

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



2009
INSPECTION REPORT
OF THE
CENTRAL VALLEY STATE-FEDERAL
FLOOD PROTECTION SYSTEM

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LIST OF ACRONYMS

Acronym	Complete Phrase
AB	Assembly Bill
CDEC	California Data Exchange Center
CFR	Code of Federal Regulations
CWC	California Water Code
DWR	Department of Water Resources
FCW	Flood Control Work(s)
FPIIB	Flood Project Integrity & Inspection Branch
FPIS	Flood Project Inspection Section
CVFPB or the Board	Central Valley Flood Protection Board (formerly known as the Reclamation Board)
USACE, Corps	United States Army Corps of Engineers
FEMA	Federal Emergency Management Agency
LMA	Local Maintaining Agency
LD	Levee District
MA	Maintenance Area
NA	Named Area
ST	State Maintained Area
RS	Rock Site
O&M	Operation & Maintenance
ICW	Inspection of Completed Works
A	Inspection Rating—Acceptable
M	Inspection Rating—Minimally Acceptable
M*	Inspection Rating—Minimally Acceptable due to the presence of items rated U
U	Inspection Rating—Unacceptable
PO	Inspection Rating—Partially Obstructing
CO	Inspection Rating—Completely Obstructing
NR	Inspection Rating—Not Rated

1 INTRODUCTION

This report documents the results of the California Department of Water Resources (DWR) 2009 inspections of the State-federal flood protection system in California's Central Valley.

1.1 Purpose and Scope

Federal Flood Control Regulations (Title 33 of the Code of Federal Regulations, Section 208.10 (33 CFR 208.10)), require that federal flood protection facilities are inspected at least four times a year — immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding 90 days. In addition, inspections at intermediate times may be necessary. These periodic inspections are specifically to insure that maintenance measures for project facilities are being effectively carried out, not to determine other inherent problems (geotechnical, flow capacity, etc.) with the project facilities.

The purpose of this 2009 Inspection Report of the Central Valley State-federal Flood Control System is to serve as the annual report on the effectiveness of facility maintenance activities of the maintaining agencies. This report covers levees, channels, and structures including pumping plants. Deficiencies are noted and each agency receives a rating for the facilities within its maintenance responsibilities. The report is based primarily on DWR's inspections conducted during the summer and fall of 2009.

This annual report is intended for use by the U.S. Army Corps of Engineers (USACE), DWR, the Central Valley Flood Protection Board (the Board), Local Maintaining Agencies (LMA), and other interested parties.

DWR's Flood Project Integrity and Inspection Branch (FPIIB) conducts two comprehensive levee inspections and one channel and structure inspection each year. DWR completed annual fall inspections in December 2009, documenting the location, size, type, and rating of maintenance deficiencies. Based on the results of these inspections, LMAs plan their maintenance activities. LMAs conduct inspections in the winter and summer. Since project facilities are inspected at least four times each year, there are other inspection reports for different

Maintenance Inspection Reporting

2009 Inspection Report of the Central Valley State-Federal Flood Protection System. Annual report prepared by DWR based on DWR's fall inspections — this report.

AB 156 Local Agency Annual Report. Annual report prepared by DWR based on information submitted to DWR by local maintaining agencies.

Quarterly Reports to the Board. FPIIB verbal presentations outlining inspection activities.

Levee Mile Report. Reports generated from inspections detailing maintenance deficiencies found during the inspection. A Levee Mile Report is generated for each unit and includes photos of some issues noted.

San Joaquin River Flood System Erosion Report. Annual report prepared by DWR based on supplemental inspections conducted by FPIIB personnel. A summary of these surveys is included in this report and the data generated is used in determining overall ratings for LMAs.

uses (see side bar). As requested, DWR will report quarterly to the Board on inspection activities.

This report focuses on the inspection results for project levees, channels, and structures. Appendices contain more detailed information on project background, inspection methodology, and inspection results:

- **Appendix A.** Background information on the State-federal flood protection system, and maintenance requirements. Includes plates that show locations of project facilities.
- **Appendix B.** Information on USACE inspection criteria and State inspection criteria and rating methodology.
- **Appendix C.** Tables containing inspection categories and descriptions used in the field to distinguish between Acceptable, Minimally Acceptable, and Unacceptable.
- **Appendix D.** Summary reports of levee maintenance inspection results. These reports also compare 2008 to 2009 results.
- **Appendix E.** Summary reports of channel maintenance inspection results.
- **Appendix F.** Summary reports of structures maintenance inspection results.
- **Appendix G.** Summary reports of pumping plant maintenance inspection results.
- **Appendix H.** Supplemental figures and tables for information contained in Sections 2 through 4.

1.2 Highlights for 2009

DWR applied the same inspection criteria and overall rating methodology used in the 2008 and 2007 levee inspections. Overall the system showed continued maintenance improvements from 2008 to 2009.

- The results of the 2009 levee inspections show 30 of the 106 LMAs receiving Unacceptable ratings, decreasing from 39 in 2008. The number of LMAs receiving Acceptable ratings increased from 42 in 2008 to 51 in 2009. The number of LMAs receiving Minimally Acceptable ratings stayed the same in 2008 and 2009 at 25.
- This improved inspection result was accomplished despite unusually late rains that forced many districts to do more maintenance than usual.
- DWR continues to follow USACE inspection criteria for most categories, but uses interim vegetation criteria described in California's Central Valley Flood System Improvement Framework document.
- Modifications to the inspection criteria and rating methodology for Channels and Structures were made for 2009. Because of these changes it is difficult to declare that maintenance of these features has changed.
- The 2009 inspection yielded 19 channels and 43 structures rated as Acceptable, 7 channels and 13 structures rated as Minimally Acceptable, while no channel or structure received Unacceptable ratings.

- The tool and procedures used in inspecting channels were updated to prescribe inspection of five categories at designated check points to assist in tracking maintenance in the future.
- The methodology used to determine overall ratings for channels and structures was re-evaluated and modified to be more consistent with how overall levee ratings are determined.

Aside from inspection procedure changes, a highlight includes changes to the structure of this report. Reporting of inspection results meeting regulatory requirements have been brought forward in the document. Detailed analysis of inspection results has been pushed into the appendix to simplify the body of the report. Background discussion of the Central Valley flood protection system, including relationships between federal, state, and local agencies, and responsibilities outlined in Project O&M manuals have also been appended.

Additional 2009 highlights involve other activities within FPIIB.

- FPIIB initiated monthly coordination meetings with the USACE to answer questions that both groups have regarding inspections, maintenance practices and recently enacted regulations.
- FPIIB responded during emergency events on Bradford Island and the October 13 storm.

DWR continues to improve its inspection program, undergo activities detailing the maintenance condition of features, and works with the LMAs to help ensure a functional flood protection system.

A copy of this annual report and other related reports have been published on-line at <http://cdec.water.ca.gov/fsir.html>.

2 2009 LEVEE MAINTENANCE INSPECTION RESULTS

The results of the 2009 levee maintenance inspection show that many LMAs made significant improvements since the 2007 inspection. DWR continues to improve the accuracy and usability of the tools and data it uses to inspect and rate LMAs. Each local maintaining agency received one of three possible ratings based on the conditions of its levees:

- **Acceptable (A)** – No immediate work required, other than routine maintenance. The flood protection project will function as designed and intended, with a high degree of reliability, and necessary cyclic maintenance is being adequately performed.
- **Minimally Acceptable (M)** – One or more deficient conditions exist in the flood protection project that need to be improved or corrected. However, the project will essentially function as designed with a lesser degree of reliability than what the project could provide.
- **Unacceptable (U)** – One or more deficient conditions exist that may *prevent* the project from functioning as designed, intended, or required.

Appendix B describes the rating criteria and methodology used for levees. Table 2-1 and Figure 2-1 show the numbers of LMAs receiving each rating for the years 2007, 2008, and 2009. In general, the LMAs have significantly improved levee maintenance since 2007.

Unit lengths of some LMAs have changed in 2009 to match the most up-to-date information that the state has access to and reflect recently surveyed alignments for many of the levees. Some minor differences in some of the results can be seen due to these changes but reflect the best information available.

In 2009, NA0007 and NA0020, East and West Interceptor Canals were combined into NA0020, East-West Interceptor Canals. This change has been shown retroactively for purposes of comparing from year to year.

Table 2-1: Summary of Levee Maintenance Ratings for 2007 through 2009

	2007	2008	2009
A=Acceptable	24	42	51
M=Minimally Acceptable	18	25	25
U=Unacceptable	64	39	30

Ratings for each LMA are included in Table 2-2. The number of LMAs receiving Unacceptable ratings decreased while the number of Acceptable ratings increased in 2009 despite unusual weather patterns that caused many LMAs to spend more time maintaining vegetation and grasses than usual; some districts were forced to mow twice as often as usual. The length of maintenance deficiencies throughout the system continues to decrease by about half. This demonstrates the significant efforts many of the districts are making to comply with the maintenance criteria.

Figure 2-2 shows the number of agencies that received better, unchanged, or worse ratings in 2009 compared with 2008 and 2007. More LMAs had decreases or remained unchanged and less had increases in their ratings in 2009 than in 2008. However, more

LMA's ratings improved than declined in 2009 resulting in a net positive change in ratings and further shows the continued overall improvement of maintenance in the system.

Vegetation deficiencies make up the majority of deficient levee miles for 2009 followed by a significant amount of trim/thin trees and animal control. The remainder of deficient miles comes from encroachments, erosion, crown surface, and other items. Appendix H shows supplemental figures showing further analysis for the various basins and types of deficiencies.

Encroachments posing safety concerns may for various reasons fall outside the jurisdiction of the LMA to correct. Inspectors document these encroachments and rate them as Partially Obstructing (PO) or Completely Obstructing (CO). In 2009, 76 miles of PO and 10 miles of CO encroachments were identified. PO and CO ratings are explained in Appendix B.

A summary report showing the length of maintenance deficiencies noted in 2008 and 2009 for each LMA can be found in Appendix D. This report also shows the change in threshold percent for each of these maintenance deficiency categories. Detailed reports showing the inspections for each LMA, including photos, can be found at <http://cdec.water.ca.gov/fsir.html>.

The following photos show examples of Acceptable, Minimally Acceptable, and Unacceptable maintenance of vegetation and trees.



Acceptable Vegetation Maintenance: Good grass coverage with no grass or brush over 12" tall



Minimally Acceptable Maintenance: Grass or brush partially obstruct visibility and access



Unacceptable Maintenance: Grass or brush completely obstruct visibility and access



Acceptable Tree Maintenance: No limbs within 5' of the levee obstruct visibility or access



Minimally Acceptable Tree Maintenance: Moderate density of tree limbs partially obstruct visibility and access



Unacceptable Tree Maintenance: Significant density of tree limbs completely obstruct visibility and access

Summary of LMA Maintenance Ratings for 2007 through 2009

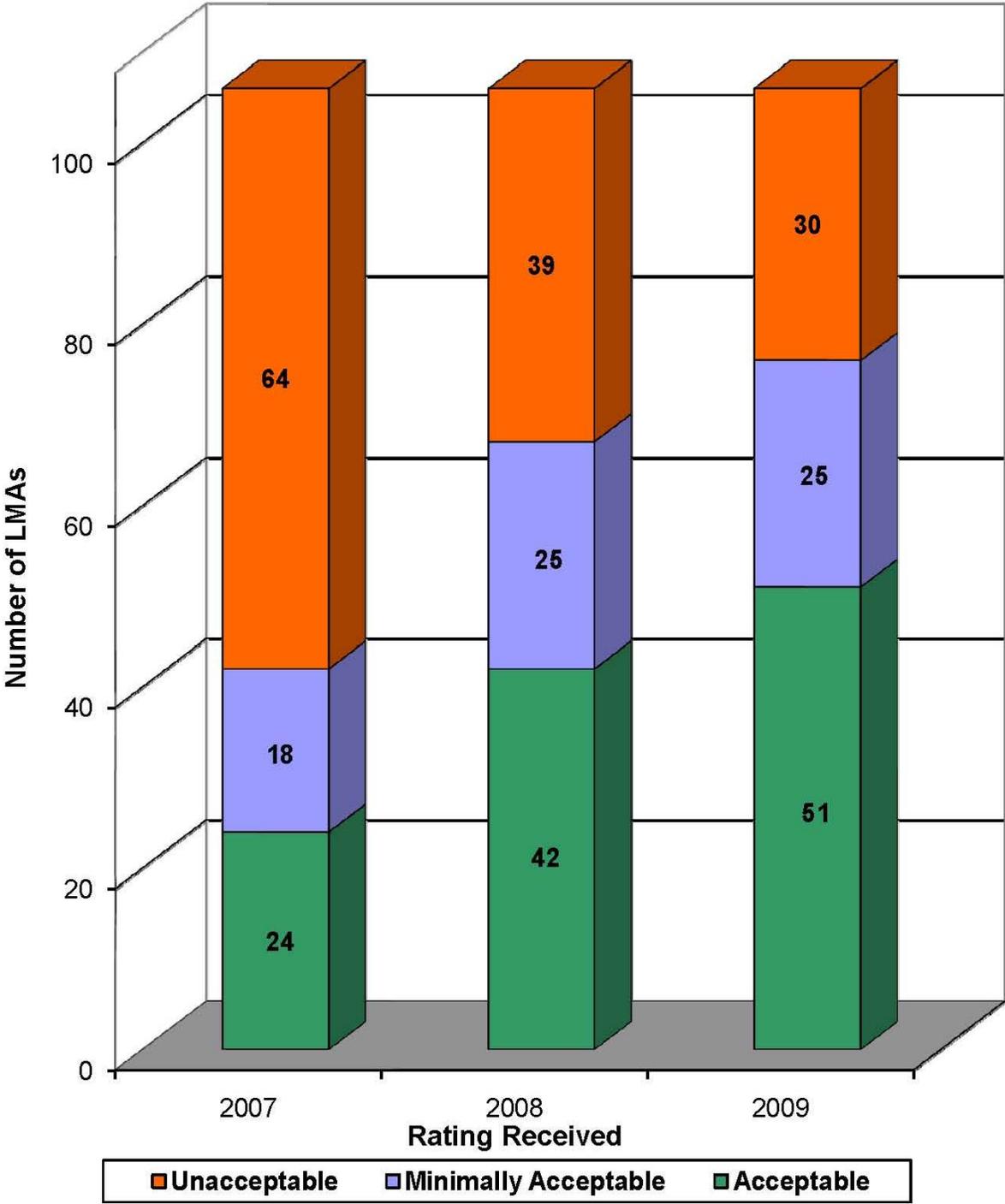


Figure 2-1

LMA Maintenance Rating Changes From Fall 2008 to Fall 2007 and Fall 2009 to Fall 2008

