.30	S	S	S	S S	S	-	S	-	M	S	-	M
Unit No. 05 Fresno River	a	X		9.20	S	S	S	S S	M	-	S	-	S	S	-	M
Unit No. 06 Fresno River	a		X	9.10	S	S	S	S S	S	-	S	-	S	S	-	S
Merced County Stream Group																
Unit No. 01 Black Rascal Diversion	a	X		1.60	S	S	S	S S	S	-	S	-	S	S	-	S
Unit No. 02 Black Rascal Diversion	a		X	1.90	S	S	S	M S	M	-	S	-	M	S	-	M

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TABLE A-6. PROJECT LEVEE MAINTENANCE WITHIN SAN JOAQUIN RIVER BASIN - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank	Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions	Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Unit No. 03 Owens Creek Diversion	a	X		1.40	S	M	S	M M	U	-	S	-	S	S	-	M
Unit No. 04 Owens Creek Diversion	a		X	1.40	S	M	S	U U	U	-	S	-	U	S	-	U
San Joaquin County Flood Control District																
Unit No. 01 Littlejohn Creek	a		X	2.90	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 02 Littlejohn Creek	a, d		X	3.50	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 06 SPRR Drain	a		X	0.50	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 07 Bear Creek	a		X	16.80	S	S	S	S S	S	-	S	S	S	S	S	S
Unit No. 08 Bear Creek	a		X	16.50	S	S	S	S S	S	-	S	S	S	S	S	S
Unit No. 09 Paddy Creek	a		X	1.50	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 10 Paddy Creek	a		X	1.40	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 11 North Paddy Creek	a		X	3.60	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 12 North Paddy Creek	a		X	3.90	S	S	M	S S	S	-	M	S	S	S	-	S
Unit No. 13 Middle Paddy Creek	a		X	1.40	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 14 Middle Paddy Creek	a			1.40	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 15 Mormon Slough	a		X	25.60	S	S	S	S S	S	-	S	S	S	S	S	S
Unit No. 16 Mormon Slough	a		X	23.70	S	S	S	S S	S	-	S	S	S	S	S	S
Unit No. 17 Potter Creek			X	0.90	S	S	S	S S	S	-	S	S	S	S	-	S
Unit No. 18 Potter Creek	a		X	0.90	S	S	S	S S	S	-	S	S	S	S	S	S
Turlock Irrigation District																
Gomes Lake Spur Levee (Formerly RD 2091, Unit 2)	6A			0.30	M	M	S	S S	S	-	S	S	S	S	-	S

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TABLE A-7. PROJECT LEVEE MAINTENANCE WITHIN MISCELLANEOUS STREAMS BASINS - 2006
Compliance with Federal Regulations Governing Maintenance of Flood Protection Works

District or Area	Maintenance Manual Unit Number	Left Bank Right Bank	Length In Miles	Readiness for Flood Emergency	Adequate Levee Section & Grade	Adequate Encroachment Control	Vegetation & Obstructions		Rodent & Animal Control	Seepage / Boils	Slope Stability & Repair of Cracks, Erosion & Caving	Condition of Rock Revetment	Condition of Crown & Roadway	Condition of Pipes & Interior Drainage System	Concrete Floodwalls / Closure Structures	Overall Ratings and District Maintenance Program
Named District																
Lake County Flood Control District																
Unit No. 01 Middle Creek	a	X	7.20 *	S	S	M	S	M	S	-	-	-	S	S	-	S
Unit No. 02 Middle Creek	a	X	3.15	S	S	M	M	M	S	-	M	-	S	-	-	S
Unit No. 03 Scotts Creek	a	X	1.39	S	S	S	S	M	S	-	M	-	S	-	-	S
Unit No. 04 Page, Alley, and Clover Creek Diversion	a	X	1.53	S	S	M	S	M	S	-	-	-	S	-	-	S
Unit No. 05 Clover Creek and Clover Creek Diversion	a	X	1.04	S	S	S	S	S	S	-	S	-	S	-	-	S
Plumas County																
Unit No. 01 North Fork Feather River	a	X	1.90	S	S	S	M	M	S	-	S	S	S	S	-	S
Unit No. 02 North Fork Feather River	a	X	1.30	S	S	S	M	M	S	-	S	S	S	S	-	S
Maintenance Area																
MA-0017																
Lake County Sutter Maintenance Yard - Middle Creek	a	X	3.90	S	S	M	M	S	S	-	S	-	S	-	-	S

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* Actual inspected length is 3.42 miles.