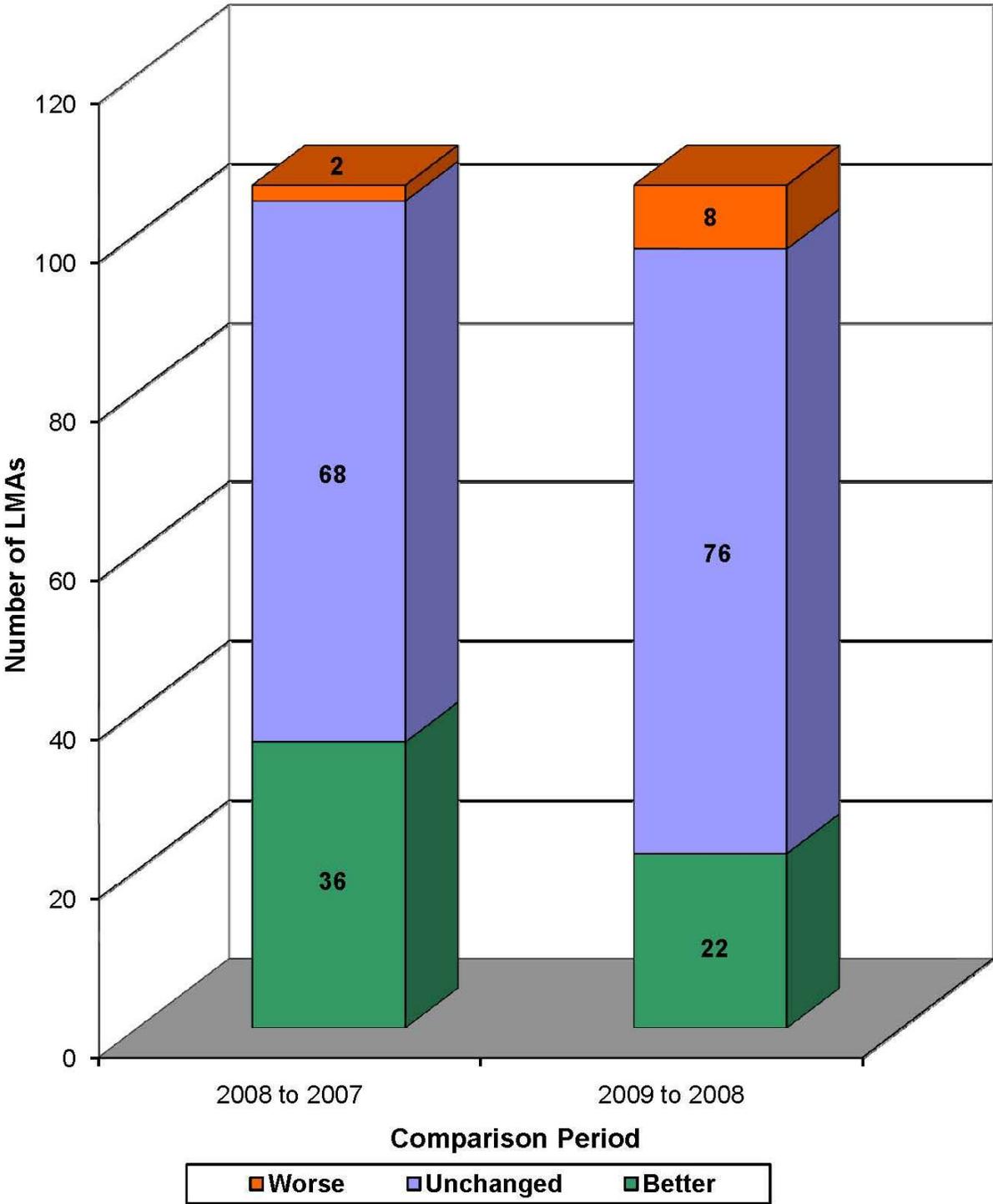


Figure 2-2

Table 2-2: Overall Maintenance Rating by LMA for 2007 through 2009

LMA Short Name	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
LD0001G	Levee District No. 0001G (Glenn County)	U	M	M
LD0001S	Levee District No. 0001S (Sutter County)	M	A	A
LD0002	Levee District No. 0002	A	A	A
LD0003	Levee District No. 0003	A	A	A
LD0009	Levee District No. 0009	A	A	U
MA0001	Maintenance Area 0001	M	M	A
MA0003	Maintenance Area 0003	A	A	A
MA0004	Maintenance Area 0004	A	A	A
MA0005	Maintenance Area 0005	M	M*	M*
MA0007	Maintenance Area 0007	U	A	A
MA0009	Maintenance Area 0009	M	M*	M
MA0012	Maintenance Area 0012	A	A	A
MA0013	Maintenance Area 0013	A	M*	M*
MA0016	Maintenance Area 0016	M	M	A
MA0017	Maintenance Area 0017	U	U	U
NA0001	American River Flood Control District	M	A	A
NA0002	Brannan Andrus Levee Maintenance District	U	U	A
NA0003	Butte County Public Works	A	A	A
NA0004	Marysville Levee Commission	M	A	A
NA0005	City of Sacramento	U	A	A
NA0006	Eastern Honcut Creek	U	U	U
NA0008	Knights Landing Ridge Drainage District	U	M	U
NA0009	Lake County Watershed Protection District	M	A	A
NA0010	Lower San Joaquin Levee District	M	M*	M*
NA0011	Madera County FCWCA	U	U	U
NA0012	Solano County Public Works (Mellin Levee)	U	U	M
NA0013	Merced County Stream Group	U	U	U
NA0014	Murphy Slough at M&T Ranch	U	U	U
NA0015	Plumas County	U	A	A
NA0016	Sacramento River West Side Levee District	U	M*	M*
NA0017	San Joaquin County Flood Control and Water Conservation District	U	M*	M
NA0018	California Department of Fish and Game	A	A	A
NA0019	Tehama County Flood Control and Water Conservation District	U	M	M
NA0020	East-West Interceptor Canal	U	U	U
NA0021	Yolo County Public Works	U	M	U
NA0022	Yolo County Service Area 6	U	M	A
RD0001	Reclamation District No. 0001	M	A	M
RD0003	Reclamation District No. 0003	U	U	M*
RD0010	Reclamation District No. 0010	U	U	A
RD0017	Reclamation District No. 0017	U	U	M*
RD0070	Reclamation District No. 0070	M	A	A
RD0108	Reclamation District No. 0108	A	A	A
RD0150	Reclamation District No. 0150	U	M*	M

LMA Short Name	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
RD0307	Reclamation District No. 0307	U	U	U
RD0341	Reclamation District No. 0341	U	U	A
RD0349	Reclamation District No. 0349	U	U	U
RD0369	Reclamation District No. 0369	U	U	A
RD0404	Reclamation District No. 0404	U	U	U
RD0501	Reclamation District No. 0501	U	U	U
RD0524	Reclamation District No. 0524	U	U	U
RD0536	Reclamation District No. 0536	U	U	U
RD0537	Reclamation District No. 0537	U	A	M
RD0544	Reclamation District No. 0544	U	U	M
RD0551	Reclamation District No. 0551	U	U	A
RD0554	Reclamation District No. 0554	U	U	U
RD0556	Reclamation District No. 0556	U	U	U
RD0563	Reclamation District No. 0563	U	U	U
RD0755	Reclamation District No. 0755	U	U	A
RD0765	Reclamation District No. 0765	U	U	U
RD0784	Reclamation District No. 0784	M	A	A
RD0785	Reclamation District No. 0785	U	A	M
RD0787	Reclamation District No. 0787	A	A	A
RD0817	Reclamation District No. 0817	U	A	A
RD0827	Reclamation District No. 0827	U	M	A
RD0900	Reclamation District No. 0900	U	U	M
RD0999	Reclamation District No. 0999	U	U	U
RD1000	Reclamation District No. 1000	A	A	A
RD1001	Reclamation District No. 1001	U	M	M*
RD1500	Reclamation District No. 1500	M	M*	M*
RD1600	Reclamation District No. 1600	U	M	A
RD1601	Reclamation District No. 1601	A	A	A
RD1602	Reclamation District No. 1602	U	U	U
RD1660	Reclamation District No. 1660	A	A	A
RD2031	Reclamation District No. 2031	U	M*	M*
RD2035	Reclamation District No. 2035	U	A	A
RD2058	Reclamation District No. 2058	U	U	U
RD2060	Reclamation District No. 2060	U	M	A
RD2062	Reclamation District No. 2062	U	M*	U
RD2063	Reclamation District No. 2063	U	U	U
RD2064	Reclamation District No. 2064	U	M	A
RD2068	Reclamation District No. 2068	A	A	A
RD2075	Reclamation District No. 2075	U	U	M*
RD2085	Reclamation District No. 2085	U	U	M
RD2089	Reclamation District No. 2089	U	U	U
RD2091	Reclamation District No. 2091	A	A	A
RD2092	Reclamation District No. 2092	A	A	A
RD2094	Reclamation District No. 2094	U	A	A
RD2095	Reclamation District No. 2095	U	U	M
RD2096	Reclamation District No. 2096	A	A	U
RD2098	Reclamation District No. 2098	M	A	A

LMA Short Name	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
RD2101	Reclamation District No. 2101	U	U	U
RD2103	Reclamation District No. 2103	A	M*	A
RD2104	Reclamation District No. 2104	U	U	U
RD2107	Reclamation District No. 2107	M	A	A
ST0001	Cache Creek	M	M*	M*
ST0002	East Levee Sutter Bypass	M	A	A
ST0003	East Levee Sacramento River	A	A	A
ST0004	East Levee Yolo Bypass	U	A	A
ST0005	Hamilton Bend	U	U	U
ST0006	Nelson Bend	U	U	U
ST0007	Putah Creek	M	A	A
ST0008	Sacramento Bypass	A	A	A
ST0009	Tisdale Bypass	A	A	A
ST0010	Wadsworth Canal	A	A	A
ST0011	West Levee Yolo Bypass	U	M*	M*
ST0012	Willow Slough Bypass	A	A	A

* Overall unit threshold percentage is less than 10.00%, however, U rated miles are present, so the overall unit rating is M instead of A.

3 2009 CHANNEL MAINTENANCE INSPECTION RESULTS

The annual channel maintenance inspections rely upon a qualitative rating system that has been developed based on the USACE O&M manuals. As the annual inspections are qualitative in nature, the existing channel capacities are not evaluated in this report. A single overall rating is assigned to each channel by DWR. The rating designations (A, M, and U) described in Section 2 are also used for channel ratings.

A new method of determining overall ratings was used in 2009 and is described in Appendix B. Table 3-1 and Figure 3-1 show the numbers of each rating for the years 2007, 2008, and 2009.

Table 3-1: Summary of Channel Maintenance Ratings for 2007 through 2009

	2007	2008	2009
A=Acceptable	10	24	19
M=Minimally Acceptable	14	1	7
U=Unacceptable	1	0	0

While the number of channels rated as Unacceptable was still zero in 2009, the number of Minimally Acceptable increased by six. This apparent decrease in the quality of maintenance practices is primarily due to continued enhancements to the inspection and rating processes and not due to a decrease in the maintenance efforts by the LMAs. The maintenance of the channels in 2009 was similar to what was seen in 2008 and was better in some cases. Figure 3-1 shows the progression of maintenance ratings from 2007 thru 2009.

One additional channel was included in the 2009 inspections: Ledgewood Creek located in Fairfield. This addition is a result of DWR's continued efforts to look at historical data, organize it, and include it in new databases.

Table 3-2 shows individual channel ratings for each LMA.

To see locations of the channels inspected, see Plates A-1 through A-1D in Appendix A.

A summary of the ratings for each channel, grouped by LMA and including the rated categories for each, can be found in Appendix E. More detailed reports including photos for each channel can be found at <http://cdec.water.ca.gov/fsir.html>.

Channel Overall Ratings Comparison 2007 to 2009

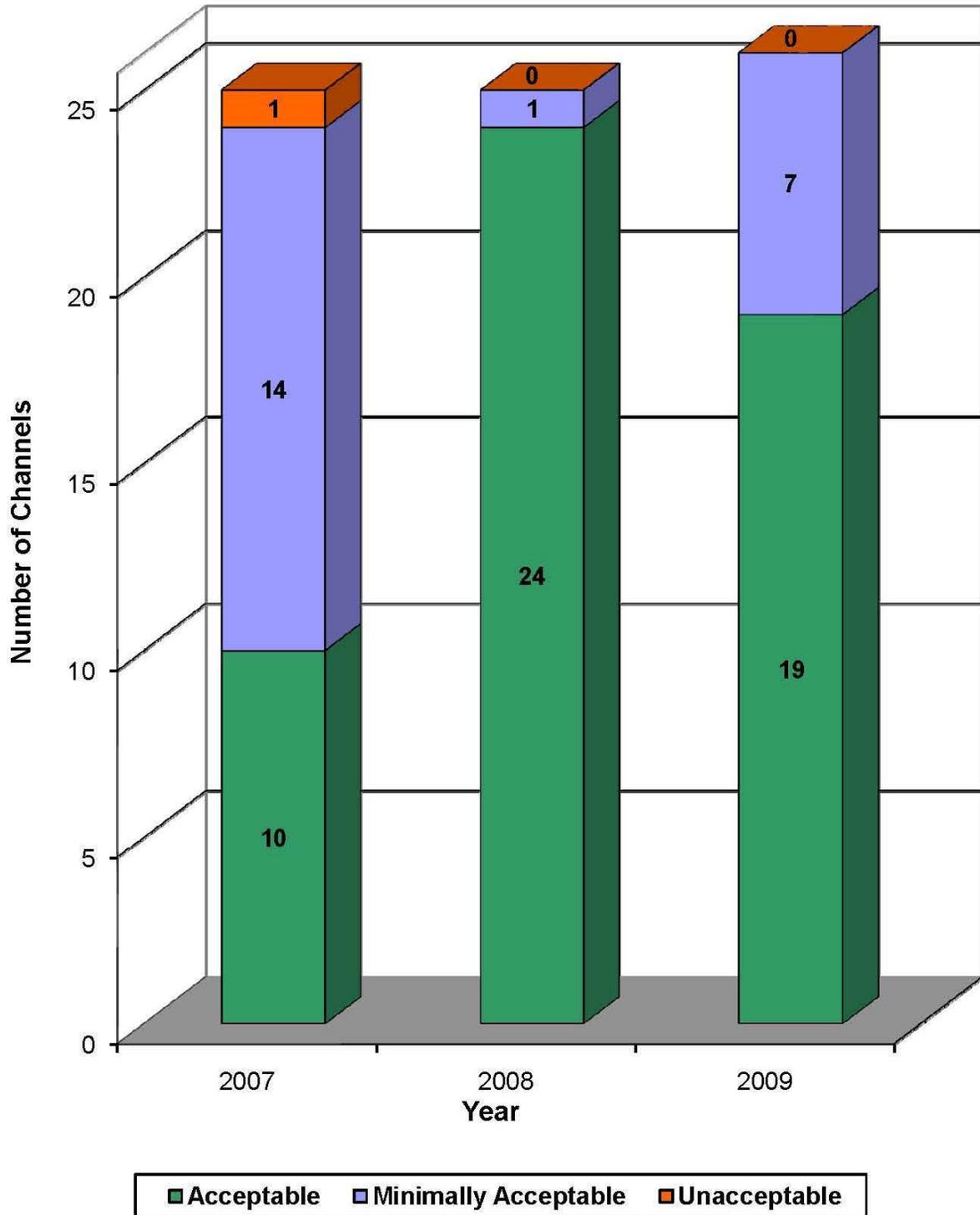


Figure 3-1

Table 3-2: Overall Channel Maintenance Ratings for 2007 through 2009

Channel	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
Sacramento River Basin				
Ash Creek	Adin Community Services District	A	A	A
Dry Creek	Adin Community Services District	A	A	A
McClure Creek	Tehama County	M	A	A
Salt Creek	Tehama County	U	A	M
Big Chico Creek	Sutter Maintenance Yard	M	A	M
Lindo Channel and Sandy Gulch	Sutter Maintenance Yard	M	A	A
Little Chico Creek	Sutter Maintenance Yard	M	A	A
San Joaquin River Basin				
Bear Creek	Merced Irrigation District	M	M	M*
Black Rascal Creek	Merced Irrigation District	M	A	M*
Burns Creek	Merced Irrigation District	A	A	A
Mariposa Creek	Merced Irrigation District	M	A	A
Miles Creek	Merced Irrigation District	M	A	A
Owens Creek	Merced Irrigation District	M	A	A
Ash Slough	Madera County	M	A	M
Berenda Slough	Madera County	M	A	M
Chowchilla River	Madera County	M	A	M
Fresno River	Madera County	M	A	A
North Littlejohn Creek	San Joaquin County Flood Control and Water Conservation District	M	A	A
Duck Creek Diversion	San Joaquin County Flood Control and Water Conservation District	A	A	A
South Littlejohn Creek	San Joaquin County Flood Control and Water Conservation District	A	A	A
South Littlejohn Creek, North Branch	San Joaquin County Flood Control and Water Conservation District	A	A	A
Miscellaneous Basins				
Truckee River	Placer County	A	A	A
Ledgewood Creek	Fairfield-Suisun Sewer District	N/A	N/A	A
McCoy Creek	Fairfield-Suisun Sewer District	A	A	A
Laurel Creek	Fairfield-Suisun Sewer District	A	A	A
Union Avenue Diversion	Fairfield-Suisun Sewer District	A	A	A

* Overall channel rating average is less than 0.2, however, U rated issues are present, so the overall rating is M instead of A.