**TABLE A-8 CHANNEL CLEARANCE AND CONDITION - 2006
SACRAMENTO RIVER BASIN**

Stream	Maintaining Agency	Brush Mechanically Cleared (acres)	Brush Hand Cleared (acres)	Brush Chemically Controlled (acres)	Sediment Removed (cubic yards)	Overall Condition	Reason for Condition
American River	DWR-S.M.Y						
Arcade Creek	DWR-S.M.Y			4			
Cache Creek	DWR-S.M.Y	35		24			
Cache Creek Settling Basin	DWR-S.M.Y						
Knights Landing Ridge Cut	DWR-S.M.Y	71		8			
Linda Creek	DWR-S.M.Y						
Magpie Creek	DWR-S.M.Y			2			
Natomas Cross Canal	DWR-S.M.Y	0		4			
Natomas East Main Drain	DWR-S.M.Y			4			
Putah Creek	DWR-S.M.Y			6			
Sacramento Bypass	DWR-S.M.Y			6			
Willow Slough	DWR-S.M.Y			4			
Yolo Bypass (Freemont Weir)	DWR-S.M.Y	475		5	1,000,000		
Yolo Bypass	DWR-S.M.Y			4			
Schriener	DWR-S.M.Y	60		2			
Bear River	DWR-S.Y.	65	0	0	0		
Big Chico Creek	DWR-S.Y.	0	0	0	0		
Big Chico Creek (Diversion)	DWR-S.Y.						
Butte Creek	DWR-S.Y.	0	10	0	0		
Butte Slough (to Mawson Bridge)	DWR-S.Y.						
Cherokee Canal	DWR-S.Y.	650	60	0	0		
Colusa Basin Drain	DWR-S.Y.						
Colusa Bypass	DWR-S.Y.	5.5	0	0	0		
Deer Creek	DWR-S.Y. (Maintenance performed by Tehama County)						
Dry Creek (Bear River)	DWR-S.Y.						
East and West Interceptor Canal	DWR-S.Y.						
Elder Creek	DWR-S.Y. (Maintenance performed by Tehama County)			20			
Feather River	DWR-S.Y.	49	0	0	0		
Honcut Creek	DWR-S.Y.						
Lindo Channel	DWR-S.Y.						
Little Chico Creek	DWR-S.Y.	0	5	7.5	0		
Mud Creek	DWR-S.Y.	0	3	0	0		
Sacramento River	DWR-S.Y.	0	25	0	0		
Sutter Bypass (Mawson Bridge-South)	DWR-S.Y.	166	0	0	0		
Sutter Bypass (Nelson Bend Wildlife Area)	DWR-S.Y.		5				
Sycamore Creek	DWR-S.Y.	75	0	0	0		
Tisdale Bypass	DWR-S.Y.	265	0	0	0		
Wadsworth Canal	DWR-S.Y.						
Western Pacific Interceptor	DWR-S.Y.						
Yuba River	DWR-S.Y.						
McClure Creek	Tehama			10			
Salt Creek	Tehama			5			
Subtotals:		1,916.5	108.0	115.5	1,000,000.0		

Note: Missing information indicates that the requested information was not submitted to DWR in writing by the district.

DWR-S.M.Y. - DWR Sacramento Maintenance Yard

DWR-S.Y. - DWR Sutter Maintenance Yard

**TABLE A-9 CHANNEL CLEARANCE AND CONDITION - 2006
SAN JOAQUIN RIVER BASIN**

Stream	Maintaining Agency	Brush Mechanically Cleared (acres)	Brush Hand Cleared (acres)	Brush Chemically Controlled (acres)	Sediment Removed (cubic yards)	Overall Condition	Reason for Condition
Ash Slough	LSJLD	0	0	3	0	S	
Berenda Slough	LSJLD	0	0	6	0	S	
Eastside Bypass	LSJLD	0	0	8	500	S	
Mariposa Bypass	LSJLD	0	0	0	0	S	
Owens Creek	LSJLD	0	0	0	0	S	
San Joaquin River (Chowchilla Canal Bypass to Gravelly Ford)	LSJLD	0	0	0	20,000	M	
San Joaquin River (Merced River to Mendota Dam)	LSJLD	0	0	0	5,400	U	
Bear Creek (Merced County)	LSJLD	0	0	0	0	S	
Chowchilla Canal Bypass	LSJLD	8	0	6	9,000	S	
Ash Slough	Madera County						
Berenda Slough	Madera County						
Chowchilla River	Madera County						
Fresno River*	Madera County	441.52					
Black Rascal Creek	MID						
Burns Creek	MID						
Mariposa Creek	MID						
Miles Creek	MID						
Owens Creek	MID						
Owens Creek Diversion	MID	10					
Bear Creek (Merced County)	MID						
Black Rascal Creek Diversion	MID	7					
Canal Creek	MID	83					
French Camp Slough	None						
Paradise Cut	None						
San Joaquin River (Mendota Dam to Chowchilla Canal Bypass)	None						
San Joaquin River (Merced River to Mossdale)	None						
Stanislaus River	None						
Littlejohn Creek, Unit 3,4,5	SJCFCD						
Mormon Slough	SJCFCD						
North Littlejohn Creek	SJCFCD						
Paddy Creek Group	SJCFCD						
Bear Creek (San Joaquin County)	SJCFCD						
Duck Creek Diversion, Unit 5	SJCFCD						
Subtotals:		549.5	0.0	23.0	34,900.0		

* The Approximate amount of area of the Fresno River that Madera County performed mechanical vegetation management during the period of late October, 2006 through April, 2007 is 441.5c acres

Note: Missing information indicates that the requested information was not submitted to DWR in writing by the district.