4 2009 STRUCTURE MAINTENANCE INSPECTION RESULTS

The types of project structures included in the inspections include fixed crest diversion weirs, controllable diversion structures, outfall structures, drop structures, and interior drainage pumping plants. The rating designations (A, M, and U) described in Section 2 are also used for structure ratings.

Similar to the Channel inspections, a new method of determining overall ratings was used in 2009 and is also described in Appendix B. Table 4-1 show the numbers of each rating for the years 2007, 2008, and 2009 for all structures. Figure 4-1 and Table 4-2 show ratings for each structure. Figure 4-2 and Table 4-3 show ratings for each pumping plants. The LMAs have generally improved structure maintenance since 2007.

Table 4-1: Total of Structure Maintenance Ratings for 2007 through 2009

	2007	2008	2009
Structures Ratings			
A=Acceptable	32	37	36
M=Minimally Acceptable	9	5	7
U=Unacceptable	1	0	0
Pumping Plant Ratings			
A=Acceptable	12	12	7
M=Minimally Acceptable	1	1	6
U=Unacceptable	0	0	0

Most of the structures were found to be in a similar state of maintenance as in 2008 and the number of Acceptable and Minimally Acceptable ratings is similar to last year. Several pump plants were found to have some issues that caused them to receive worse ratings than previous years. The specific issues can be found in the detailed reports but generally include a lack of annual maintenance or components like backup power missing from the station. These issues are in the process of being addressed and are not expected to prevent the system from performing adequately during a high water event.

Tables 4-2 and 4-3 show individual structure ratings for each LMA.

To see locations of the structures inspected, see Plates A-2A through A-2C in Appendix A.

One additional structure was inspected in 2009, El Camino Bridge. This is a recently constructed bridge with a part of the deck below the top of the levee. It acts as a part of the system and per discussions with the USACE during coordination meetings needs to be inspected annually.

A summary of the ratings for each structure, grouped by LMA and including the rated categories for each, can be found in Appendix F. A similar report for pumping plants can be found in Appendix G. More detailed reports including photos for each structure can be found at <http://cdec.water.ca.gov/fsir.html>.

Structure Overall Ratings Comparison 2007 to 2009

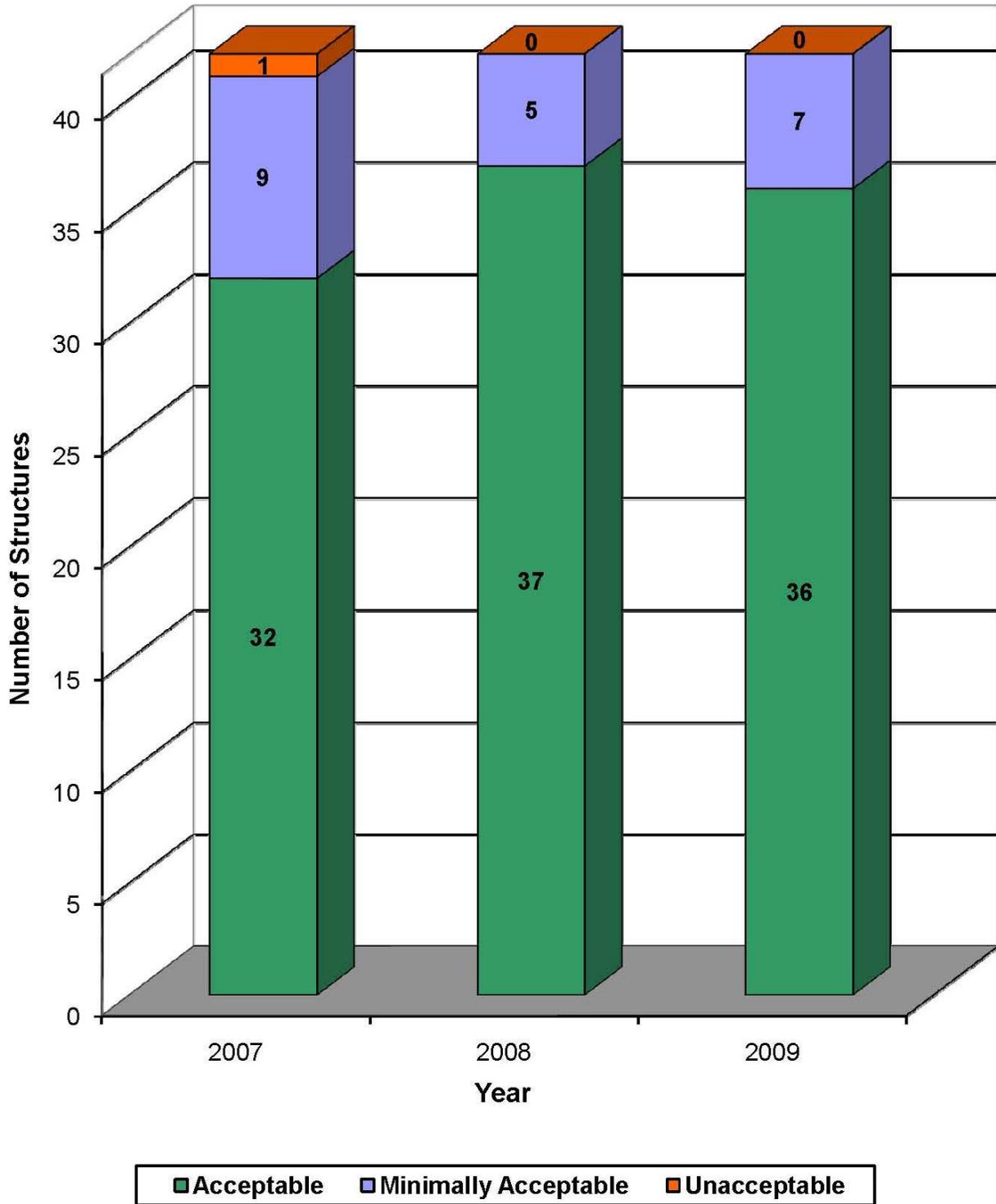


Figure 4-1

Pump Plant Overall Ratings Comparison 2007 to 2009

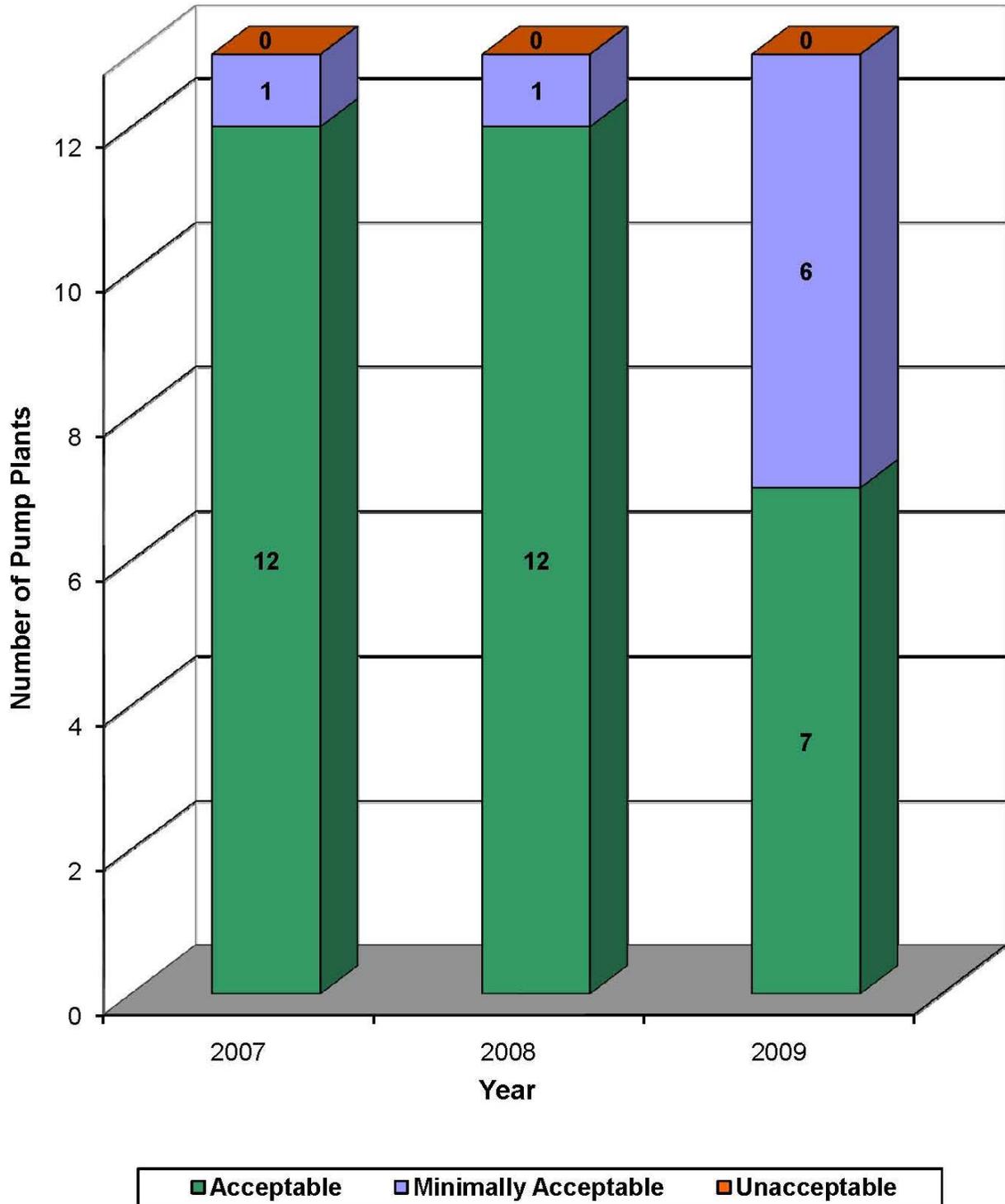


Figure 4-2

Table 4-2: Overall Structures Ratings for 2007 through 2009

Structure	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
Sacramento River Basin				
Big Chico Creek Control Structure	Butte County Public Works	A	A	A
Lindo Channel Control Structure	Sutter Maintenance Yard	M	A	A
Lindo Channel Diversion Weir	Sutter Maintenance Yard	M	A	A
El Camino Bridge	City of Sacramento	N/A	N/A	A
North Fork Feather River Diversion Channel Drop Structures (1 thru 7)	Plumas County	A	A	A
North Fork Feather River Diversion Structure	Plumas County	A	A	A
Elk Slough Inlet Structure	Reclamation District 999	A	A	A
Cache Creek Settling Basin Weir & Drainage Structure	Sacramento Maintenance Yard	A	A	A
Fremont Weir	Sacramento Maintenance Yard	A	A	A
Knights Landing Outfall Structure	Sacramento Maintenance Yard	A	A	A
Sacramento Weir	Sacramento Maintenance Yard	A	A	A
Butte Slough Drainage Structure	Sutter Maintenance Yard	M	M	A
Butte Slough Outfall Structure	Sutter Maintenance Yard	A	A	A
Colusa Weir	Sutter Maintenance Yard	A	A	A
Little Chico Creek Control & Weir Structure	Sutter Maintenance Yard	A	A	A
Moulton Weir	Sutter Maintenance Yard	A	A	A
Nelson Bend (Rock Quarry Weir)	Sutter Maintenance Yard	A	A	A
Sutter Bypass (East Borrow Pit) Weir #2	Sutter Maintenance Yard	A	A	A
Tisdale Weir	Sutter Maintenance Yard	A	A	A
Wadsworth Canal Weir # 4	Sutter Maintenance Yard	A	A	A
San Joaquin River Basin				
Ash Slough Drop Structure #1	Lower San Joaquin Levee District	A	A	A
Ash Slough Drop Structure #2	Lower San Joaquin Levee District	A	A	A
Ash Slough Drop Structure #3	Lower San Joaquin Levee District	M	A	A
Ash Slough Drop Structure #4	Lower San Joaquin Levee District	A	A	M
Bear Creek Diversion Structure	Lower San Joaquin Levee District	A	A	A
Eastside Bypass Control Structure	Lower San Joaquin Levee District	A	A	A

Structure	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
Eastside Bypass Drop Structure #1	Lower San Joaquin Levee District	A	A	A
Eastside Bypass Drop Structure #2	Lower San Joaquin Levee District	A	A	A
Fresno River Drainage Structure	Lower San Joaquin Levee District	M	A	A
Mariposa Bypass Control Structure	Lower San Joaquin Levee District	A	A	A
Mariposa Bypass Drop Structure	Lower San Joaquin Levee District	A	A	A
Owens Creek Control Structure	Lower San Joaquin Levee District	M	A	M
Owens Creek Overflow Structure	Lower San Joaquin Levee District	A	A	A
San Joaquin River & Chowchilla Canal Bypass Control Structure	Lower San Joaquin Levee District	A	A	A
San Joaquin River Structure & Sand Slough Structure	Lower San Joaquin Levee District	A	A	M
Ash & Berenda Slough Control Structure	Madera County Flood Control and Water Conservation Agency	A	A	A
Fresno River Diversion Weir	Madera County Flood Control and Water Conservation Agency	A	M	A
Black Rascal Creek Drop Structure	Merced Irrigation District	A	A	M
Owens Creek Siphon Structure	Merced Irrigation District	M	M	M
Paradise Dam	Sacramento Maintenance Yard	M	M	M
Duck Creek Diversion Weir & Control Structure	San Joaquin County Flood Control and Water Conservation District	A	A	A
Miscellaneous Basins				
Clover Creek Diversion Structure	Lake County Watershed Protection District	U	M	M
Highland Canal Diversion Weir & Drainage Structure	Lake County Watershed Protection District	M	A	A

* Overall structure rating average is less than 0.2, however, U rated issues are present, so the overall rating is M instead of A.

Table 4-3: Overall Pumping Plants Ratings for 2007 through 2009

Pumping Plant	LMA Name	2007 Overall Rating	2008 Overall Rating	2009 Overall Rating
Magpie Creek	City of Sacramento	A	A	A
Reclamation District 2063 Pumping Plant (Nelson Drain)	Reclamation District 2063	M	A	M
Wetherbee Lake Pumping Plant & Navigation Gate	Reclamation District 2096	A	A	M
American River Pumping Plant #1	Sacramento County	A	A	A
American River Pumping Plant #2	Sacramento County	A	A	A
Mormon Slough #1	San Joaquin County Flood Control and Water Conservation District	A	A	A
Mormon Slough #2	San Joaquin County Flood Control and Water Conservation District	A	A	A
Mormon Slough #3	San Joaquin County Flood Control and Water Conservation District	A	A	A
Middle Creek	Sutter Maintenance Yard	A	M	M
Sutter Bypass #1	Sutter Maintenance Yard	A	A	M
Sutter Bypass #2	Sutter Maintenance Yard	A	A	M
Sutter Bypass #3	Sutter Maintenance Yard	A	A	M
Gomes Lake	Turlock Irrigation District	A	A	A

* Overall structure rating average is less than 0.2, however, U rated issues are present, so the overall rating is M instead of A.

5 OTHER BRANCH ACTIVITIES AND ACCOMPLISHMENTS

The Flood Project Integrity & Inspection Branch supports flood operations by inspecting, evaluating and assessing the integrity of the Sacramento and San Joaquin Flood Control Project levee system through a variety of activities. This Branch is involved in collecting and managing flood control system information to assist in flood operations efforts. This information includes data on historical levee distress issues as well as historical flood control system improvements, operation and maintenance (O&M) agreements, O&M standards and practices, and general information related to flood control system facilities.

The Branch inspects the maintenance of flood control facilities and notifies local maintenance agencies of system deficiencies, monitors levee and channel erosion, monitors use of designated floodways, conducts regulatory inspections of Central Valley Flood Protection Board authorized encroachments, conducts flood fight training, has first-response capability during high-water events, and conducts high-water staking.

The following sections provide more detail on key Branch activities and accomplishments.

5.1 Inspection and Reporting for Project Facilities

The branch conducts maintenance inspections for project levees, channels, and structures—the subject of this report. Improvements in 2009 inspections and reporting include:

- Continued inspector training and use of more consistent methodology to reduce subjectivity
- More timely reporting and communication of deficiencies to LMAs
- Continued refinements to inspection database program allowing efficient documentation of system conditions and compatibility with USACE National Levee Database reporting requirements

DWR expects to implement additional changes to the inspection program as existing USACE policies are clarified over time, new policies are developed, and other levee management issues arise.

5.2 AB 156 Inspection Reporting

California Assembly Bill 156 (Laird, 2007) and California Water Code Section 9141 require local agencies to submit information for the levees they maintain by September 30 each year. In turn, DWR is required to summarize the information in an annual report to the Board by December 31 each year. The Branch prepared the first Local Agency Annual Report in 2008. The 2009 report has been prepared and an electronic copy can be obtained from the websites of the Department of Water Resources at <http://cdec.water.ca.gov/lma.html>.

5.3 Levee Waterside Erosion Surveys

The USACE, with DWR sponsorship, has contracted for waterside erosion surveys of the Sacramento River system since 1998. The Branch began conducting waterside erosion surveys of the San Joaquin River portion of the State-federal flood protection system

project levees in September of 2006. The primary purpose of these surveys is to: (a) monitor and document the condition of previously identified erosion sites; (b) inventory any new erosion sites; and (c) identify erosion sites that appear to be an imminent threat to the structural integrity of the State-federal flood protection system.

The 2009 San Joaquin River system waterside erosion survey identified 52 sites in need of repair. Eighteen new erosion sites were documented during the 2009 survey, nine sites have been or will be repaired, and nine sites from 2008 were combined with nearby sites, or were otherwise removed. The 2009 erosion data for the Sacramento River system erosion survey was not available for this report; 2008 data was used.

DWR and other State, federal, and local entities are working to develop an erosion repair strategy that addresses environmental concerns from erosion maintenance and assigns responsibility for repair of different scales of erosion in the flood protection system.

The annual Erosion Survey of the San Joaquin River Flood Control System report contains further information regarding the erosion observed in the San Joaquin River basin and is available at <http://cdec.water.ca.gov/fsir.html>.

5.4 Utility Crossing (Pipe) Surveys

Continued enhancement of the Branch's inspection effort includes a utility crossing survey program tasked to inspect and inventory utility crossings penetrating State-federal flood project levees. Utility crossings primarily take the form of drainage discharge or intake pipelines and may or may not be permitted. A collapsed or corroded pipeline may potentially compromise the structural integrity of a levee; therefore, an assessment of the condition and precise locations of these crossings is valuable information.

The utility crossing survey program will:

- Identify in detail all penetrating structures (pipes, culverts, and/or tunnels) through levees using historical information such as USACE O&M Manuals and DWR levee logs.
- Update the status of all penetrating structures by identifying: (a) abandoned crossings; (b) system upgrades, (c) permitted infrastructure; (d) removed infrastructure; (e) capped and left in place infrastructure; and (f) failing infrastructure.

The updated information collected through this program will be used by inspectors to clarify maintenance issues with the maintaining agencies, and by engineers for internal vulnerability assessments.

5.5 Other Key Activities

Additional Branch activities supporting the assessment of the integrity of the Sacramento and San Joaquin Flood Control Project levee system include:

- CVFPB Permit Inspection: The Branch's team of flood project inspectors visually inspects the construction and installation of permitted encroachments for adherence to Board conditions.
- DWR and Corps Inspection Program Working Group: FPIIB and Sacramento District USACE meet monthly to coordinate ongoing DWR and Corps inspection

program activities. The primary focus is to establish a consistent understanding of inspection criteria and to establish consistent guidelines for developing system ratings.

- Levee Log Update: The Branch is working with the USACE and the California Data Exchange Center (CDEC) to further refine and populate a geo-referenced levee database to include all features within the easements of the State-federal flood control system.
- Database Management: Compilation of known maintenance deficiencies and historical information into a geo-referenced database provides quick and detailed background information regarding distressed locations for initial analysis during high water events and in assessing system reliability. This database continues to be enhanced through CDEC programming.
- Flood Fight Training: Inspectors assist the Flood Fight Specialist teaching flood fight methods to over 1,000 people per year throughout the state.
- Emergency Response: Inspectors are sent to areas of concern throughout the state to respond to flood related issues. As first responders, they provide flood fight expertise to local emergency responders, perform high water staking and may organize flood fight efforts. In 2009 FPIIB responded to two events through cooperation with the State-Federal Flood Operations Center:
 - On August 27, 2009, a cargo ship ran aground at Bradford Island in the delta. In doing so, the impact caused a large slip failure made evident by sub-parallel surface cracks in the levee crown. FPIIB engineers were dispatched by the Flood Operation Center to assess the damage, recommend corrective action, and coordinate an emergency response. The levee was quickly repaired without further incident.
 - On October 13, 2009, an intense storm threatened mudslide and debris flows in areas throughout the state that had recently experienced wild fires. FPIIB inspectors were dispatched to Redding, Watsonville and Monterey to provide assistance. While there were no major issues that required a state level response, the event proved to be valuable in building relationships with city and county personnel and was considered a successful exercise.

Appendix A: Maintenance Requirements and Responsibilities

Appendix A includes background information on the State-federal flood protection system in the Central Valley, maintenance requirements, and maintenance responsibilities. This information remains relatively static from year to year. Any significant changes in maintenance requirements and maintenance responsibilities that occur in a given year, if any, are noted in Section 1.1 of the main report.

A-1. State-Federal Flood Protection System

The State-federal flood protection system is located in the Central Valley and is composed of many projects along the Sacramento and San Joaquin rivers and tributaries. The system includes federally authorized projects for which the State participated and provided the federal government assurances of continued cooperation.

Congress authorized the Sacramento River Flood Control Project (SRFCP) in 1917, and subsequent supplemental authorizations (e.g. Sacramento River and Major and Minor Tributaries, American River levees, etc.) have added projects to the SRFCP over the years. The San Joaquin River Flood Control Project consists of a number of separate federally authorized flood protection projects, most of which have been built since the 1940's (for example: Merced County Stream Group, Lower San Joaquin River, etc.).

Some existing levees were also incorporated into the Sacramento and San Joaquin flood protection systems through the passage of federal statutes if the USACE believed the levees met or exceeded design standards. The State of California generally provides lands, easements, and right-of-ways 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).

The two major river flood protection systems have combined totals of approximately 1,574 miles of federal project levees (shown on Plates A-1 through A-1D), 1,200 miles (148,000 acres) of designated floodways, 26 project channels covering several thousand acres (shown on Plates A-1 through A-1D), and 56 other major flood protection works including overflow weirs, flood relief structures, outfall gates, and pumping plants (shown on Plates A-2A through A-2C).

Since the beginning of federal participation, the Sacramento River and San Joaquin River flood systems have been constructed, expanded, improved, and repaired through a series of subsequent federal authorizations. Projects within these systems, for which the Central Valley Flood Protection Board (formerly the Reclamation Board) or DWR has provided the assurances of nonfederal cooperation to the United States, are considered the State-federal flood protection system in the Central Valley.

Integrated Flood Management

It should be noted that this State-federal flood protection system is a part of an integrated flood protection system in the Central Valley. Parts of this larger system are interdependent and rely on other features operating successfully. For example, many reservoirs, private levees and designated floodways, though not part of the State-federal flood protection system, regulate and contain flood flows to the benefit of the State-federal flood protection system.

Improved and sustainable integrated flood management is a stated goal of FloodSAFE California, specifically the Central Valley Flood Planning (CVFP) Program. Legislation passed in 2007 directs the California Department of Water Resources (DWR) to develop three important documents that will guide improvement of integrated flood management:

- **State Plan of Flood Control (SPFC) Descriptive Document** to inventory and describe the flood management facilities, land, programs, conditions, and mode of operations and maintenance for the State-federal flood protection system in the Central Valley.
- **Flood Control System Status Report** to assess the status of the facilities included in the SPFC Descriptive Document, identify deficiencies, and make recommendations.
- **Central Valley Flood Protection Plan (CVFPP)** to describe a sustainable, integrated flood management plan that reflects a system-wide approach for protecting areas of the Central Valley currently receiving protection from flooding by existing facilities of the SPFC.

A-2. Maintenance Requirements

Title 33 of the Code of Federal Regulations, Section 208.10 (33 CFR 208.10) outlines federal regulatory requirements for the maintenance and operation of structures and facilities that comprise the State-federal flood protection system.

33 CFR 208.10 provides general operation and maintenance guidance to obtain the maximum benefits from the following features:

- a) Structures and Facilities
- b) Levees
- c) Floodwalls
- d) Drainage
- e) Closure Structures
- f) Pumping Plants
- g) Channels and Floodways

Additionally, Standard and Supplemental O&M Manuals were prepared by USACE, Sacramento District, for project levees and flood protection works in the Central Valley.

A Standard O&M Manual was published for the Sacramento River Flood Control Project in May 1955, and for the Lower San Joaquin River Levees, Lower San Joaquin River and Tributaries Project in April 1959. The purpose of these Standard O&M Manuals is to present general information for use by local interests who maintain and operate the various geographical units comprising the Projects.

Supplemental O&M Manuals were prepared to supplement the respective USACE Standard O&M Manual. These supplemental manuals serve as a project specific guide to assist each LMA in carrying out its responsibilities for levee maintenance. Section 4 of the Standard O&M Manual and Section 2 of the supplements describe some of the standards to be met by LMAs in the performance of their routine maintenance.

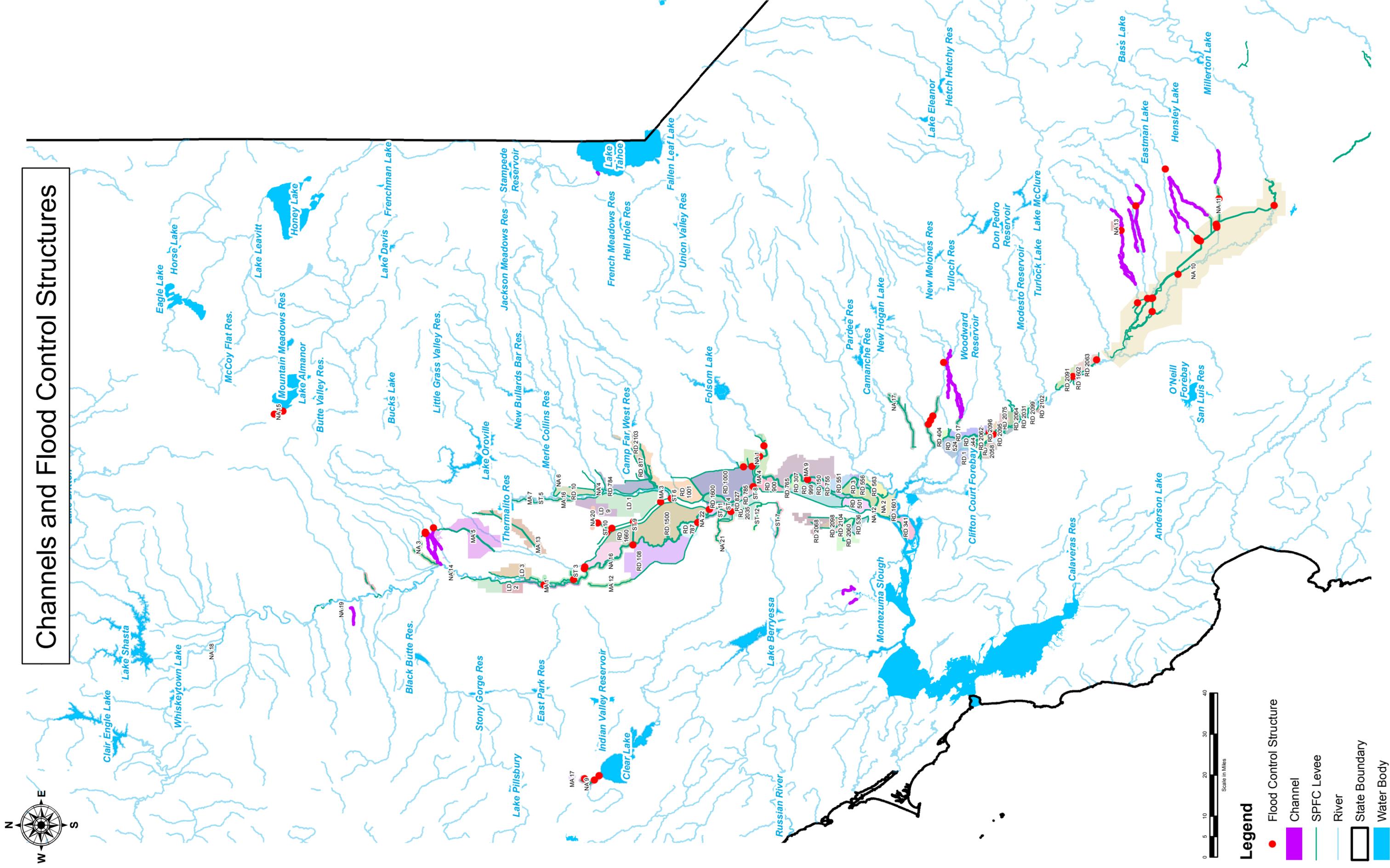
A-3. Maintenance Responsibilities

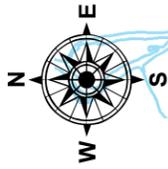
As construction of federally authorized project units was completed, the USACE prepared unit-specific operation manuals and transferred the projects by letter to the Board for review and acceptance. Project levees and flood protection works for which the State of California had provided the assurances of non-federal cooperation were formally accepted by the Board on behalf of the State for operation and maintenance in accordance with federal regulations. In many cases, the State officially transferred operation and maintenance responsibilities to local entities.