**TABLE A-10 CHANNEL CLEARANCE AND CONDITION - 2006
MISCELLANEOUS STREAMS BASINS**

Stream	Maintaining Agency	Brush Mechanically Cleared (acres)	Brush Hand Cleared (acres)	Brush Chemically Controlled (acres)	Sediment Removed (cubic yards)	Overall Condition	Reason for Condition
Ash Creek	Adin CSD	0	0	0	0		
Dry Creek	Adin CSD	0	0	0	15		
Alonzo Drain	Fairfield-Suisun Sewer District	9.8	0	7.75	0	S	
Laurel Creek Diversion	Fairfield-Suisun Sewer District	6.8	0	0	0	M	
Ledgewood Creek	Fairfield-Suisun Sewer District	31.8	0	3.5	0	S	
McCoy Creek	Fairfield-Suisun Sewer District	3.5	0	0	0	M	
Union Avenue Diversion	Fairfield-Suisun Sewer District	11.8	0	11.5	0	S	
Alley Creek	Lake County FCD						
Clover Creek	Lake County FCD						
Clover Creek Diversion	Lake County FCD						
Middle Creek	Lake County FCD	0	9	0	0		
Page Creek	Lake County FCD						
Scotts Creek	Lake County FCD						
Truckee River	Placer County						
Subtotals:		63.7	9.0	22.8	15.0		

Note: Missing information indicates that the requested information was not submitted to DWR in writing by the district.

Flood Control Projects and Agencies

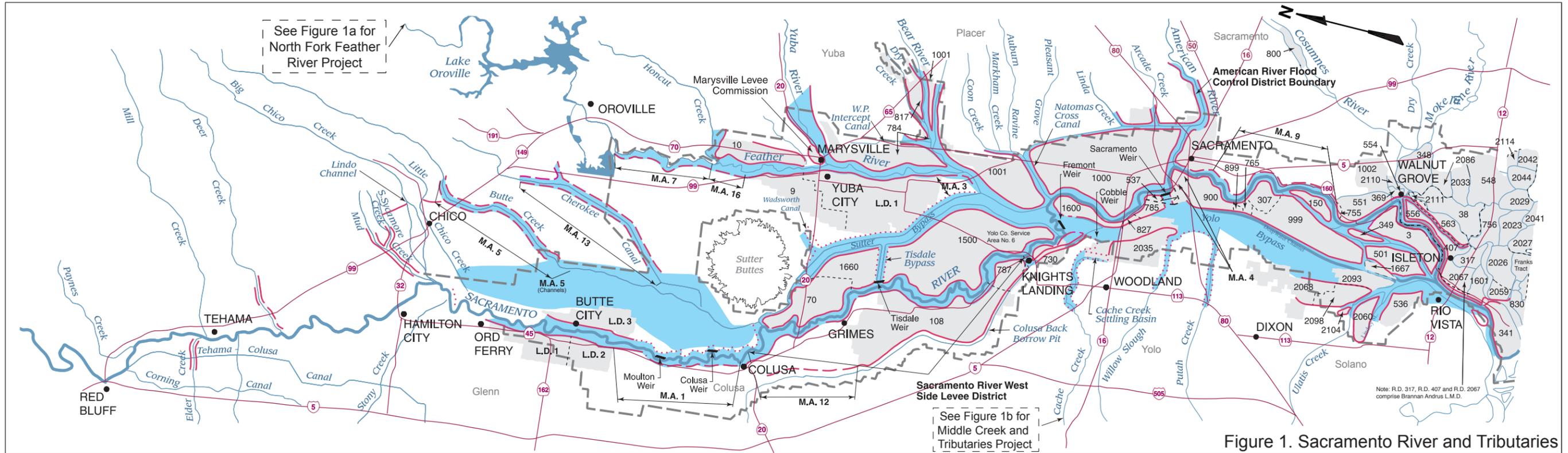


Figure 1. Sacramento River and Tributaries