Local public entities within the Sacramento and San Joaquin river systems have the responsibility, liability, and duty to maintain and operate the levees and other flood protection works on a day-to-day basis in accordance with assurance agreements, guidelines provided in the USACE Standard O&M Manuals, and each applicable supplement for individual project units. Flood protection features for which operation and maintenance are not performed by local entities are those SRFCP works maintained by DWR in accordance with Water Code §8361; and those facilities within Maintenance Areas (MA) that are maintained by DWR, with local beneficiaries paying costs under Water Code §12878. For the Sacramento River Flood Control Project, the LMA responsibilities were set forth in Water Code §8370 with the exception of enumerated works identified under Water Code §8361 and those for which provision is made by federal law. Flood protection project responsibilities in the San Joaquin River basin are based upon assurance agreements between the Board and each LMA.

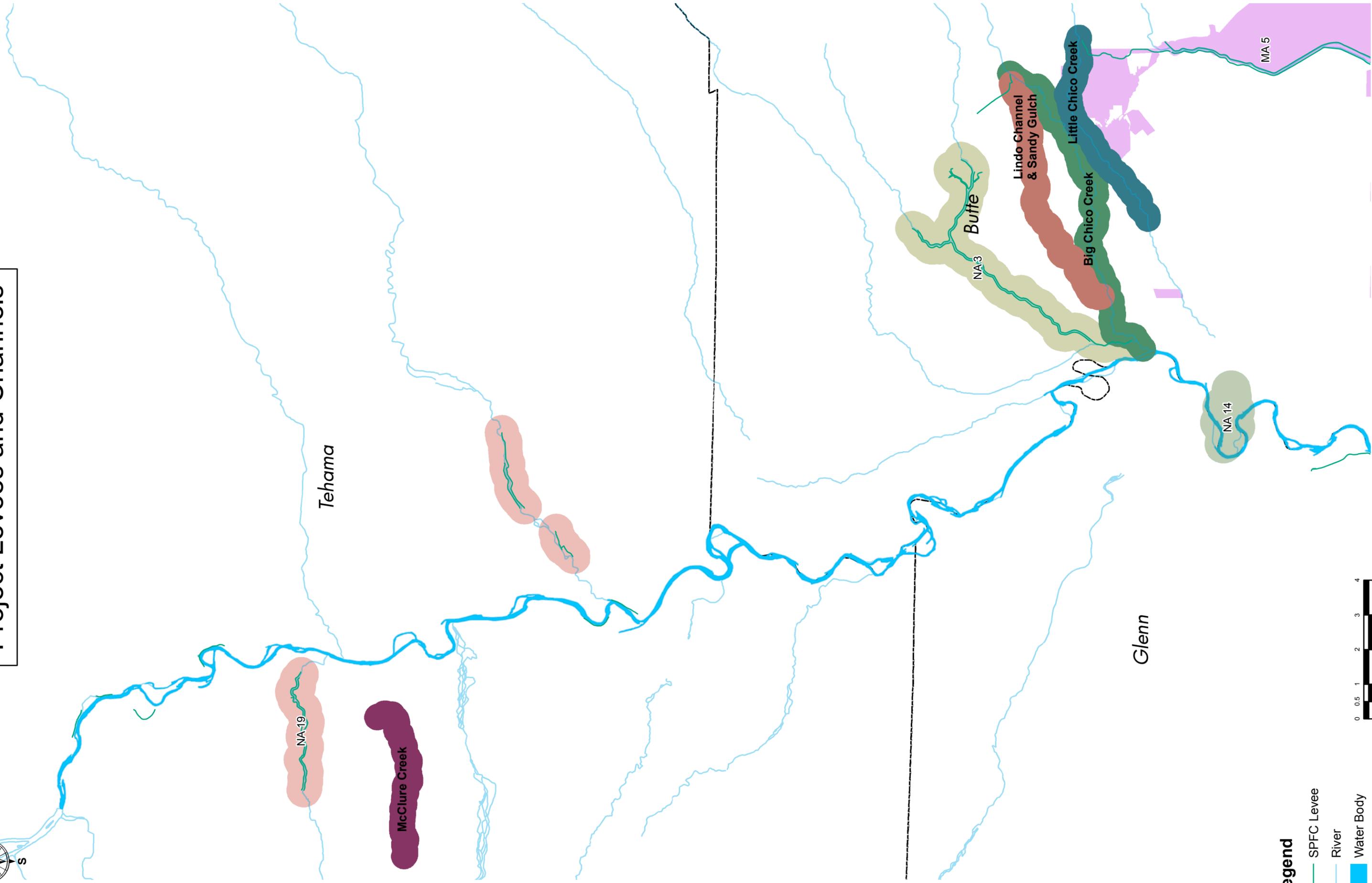
Currently, operation and maintenance responsibilities for the State-federal flood protection system levees in the Central Valley are carried out by 106 individual State and local maintaining agencies.

Channels and Flood Control Structures





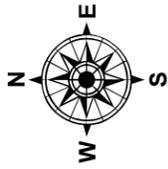
Project Levees and Channels



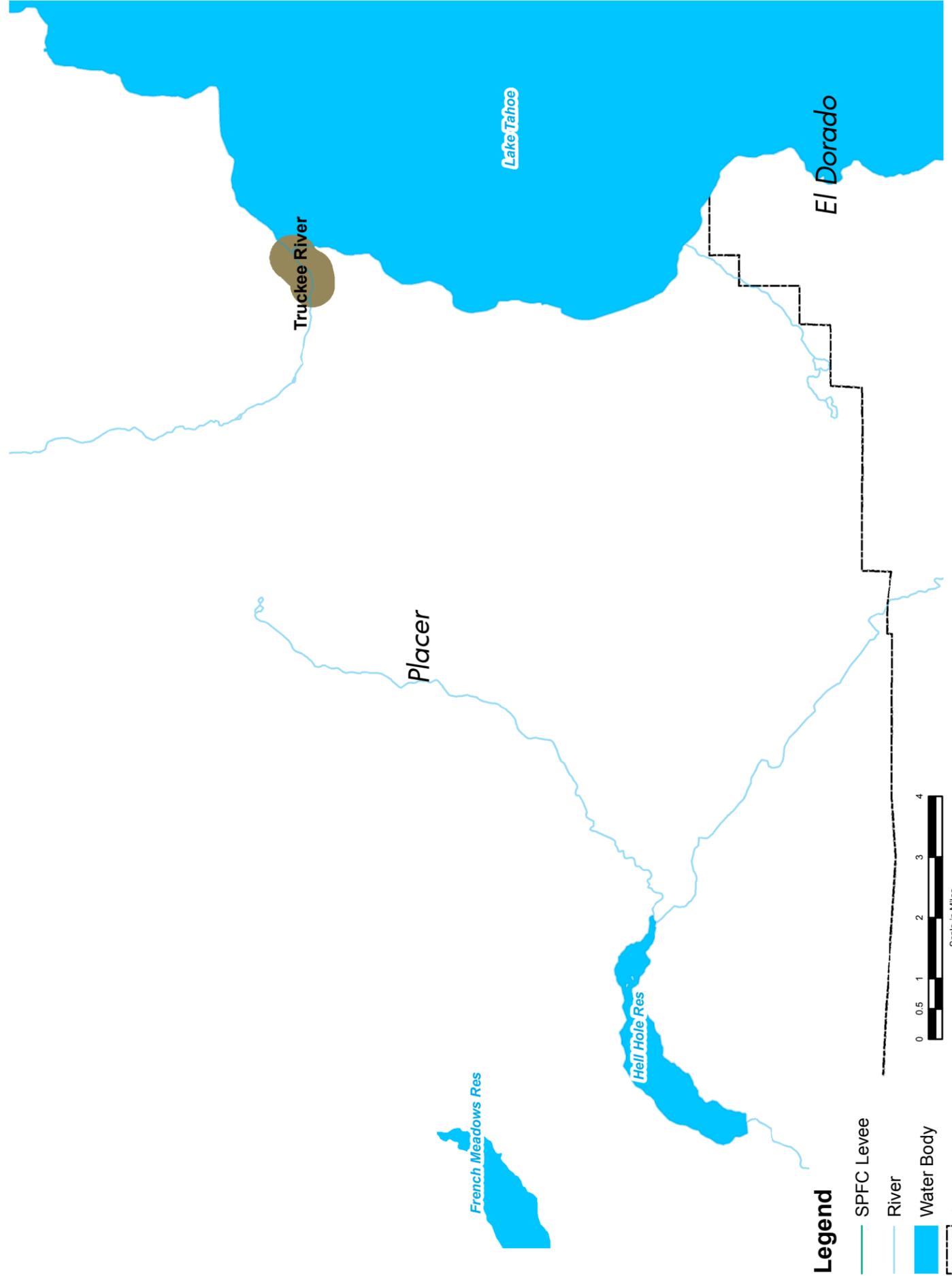
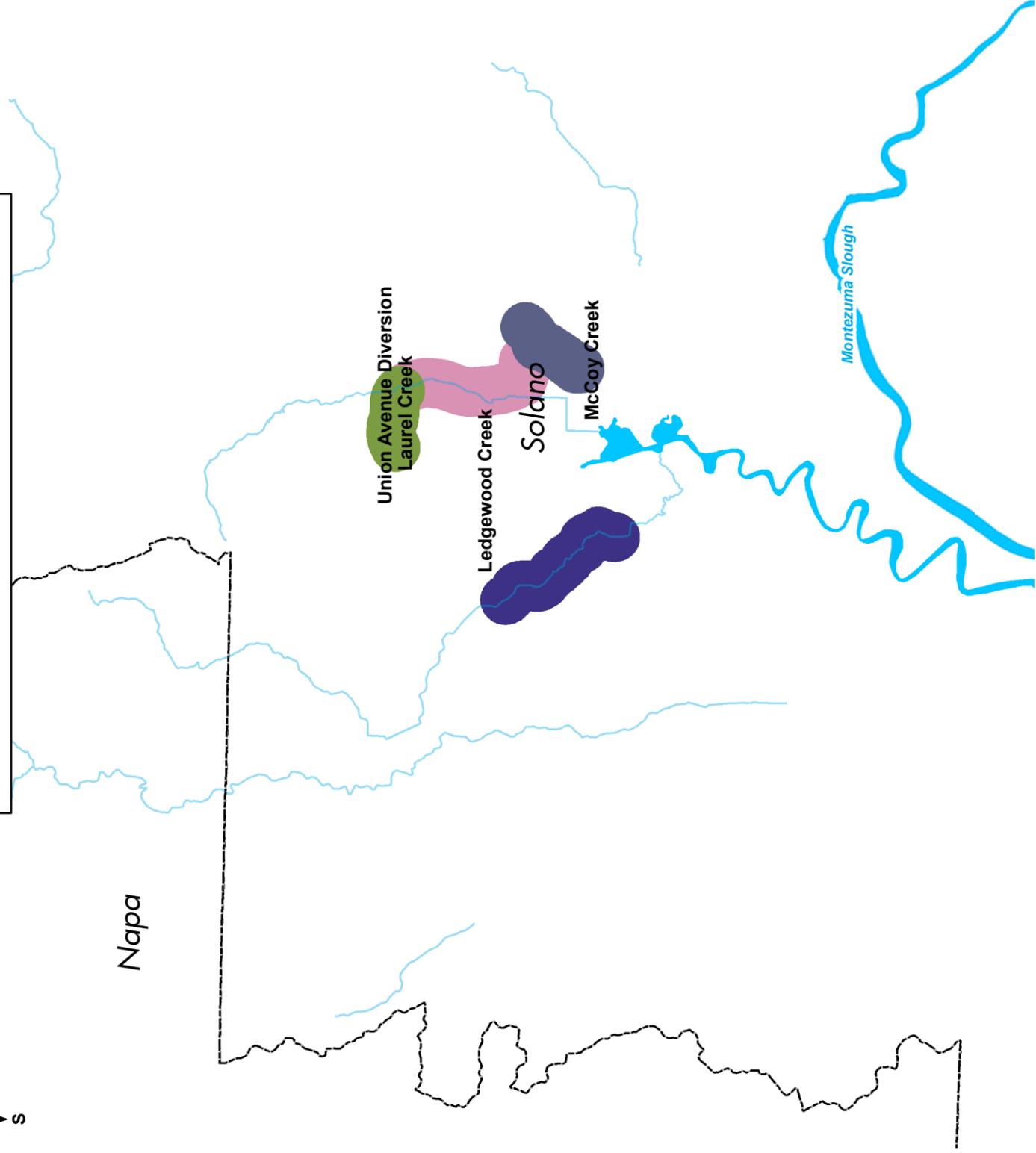
Legend

- SPFC Levee
- River
- Water Body
- County Boundary





Project Levees and Channels



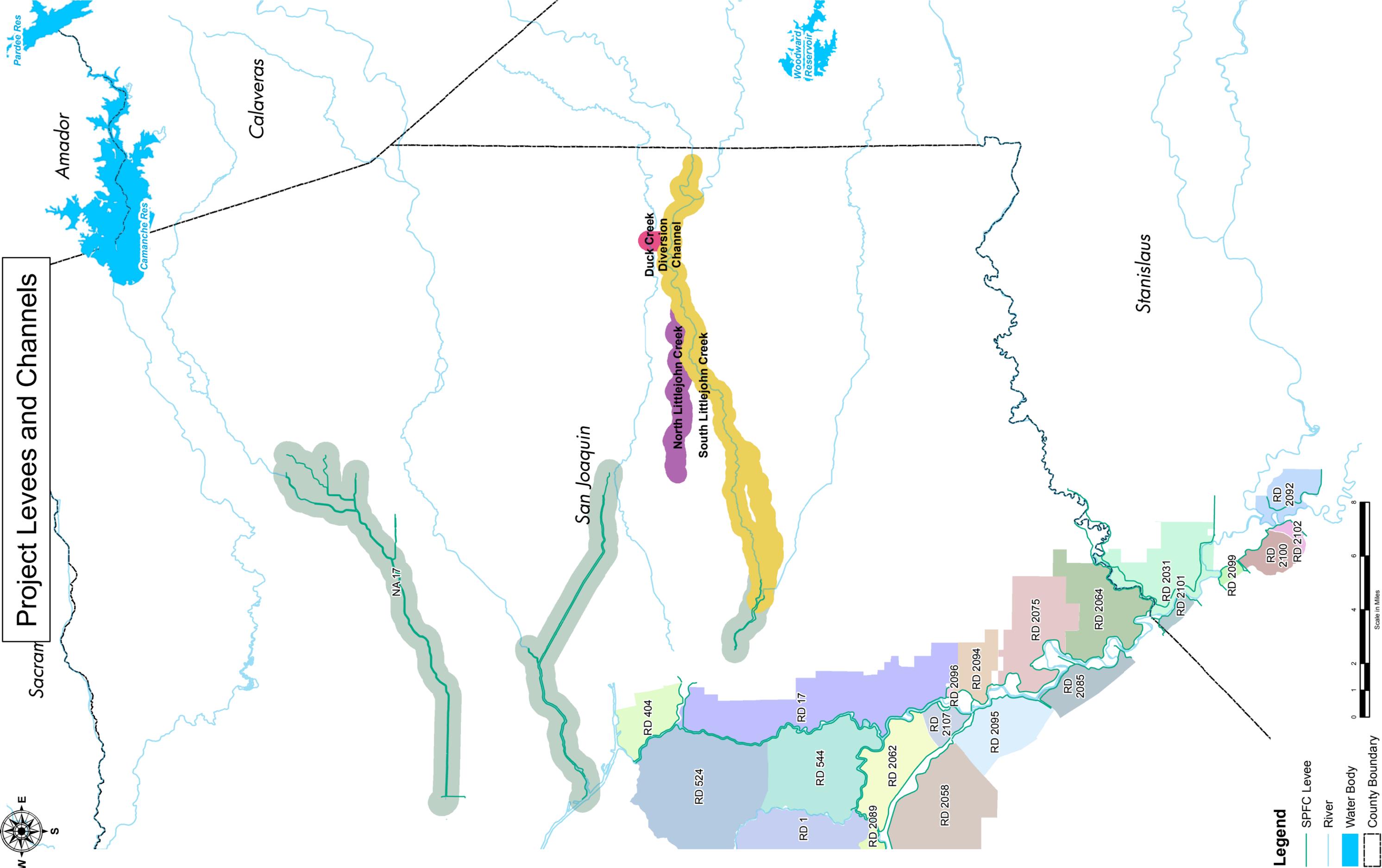
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- SPFC Levee
- River
- Water Body
- County Boundary