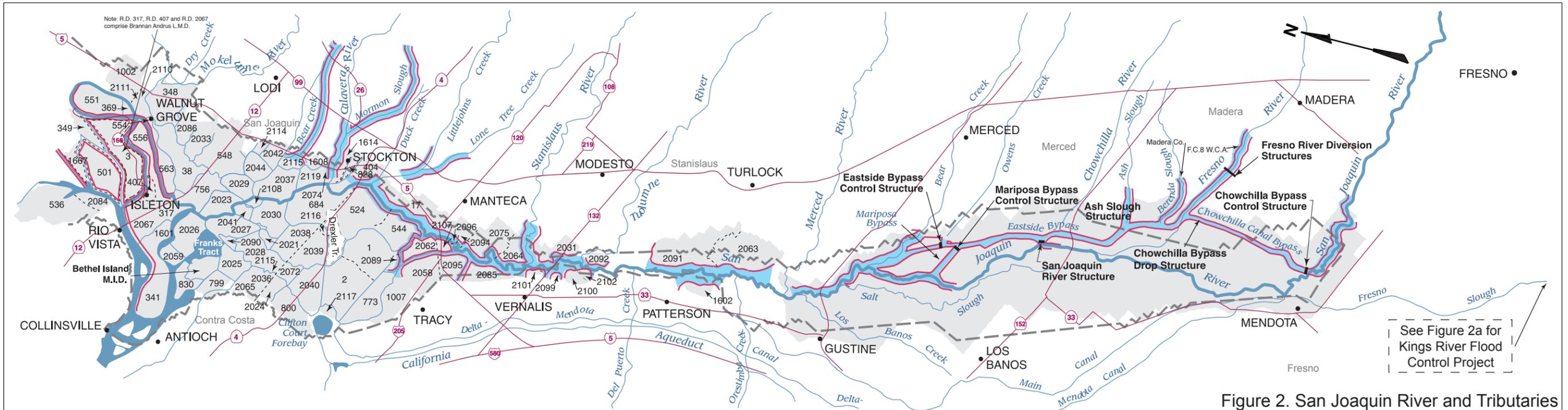
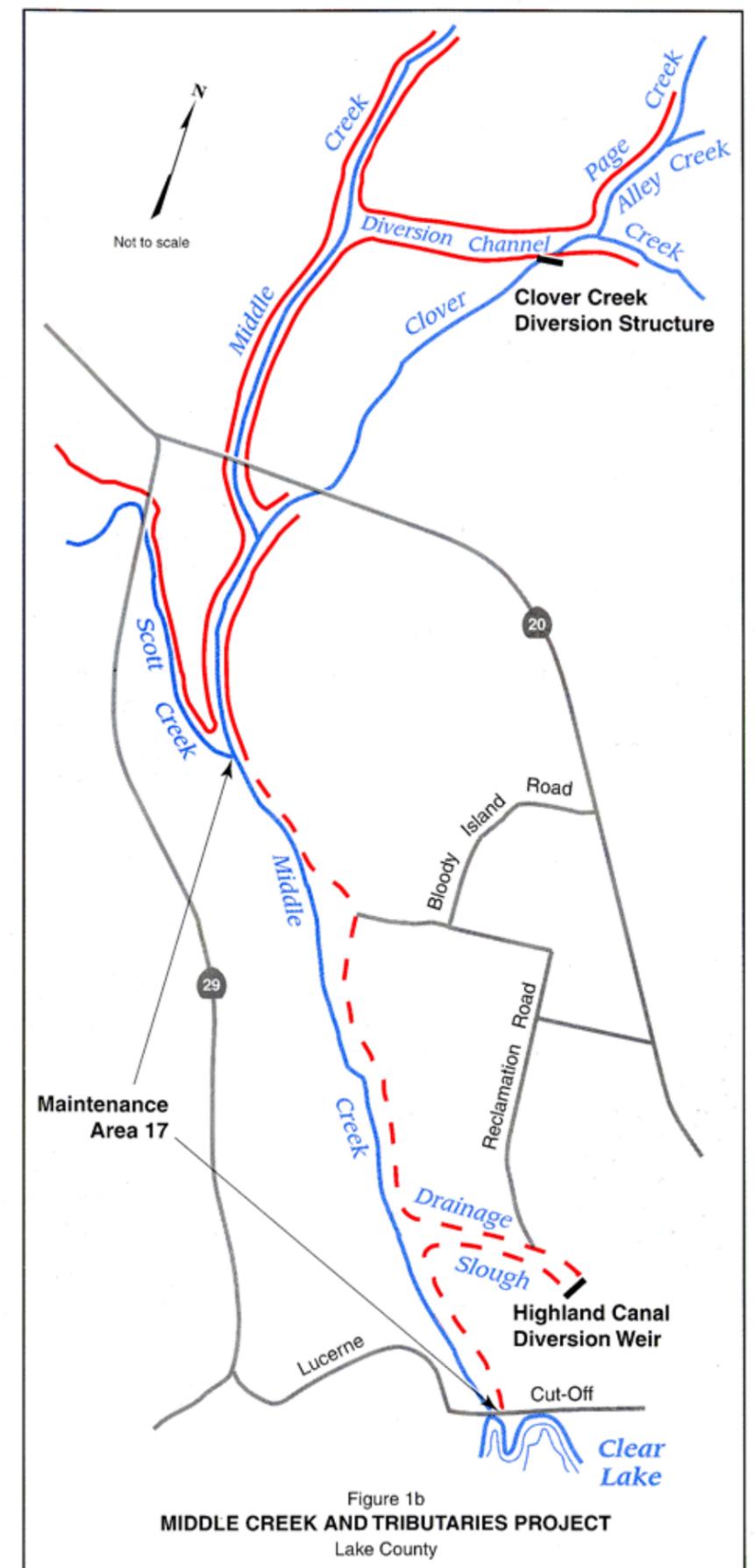
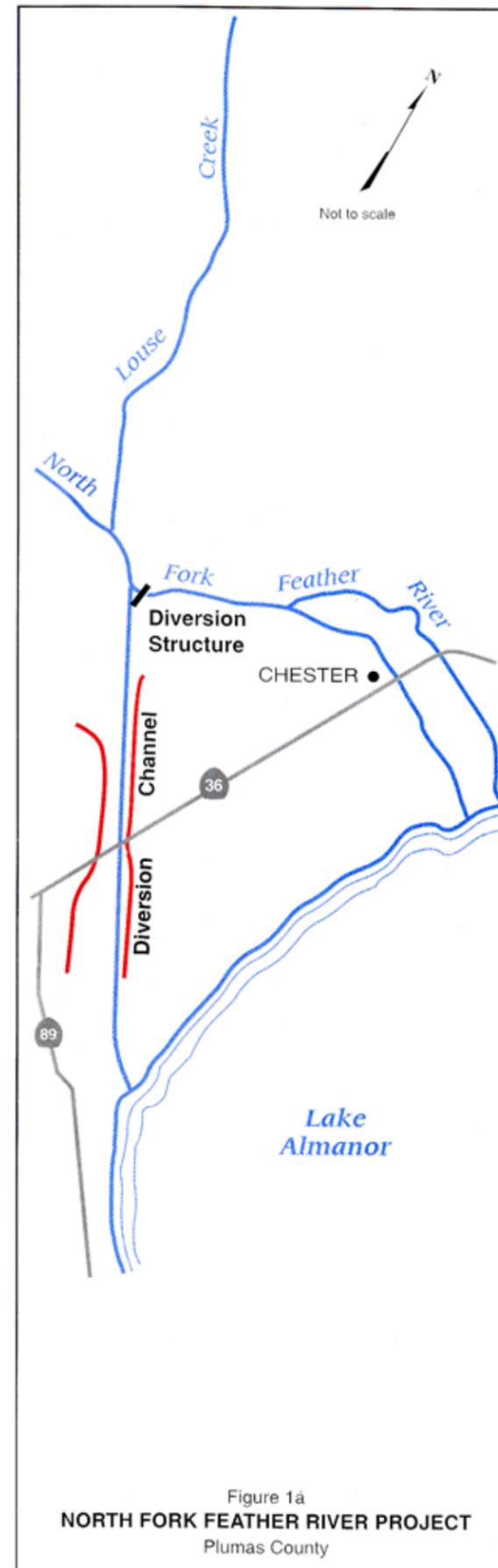
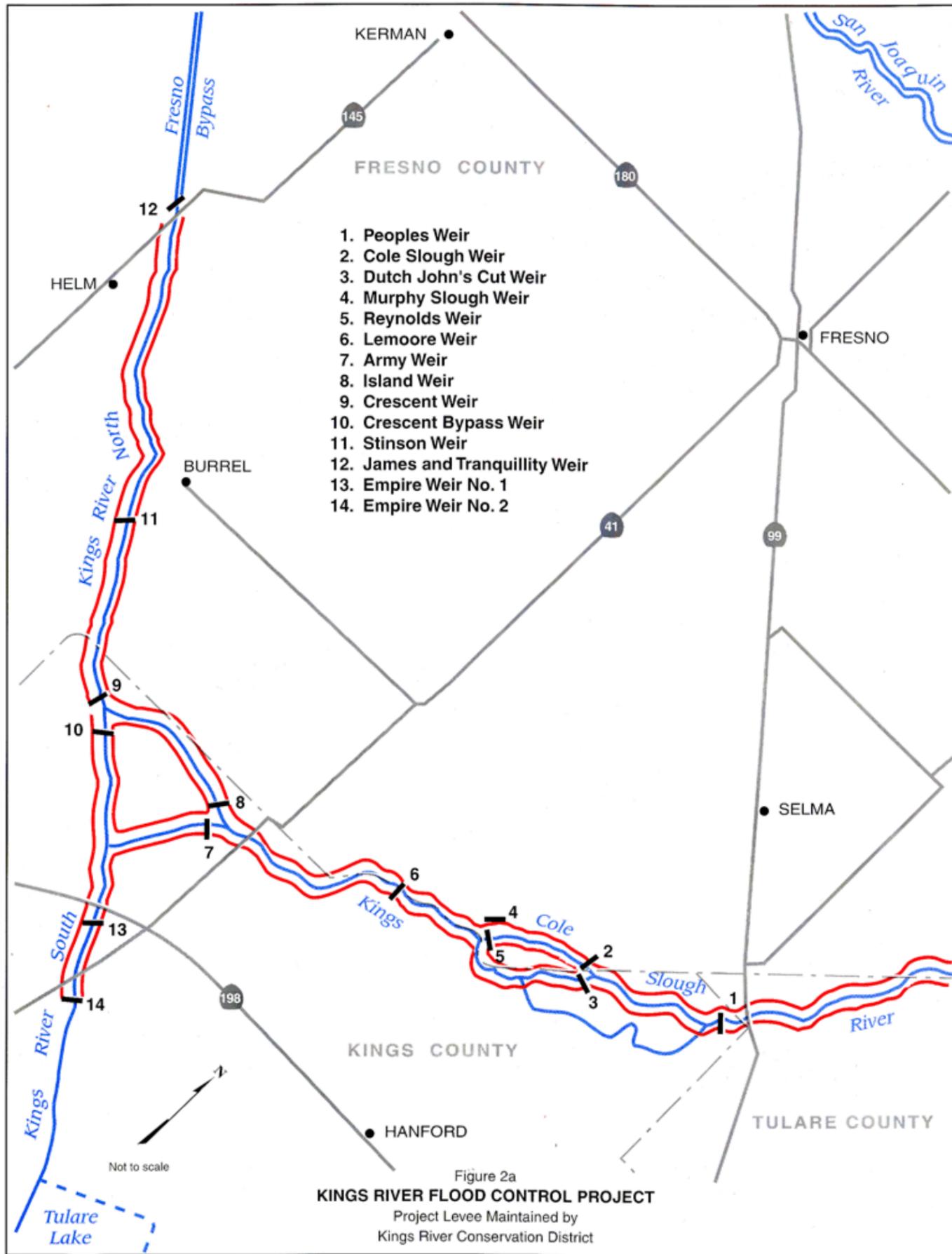
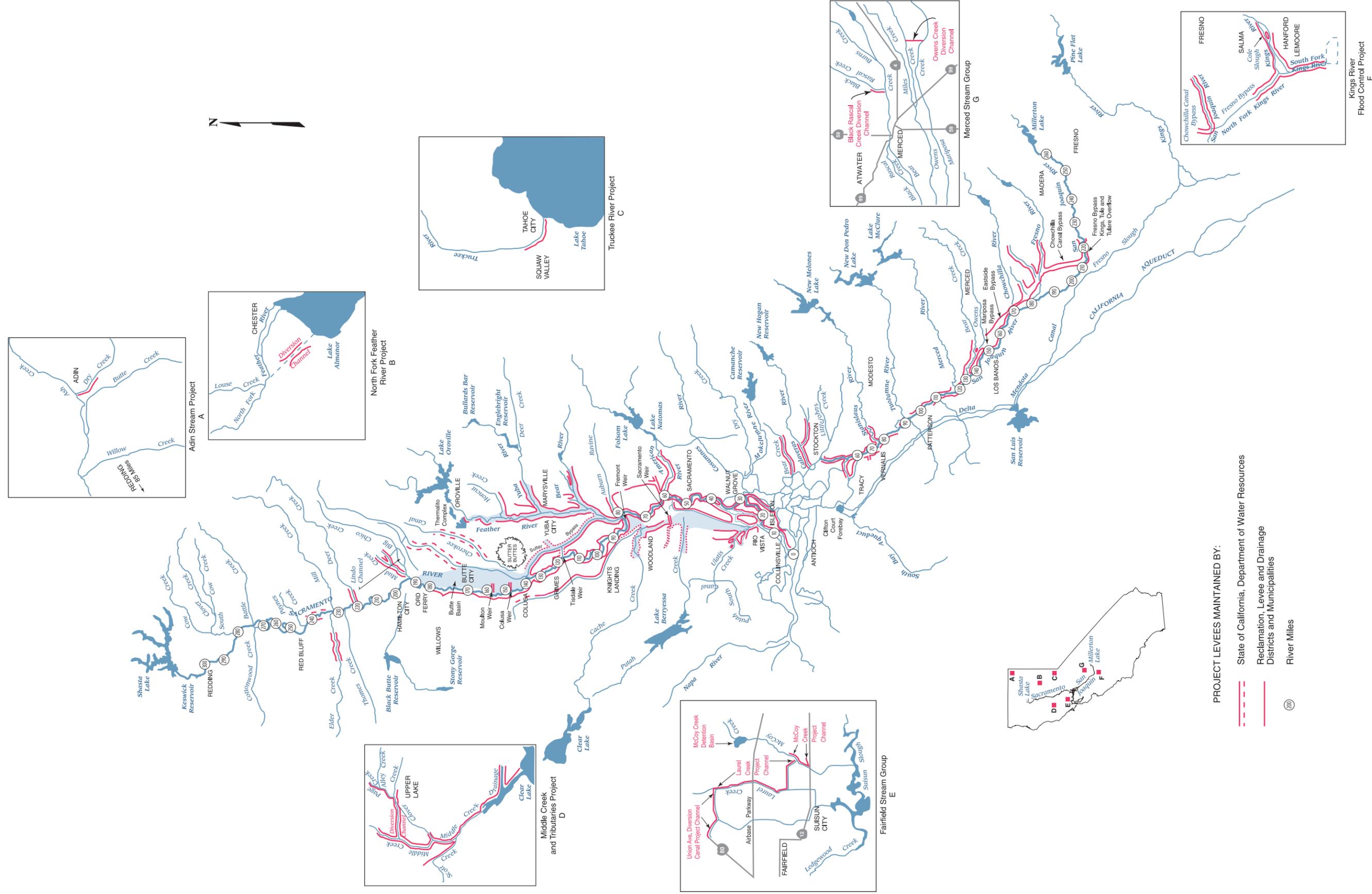