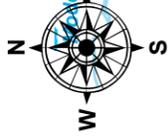


Project Levees and Channels

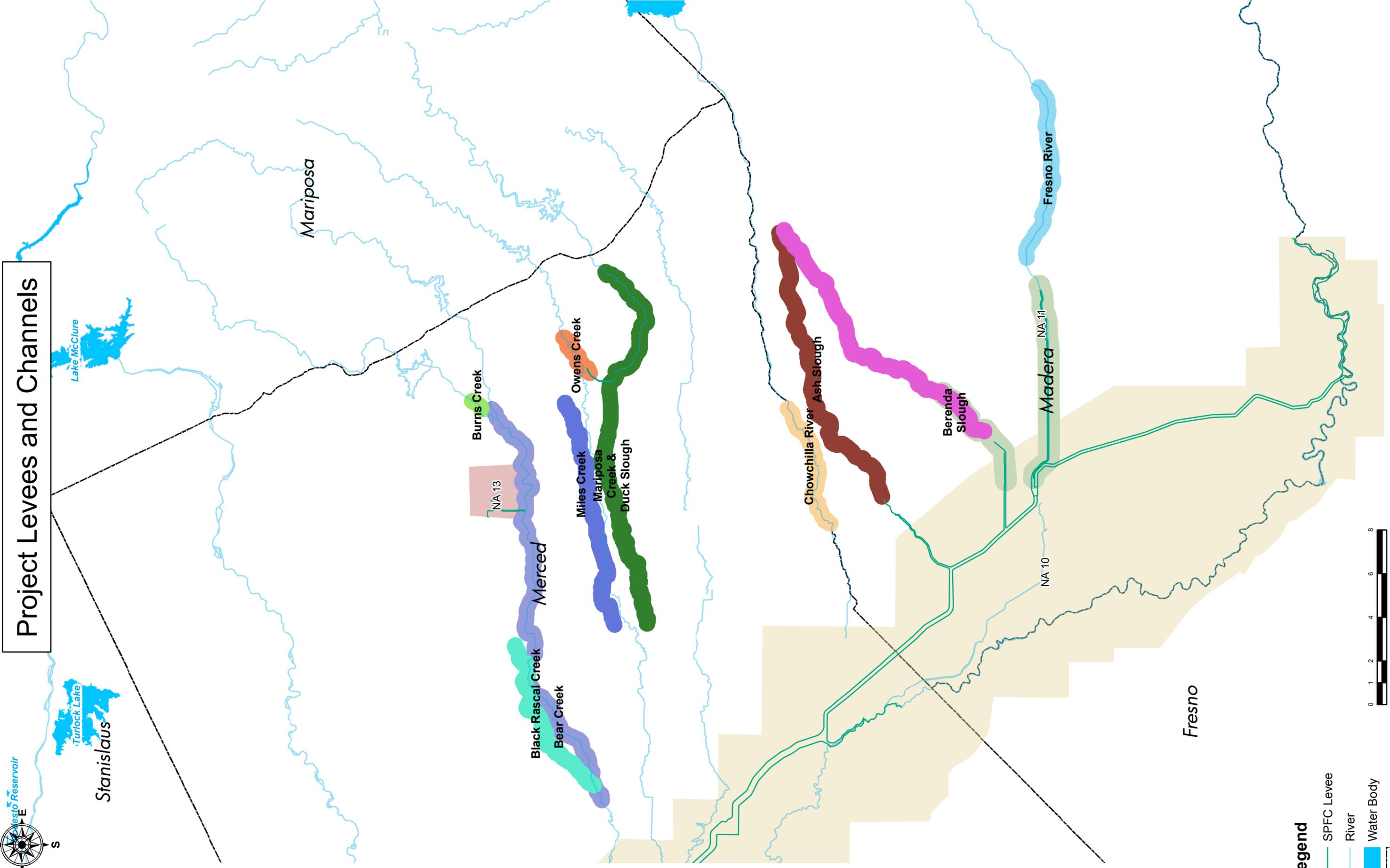


Legend

- SPFC Levee
- River
- Water Body
- County Boundary



Project Levees and Channels



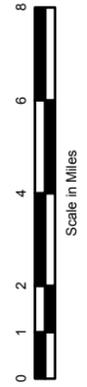
Legend

SPFC Levee

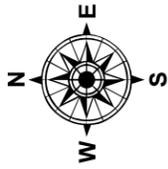
River

Water Body

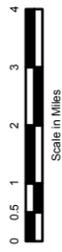
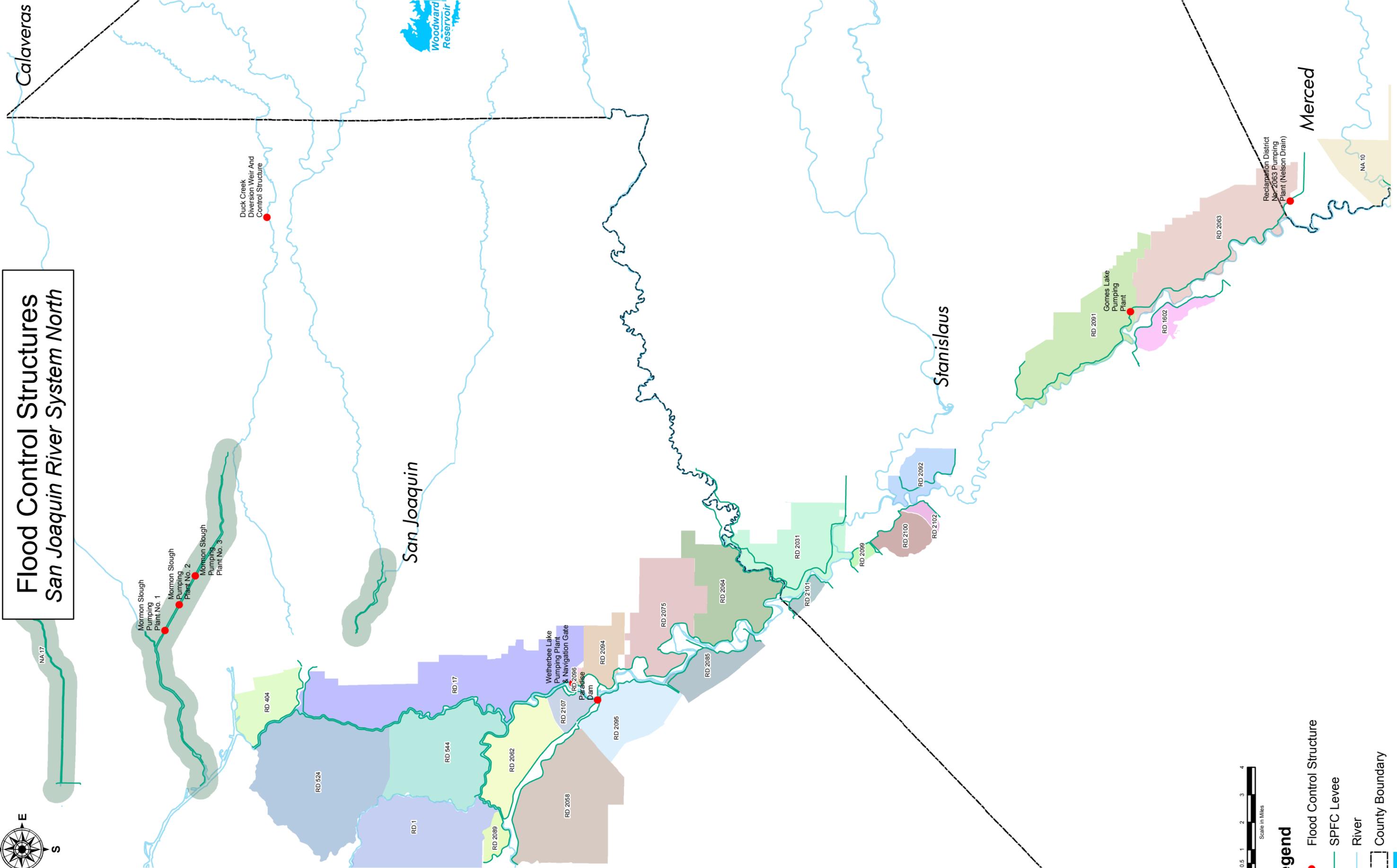
County Boundary



Scale in Miles

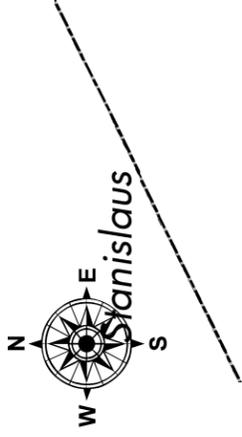


Flood Control Structures San Joaquin River System North

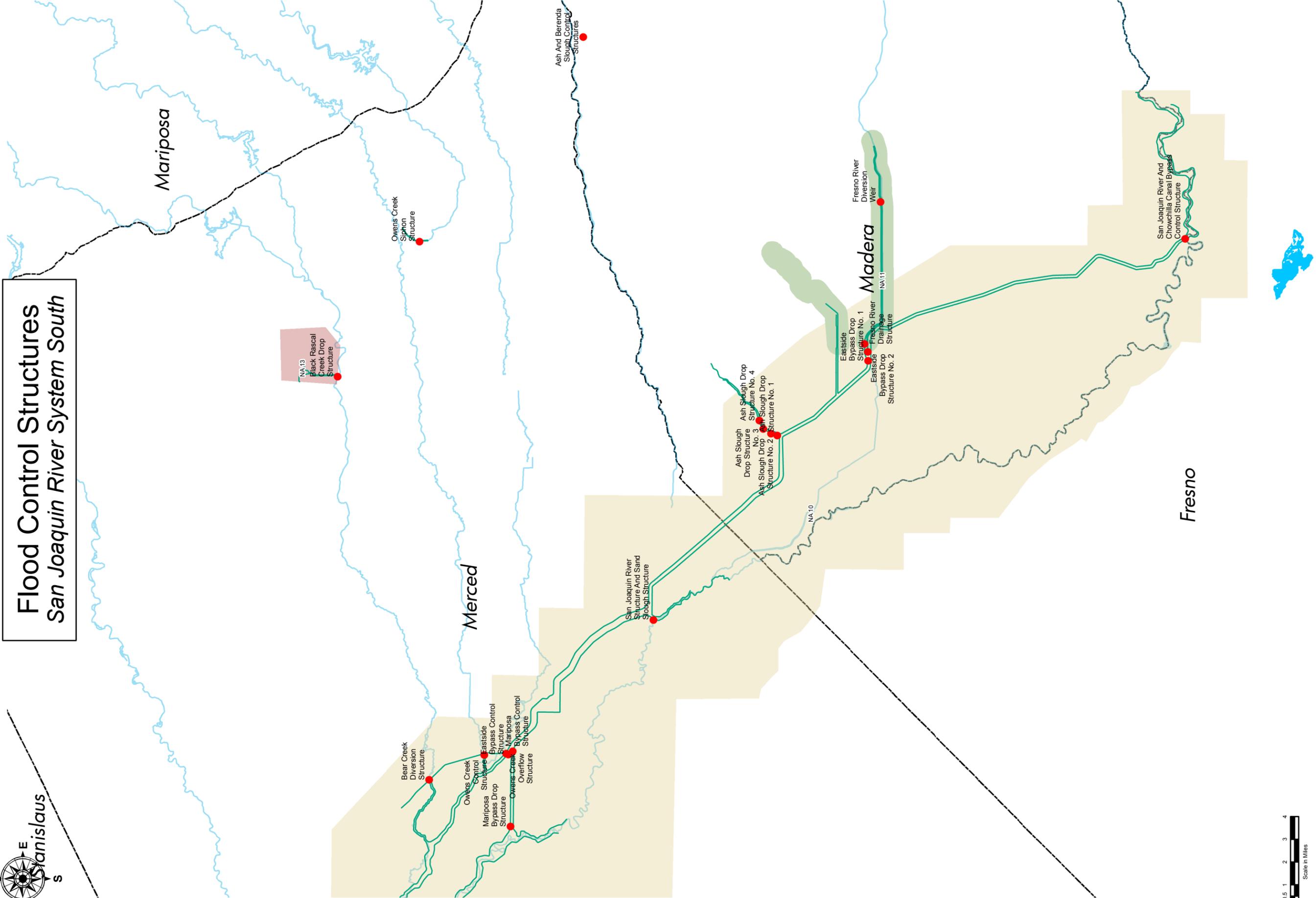


Legend

- Flood Control Structure
- SPFC Levee
- River
- - - County Boundary
- Water Body

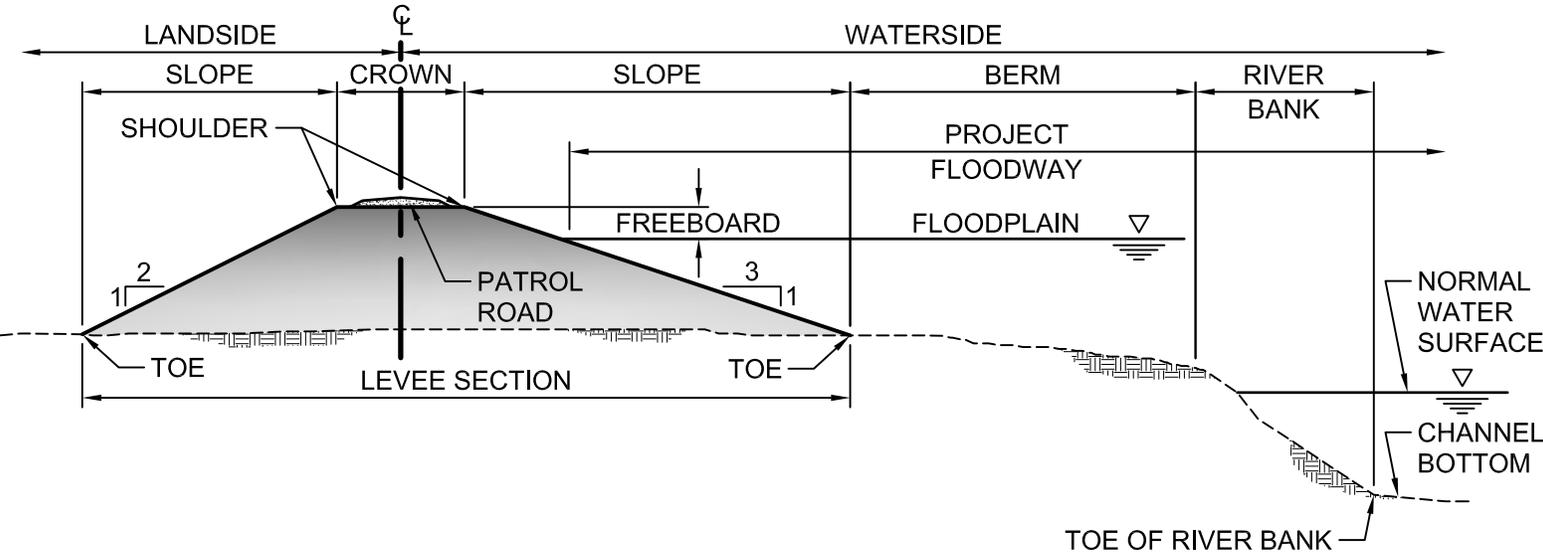


Flood Control Structures San Joaquin River System South



- Legend**
- Flood Control Structure
 - SPFC Levee
 - River
 - - - County Boundary
 - Water Body

PROJECT LEVEE TERMINOLOGY



Appendix B: Inspection Criteria and Rating Methodology

This appendix presents federal and state inspection criteria and rating methodology for levees, channels, and structures.