Figure 2. San Joaquin River and Tributaries

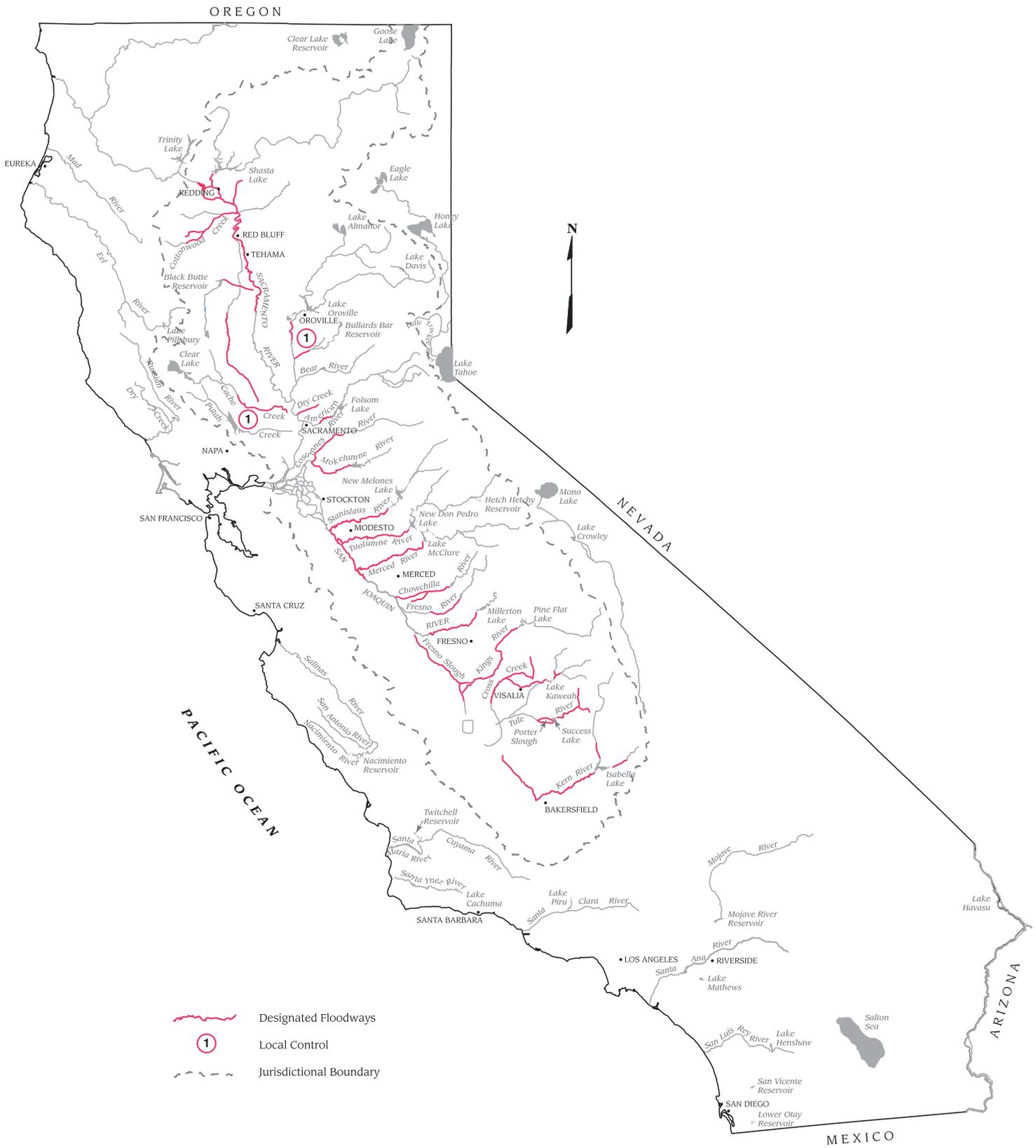
- R.D. 20 Reclamation and Levee Districts
- Project Levees Maintained by Department of Water Resources, Sec. 12878 to Sec. 1278.45 of the Water Code
- Project Levees Maintained by Department of Water Resources, Sec. 8361 of the Water Code
- Project Levees Maintained by Reclamation, Levee, and Drainage Districts and Municipalities
- Boundary of Sacramento-San Joaquin Drainage District

Revised March 2006





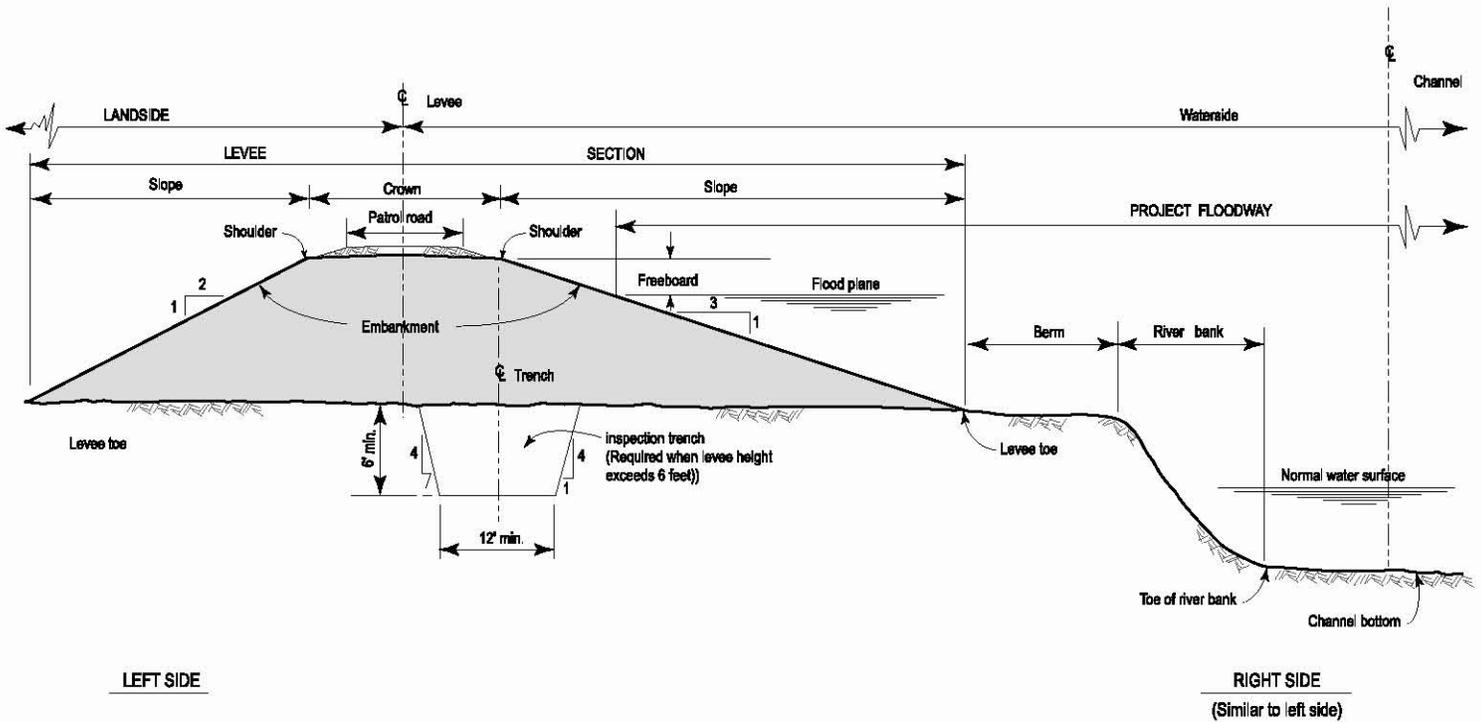
- PROJECT LEVEES MAINTAINED BY:
- State of California, Department of Water Resources
 - Reclamation, Levee and Drainage Districts and Municipalities
 - RM River Miles



-  Designated Floodways
-  Local Control
-  Jurisdictional Boundary

The Sacramento River and the San Joaquin River Flood Control System
 Reclamation Board Adopted
 Designated Floodways

Project Levee Standards and Terminology



TYPICAL FLOODWAY
LOOKING DOWNSTREAM
Not to Scale

ITEM	MINIMUM DIMENSIONS OF STANDARD LEVEE SECTIONS			
	MAIN RIVER CHANNELS	MAJOR TRIBUTARIES	MINOR TRIBUTARIES	BY PASSES
CROWN WIDTH	20'	20'	12'	20'
LAND SLOPE	1 on 2	1 on 2	1 on 2	1 on 2
WATER SLOPE	1 on 3	1 on 3	1 on 3	1 on 3
FREEBOARD	3' (1)	3'	3'	4' to 6'
PATROL ROAD WIDTH	12	12'	10'	12'

NOTE (1) 5 FEET ON MAIN CHANNEL BELOW CACHE SLOUGH (SACRAMENTO RIVER)