B-1. Federal Inspection Requirements and Corps of Engineers Inspection Checklist

Title 33 of CFR, Navigation and Navigable Waters, Section 208.10 (33 CFR 208.10) outlines the federal requirements for the periodic inspection of structures and facilities that comprise the State-federal flood protection system. These include inspections:

- Immediately prior to the beginning of the flood season
- Immediately following each major high water period
- At intervals not exceeding 90 days
- At intermediate times as necessary

Title 33 CFR 208.10 can be viewed at:

http://www.access.gpo.gov/nara/cfr/waisidx_06/33cfr208_06.html

DWR implements this as:

- The LMAs and DWR patrol and inspect all project levees during high water events.
- Four quarterly inspections are required per year.

To meet this federal requirement, DWR performs comprehensive levee inspections in the spring and fall. Channel and structure inspections are conducted by DWR in the summer. The findings of these inspections make up the results of this report.

The LMAs are required to perform summer and winter levee inspections. LMAs report the condition of their system in relation to the most recent DWR inspection results. They do so by describing any changes in the condition of the system (since the last DWR inspection) or by reporting that none have occurred. The findings of these inspections are reported to the Chief Engineer of the Board through DWR's FPIIB. Since the 2008 adoption of Assembly Bill 156, LMAs are required to report in greater detail the results of their inspections and O&M activities. The comprehensive annual report that contains the 2009 LMA inspection results can be viewed at: <http://cdec.water.ca.gov/lma.html>.

Criteria by which the flood control projects inspections have historically been reported are outlined in the Standard Operation and Maintenance Manuals. Subsequently, the USACE has developed additional inspection criteria for project and non-project systems participating in the federal PL84-99 rehabilitation and inspection program. The USACE checklist, Flood Damage Reduction Segment/System Inspection Report includes the USACE inspection criteria. For a copy, see

<http://www.iwr.usace.army.mil/nfrmp/docs/USACEInspectionChecklist3-16-09.pdf>

B-2. DWR Modification to USACE Criteria

B-2.1 Levee Inspection Criteria

The USACE Flood Damage Reduction System Inspection Report, forms the basis of the DWR flood project inspection program. However, changes to some portions of the checklist have been made by DWR. The USACE criteria rates an LMA's entire levee as unacceptable if any single inspection category is found to be unacceptable at any point on the levee. Therefore, under USACE criteria, an LMA with a few unacceptable trees is rated the same as an LMA with unacceptable ratings in several different rating categories. Additionally, strict application of the checklist, considering the unique environmental conditions of vegetation and encroachments on California levees, would result in almost universally unacceptable ratings throughout the system without providing any overall benefit to the system.

DWR believes that its modified criteria described below provide for realistic view of the severity of deficiencies and of the significant differences among LMA maintenance performance. DWR considers the length of each deficiency with respect to the total length of levee maintained by an LMA. Since a given reach of levee may have several concurrent deficiencies, the length of total deficiencies can exceed the length of the levee. (See detail of the rating methodology later in this appendix)

The DWR interim criteria for vegetation and encroachments is aimed at improving public safety by encouraging continued maintenance by LMAs for access and visibility of the flood protection system.

Interim Inspection Criteria - Vegetation

DWR inspects vegetation on levees based upon USACE's checklist criteria with exceptions listed below.

- DWR inspectors will evaluate and rate all vegetation within the top 20 feet (slope length) of the waterside hinge point (intersection of crown and slope), anywhere on the landside slope, and within 10 feet of the landside toe. Riparian vegetation and other vegetation beyond 20 feet from the waterside hinge point are not evaluated or rated at present.
- Grass and weeds on the landside and upper waterside must be maintained at a height of less than 12 inches.
- Trees must be trimmed at least five feet above the ground and 12 feet above the ground over roadways.
- Trees must be thinned sufficiently to allow clear visibility and access for flood fight operations.
- Brush and woody vegetation must be trimmed, thinned, or removed to allow clear visibility and access for flood fight operations.
- Minimal densities of vegetation not meeting these criteria were rated as Minimally Acceptable.
- Significant densities of vegetation not meeting these criteria were rated as Unacceptable.

- Elderberries were evaluated using the same criteria as trees or other vegetation.

These criteria are shown in Figures B-1 and B-2. The criteria protect levee operability and integrity by requiring open visibility and access to those portions of the levee most susceptible to high water damage while retaining vegetation that possess both habitat and environmental value. Such vegetation may also have positive effects on levee integrity. These criteria may change as the Central Valley Flood Protection Plan is developed.

DWR Interim Vegetation Inspection Criteria for Standard Levees, October 2007

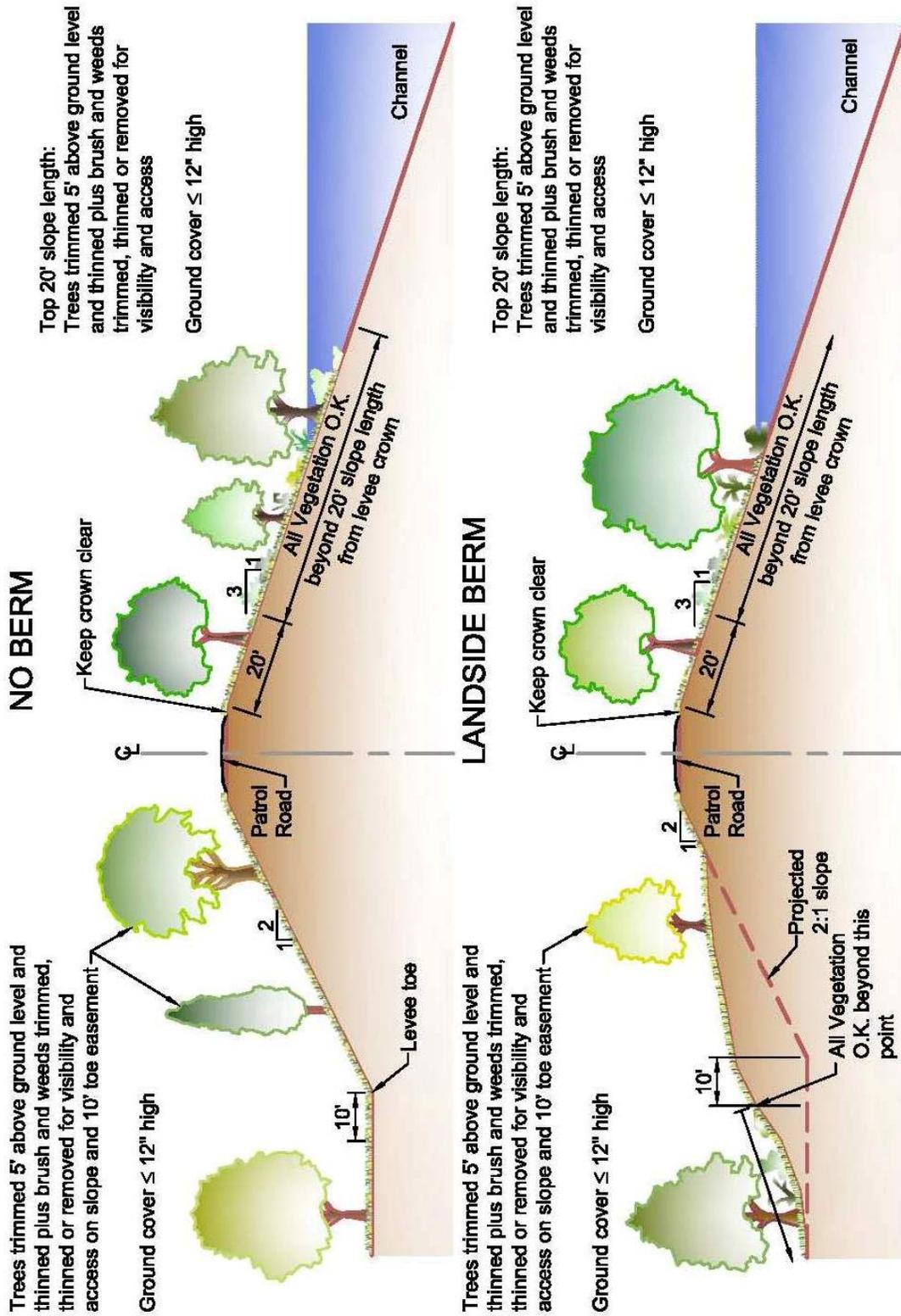


Figure B-1

DWR Interim Vegetation Inspection Criteria for Standard Levees, October 2007

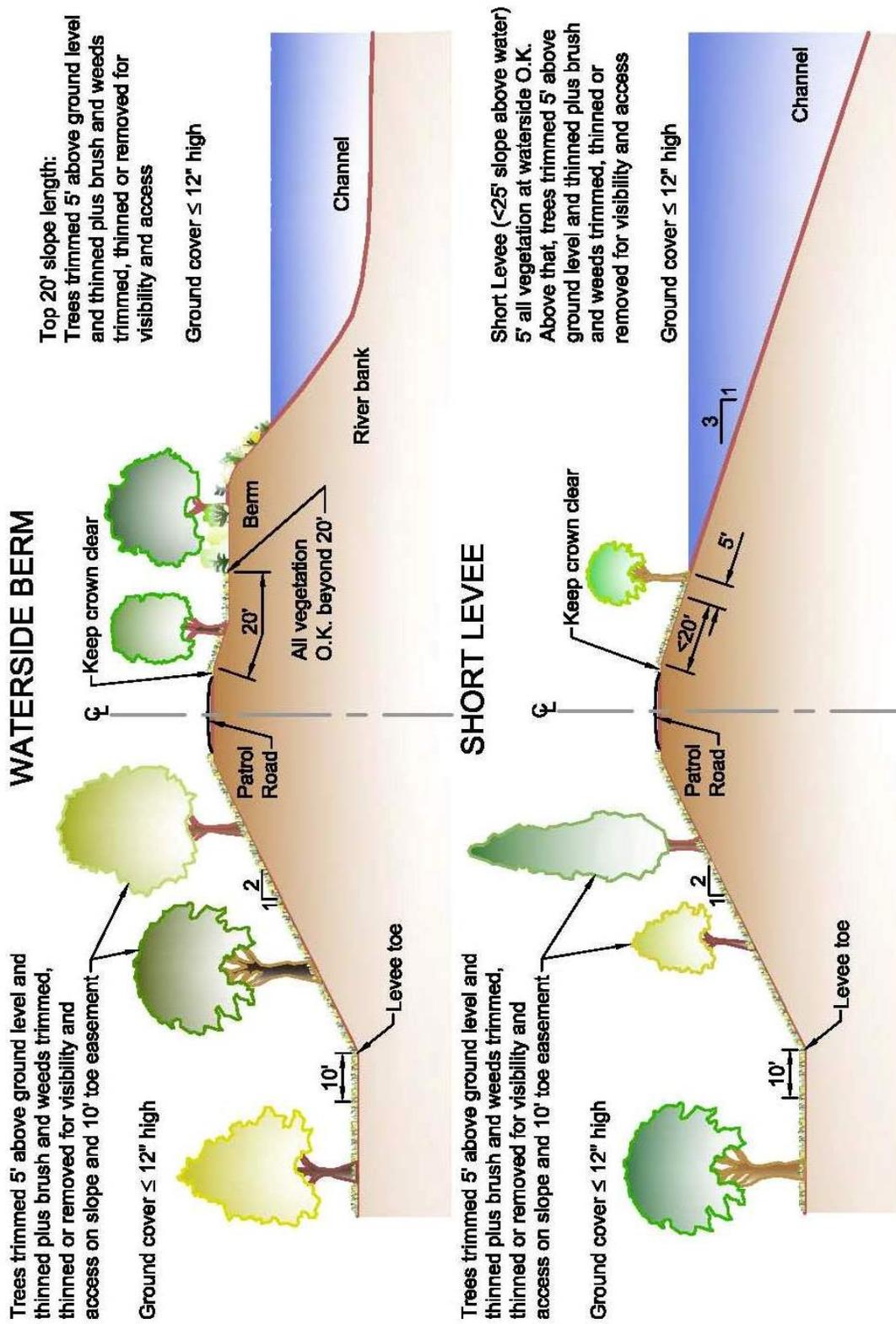


Figure B-2

Interim Inspection Criteria - Encroachments

Past USACE inspections identified encroachments that posed a threat to the integrity of the levee, or blocked visibility or access to the levee as unacceptable (U). DWR inspectors followed a similar approach during their 2007, 2008 and 2009 fall inspections.

The DWR approach included documenting and rating three types of encroachments:

- a) Encroachments that threaten levee integrity.
- b) Encroachments that are inappropriately placed on the levee, such as trash, prunings, abandoned equipment, etc.
- c) Encroachments that obstruct visibility and access.

The first two are to be rated as either Minimally Acceptable (M) or Unacceptable (U). These two types of encroachments are included in the overall ratings and should be corrected by the LMAs.

The third type of encroachment that the USACE identified as unacceptable may be beyond the current authority of the LMAs to correct because the encroachment may be Board permitted or have other factors associated with it that prevent LMAs from taking action. In 2007, using the same extents identified in Figures B-1 and B-2, and described in Section 2.2.1 for vegetation, DWR inspectors broadly recorded the location, length, and type of encroachments that obstruct visibility and/or access. These PO and CO encroachments are not included in the overall ratings (A, M, and U). Instead, they are identified to generate an inventory of those encroachments that the USACE has, in the past, found to be unacceptable and those encroachments that could affect the operation of the system. The permit status of these encroachments has not been determined.

B-2.3 Levee Inspection Rating Methodology

This section conveys the rating method (developed in 2007) and the associated maintenance guidelines that are applied by the Inspection Section of the FPIIB to generate the *overall* LMA ratings which are a representation of the LMAs' annual levee maintenance practices.

The Rating Method

USACE Document ER 500-1-1, paragraph 5-5.b (2) (b) defines the following project condition as presented in EP 500-1-1, Table 5-2:

- Acceptable – No immediate work required, other than routine maintenance. The flood protection project will function as designed and intended, with a high degree of reliability, and necessary cyclic maintenance is being adequately performed.
- Minimally Acceptable – One or more deficient conditions exist in the flood protection project that need to be improved or corrected. However, the project will essentially function as designed with a lesser degree of reliability than what the project could provide.
- Unacceptable – One or more deficient conditions exist that may prevent the project from functioning as designed, intended, or required.

USACE is in the process of modifying the levee inspection checklist and has indicated that new requirements for maintenance and inspection of flood protection works are forthcoming.

In the past, DWR arrived at each overall unit and LMA rating by making an estimation of the number, expanse, and seriousness of the deficient conditions found during the annual inspection and arriving at one of the above project condition ratings. This system was subjective and possibly inconsistent. It did not always reflect the possible negative effect of combined deficiencies.

Under the current USACE ratings directive, an LMA with a single Minimally Acceptable deficient condition may have received the same overall Minimally Acceptable rating as an LMA with dozens of Minimally Acceptable deficient conditions throughout its length. DWR believes that the LMAs should be rated by their overall maintenance condition rather than just by the rating of their worst deficient condition.

- In 2007, DWR created a new methodology, whereby 2007 overall ratings were calculated using the percentage of an LMA's overall mileage receiving less-than-acceptable ratings. This is known as the threshold percent.
- This methodology has proven to be effective and was again applied for the 2008 and 2009 inspection cycles.

Thresholds

Thresholds were established that determine the overall rating as shown below. If over 20 percent of the total LMA mileage was given a Minimally Acceptable rating, the overall rating was deemed Unacceptable.

Greater than 100% Deficient

Since 12 main categories and numerous minor categories were inspected, with most receiving ratings for the landside, waterside, and crown (triple the length of the levee), it is possible for a poorly maintained levee to receive Minimally Acceptable or Unacceptable ratings for well over 100 percent of its length.

Table B-1 and Figure B-3 further explain the rating method.

Table B-1: Overall Rating Thresholds

<p>A = Acceptable, M = Minimally Acceptable, U = Unacceptable</p>
<p><u>Only M ratings within Unit or LMA:</u></p> <p>Zero to < 10 % M results in Overall A rating. 10% to < 20% M results in Overall M rating. ≥ 20% M results in Overall U Rating</p> <p>If $\frac{\text{Miles of M in Unit or LMA}}{\text{Total miles in Unit or LMA}} > 0 \text{ but } < 0.10$, Overall Rating = A</p> <p>If $\frac{\text{Miles of M in Unit or LMA}}{\text{Total miles in Unit or LMA}} \geq 0.10 \text{ but } < 0.20$, Overall Rating = M</p> <p>If $\frac{\text{Miles of M in Unit or LMA}}{\text{Total miles in Unit or LMA}} \geq 0.20$, Overall Rating = U</p>
<p><u>Only U ratings within Unit or LMA:</u></p> <p>> Zero to < 5% U rating results in Overall M rating. ≥ 5% U rating results in Overall U rating</p> <p>If $\frac{\text{Miles of U in Unit or LMA}}{\text{Total miles in Unit or LMA}} > 0 \text{ but } < 0.05$, Overall Rating = M</p> <p>If $\frac{\text{Miles of U in Unit or LMA}}{\text{Total miles in Unit or LMA}} \geq 0.05$, Overall Rating = U</p>
<p><u>Both M and U ratings within Unit or LMA:</u></p> <p>Correlation of Severity = COS =</p> <p>$\frac{\text{Only M Threshold \%}}{\text{Only U Threshold \%}} = \frac{20\%}{5\%} = 4 = \text{COS}$</p> <p>Multiply miles of U by COS of 4 and add to miles of M = M + 4U</p> <p>If $\frac{\text{Miles of M + 4U in Unit or LMA}}{\text{Total miles in Unit or LMA}} > 0 \text{ but } < 0.20$, Overall Rating = M</p> <p>If $\frac{\text{Miles of M + 4U in Unit or LMA}}{\text{Total miles in Unit or LMA}} \geq 0.20$, Overall Rating = U</p> <p>Example 1: Unit length = 10.00 miles, M = 0.60 mile, U = 0.30 mile: $4U = 4(0.30) = 1.20 \text{ miles}$. $M + 4U = 0.60 \text{ mile} + 1.20 \text{ mile} = 1.80 \text{ miles}$</p> <p>$\frac{M + 4U}{\text{Total unit miles}} = \frac{1.80 \text{ miles}}{10.00 \text{ miles}} = 0.18 < 0.20$ so Overall Rating = M</p> <p>Example 2: Unit length = 10.00 miles, M = 1.10 mile, U = 0.30 mile: $4U = 4(0.30) = 1.20 \text{ miles}$. $M + 4U = 1.10 \text{ miles} + 1.20 \text{ miles} = 2.30 \text{ miles}$</p> <p>$\frac{M + 4U}{\text{Total unit miles}} = \frac{2.30 \text{ miles}}{10.00 \text{ miles}} = 0.23 > 0.20$ so Overall Rating = U</p>

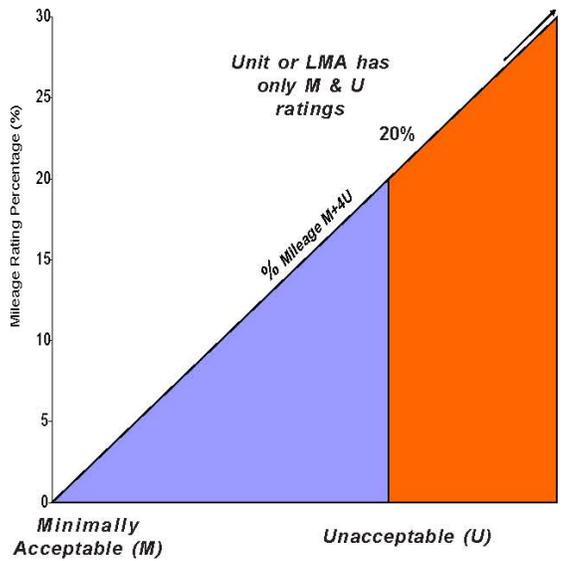
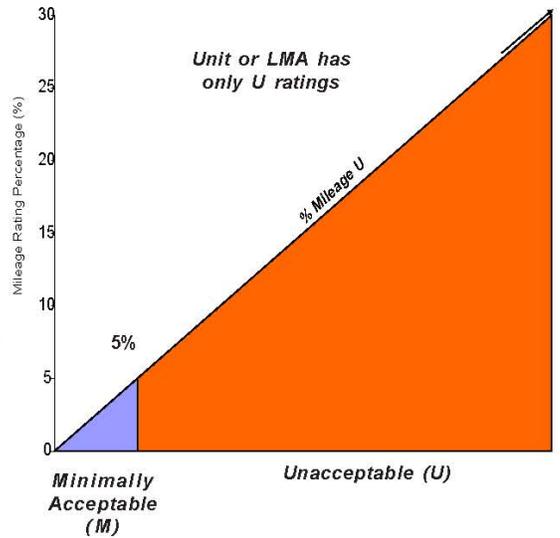
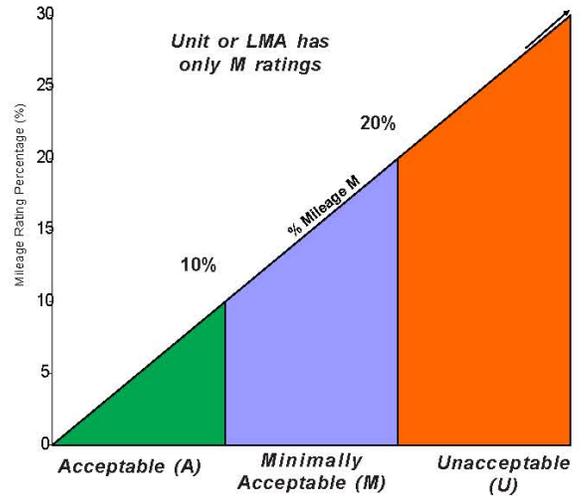
OVERALL MAINTENANCE RATING FLOW CHART

DWR Inspections

DWR inspectors document location and length of maintenance deficiencies.

Deficiencies are rated either as **Minimally Acceptable (M)** or **Unacceptable (U)**. Total mileages of each rating in each unit and LMA are calculated and divided by total unit and LMA length to determine percentages of M or U. Percentage thresholds are then applied to determine overall unit and LMA ratings as shown at right.

**Overall
Levee
Rating**



Overall Maintenance Rating Flow Chart

Figure B-3

The Maintenance Guidelines

When applying the ratings described above, a number of maintenance categories pertaining to levee maintenance are considered. These categories are based on maintenance guidelines listed below.

Readiness for Flood Emergency

Each LMA shall have an organized plan to effectively combat a flood situation. 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 a network of handheld radios or cellular telephones for communication available while patrolling during a flood emergency.

Adequate Levee Section and Grade

Each LMA 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 A-3.

Adequate Encroachment Control

Each LMA is held responsible for preventing the construction of, or requiring the removal of, any illegally encroaching structures or activities on the levee or within the ten-foot regulatory easement at the landward toe of the levee. The maintaining agency must also stop any unauthorized 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 Board. Failure of the LMA to control unauthorized encroachments can threaten the integrity of the levee, interfere with levee patrol visibility, and hamper a flood fight. These may be cause for downgrading the LMA's annual rating in this report.

Vegetation

Each LMA 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 CCR, Title 23. However, present DWR interim vegetation 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 anywhere beyond 20 feet (slope length) from the waterside hinge (intersection of levee slope and crown – see Figures B-1 and B-2).

Rodent and Animal Control

It is imperative that each LMA have a rodent control program. Rodent burrows can weaken the structural integrity of a levee by creating a seepage path through the levee. 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 ensure safety of the levee during high water events. Effective filling 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.

Seepage/Boils

Seepage under or through the levee can cause boils, leading to erosion and possible piping 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.

Slope Stability and Repair of Cracks, Erosion, and Caving

Each LMA 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 LMA superintendent is required to report to the 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 LMA rating.

Condition of Rock Revetment

Each LMA 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.

Condition of Levee Crown and Roadway

Each LMA 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 adverse conditions.

Condition of Pipes and Interior Drainage System

Each LMA 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 Board standards and under the supervision of qualified 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 that 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 Board to require the timely repair or removal of pipes or other structures that threaten the levee integrity.

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 for use during 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.

Combining Criteria, Maintenance Guidelines and Methodology

In the field, each inspector documents the location, length, and type of maintenance category (see the guidelines listed above) giving a rating to each category found to be deficient in accordance with the established ratings criteria above. In any field inspection process, there will be some inherent subjectivity. However, DWR believes that training, the use of the new database driven inspection software, new hardware, and the inclusion of the ratings criteria on the inspectors' field computers have led to more accurate and consistent ratings - which are provided by the inspectors themselves. The inspection criteria used in the field can be seen in Table C-1 of Appendix C. Further, the new methodology of determining overall unit and LMA ratings, described in Table B-1 and Figure B-3, has resulted in more consistent and objective overall ratings.

Levee Inspection Reporting

Individual levee mile inspection reports that summarize findings and identify deficiencies are distributed to each LMA after the spring and fall DWR inspection cycles. These reports are to be used by LMAs to scope and prioritize maintenance and improvement efforts, and the LMAs have been instructed to use these reports as a baseline for their summer and winter inspections. When requested, DWR levee inspectors may accompany LMAs on joint summer or winter inspections to discuss non-compliance and needed improvements. Spring and fall levee mile reports are submitted to USACE and the Board. Monthly presentation updates and an annual report are also submitted to the Board.

B-2.4 Channel Inspection Criteria

26 project channels in the Sacramento River, San Joaquin River, and other river and stream basins are inspected annually by the Flood Project Integrity and Inspection Branch of the Division of Flood Management during the summer months.

The purpose of the annual inspection is to identify and report on any condition which may diminish channel design capacities. Such conditions include: vegetation & obstructions, encroachments, sediment deposition (shoaling), revetments, and erosion / bank caving. Concrete lined channels are further evaluated with respect to the condition of the concrete and other structural appurtenances. Appendix C, Table C-2 Project Channel Rating Categories outlines the channel inspection criteria used in the field.

In general, maintaining the channels to the condition that existed after completion of the initial construction will preserve their design capacities. The standard of comparison for

the inspection is, therefore, the condition immediately after construction. Design capacities, if applicable, can be found in the operations and maintenance (O&M) manuals for each project channel.

The annual inspections rely upon a qualitative rating system that has been developed based on the USACE O&M manuals. As the annual inspections are qualitative in nature, the existing channel capacities are not evaluated in this report. Ultimately, a single overall rating is assigned to each channel by the DWR. This overall rating is a relative indication of how well maintained each channel is.

The USACE and the State of California constructed the channels included in this report. Local agencies or the State of California agreed to be responsible for the maintenance of these channels at the time of construction or at a later time. The USACE issued the O&M manuals referenced above to each maintaining agency at the time of construction. The results of these annual inspections are shown in Appendix D and are made available to the maintaining agencies, USACE, the Board, and the public.

B-2.5 Channel Inspection Rating Methodology

This section outlines the methodology by which an overall rating is developed from the field applied category ratings for the project channels of the flood protection system:

Step 1). The inspector must assess an initial rating of A (Acceptable), M (Minimally Acceptable), U (Unacceptable), or N (Not Rated) to each category for the flood protection work under inspection. Each of the five categories is weighted equally as a threat to the flood protection works' capacity.

Step 2). In the office, a numeric total is obtained for each flood protection work by valuing each rating given to each of the designated categories. The ratings are valued as follows: A is given zero points, M is given one point, U is given four points and N is given zero points. Note that if a category is not applicable to a flood protection work, then it should not be detrimental to the overall rating; hence, the zero point value for the N rating.

Step 3). This total is then divided by the total number of categories that were found to be applicable (A, M or U) in the field to calculate the average value.

Step 4). Lastly, an overall rating of A, M, or U is found by determining which range that average value falls within. The ranges are: $A \leq 0.2$, $0.2 < M \leq 1.0$., $1.0 < U \leq 4.0$.

Channel inspection results are shown in Appendix E.

B-2.6 Structures Inspection Criteria

The maintenance effort expended on structures has been the subject of an annual report dating back to 1959. A report entitled, Location, Description and Inventory of Miscellaneous Project Structures, Sacramento River Flood Control Project, and American River Flood Control Project, was issued and was followed shortly thereafter by a maintenance status report. Maintenance status reports on flood protection structures have since been made on an annual basis. It was in this Structures Report that the State of California made its inspection results (formerly maintenance status reports) available to the LMAs, the USACE, the CVFPB, and the public. In 2008 the structures report was

incorporated into the annual Inspection Report. These inspections are made on behalf of the CVFPB by DWR, Division of Flood Management, Flood Project Inspection Section.

Structures are inspected once annually during the summer months and include forty three flood protection structures and thirteen pumping plants. The summer inspections of these structures and pumping plants are visual field inspections and are based on USACE inspection categories. Category names and rating descriptions are provided in Appendix C; Table C-3 Structure Rating Categories and Table C-4 Pump Station Rating Categories. The inspector must assess an initial rating of A (Acceptable), M (Minimally Acceptable), U (Unacceptable), or N (Not Rated) to each category that is applicable to the flood protection work under inspection.

B-2.7 Structure Inspection Rating Methodology

This section outlines the methodology by which an overall rating is developed from the field applied category ratings for the structural components of the flood protection system:

Step 1). The inspector must assess an initial rating of A (Acceptable), M (Minimally Acceptable), U (Unacceptable), or N (Not Rated) to each category for the flood protection work under inspection. Each category is weighted equally as a threat to the flood protection works' capacity.

Step 2). In the office, a numeric total is obtained for each flood protection work by valuing each rating given to each of the USACE designated categories. The ratings are valued as follows: A is given zero points, M is given one point, U is given four points and N is given zero points. Note that if a category is not applicable to a flood protection work, then it should not be detrimental to the overall rating; hence, the zero point value for the N rating.

Step 3). This total is then divided by the total number of categories that were found to be applicable (rated A, M or U) in the field to calculate the average value.

Step 4). Lastly, an overall rating of A, M, or U is found by determining which range that average value falls within. The ranges are: $A \leq 0.2$, $0.2 < M \leq 1.0$, $1.0 < U \leq 4.0$.

Structure inspection results are shown in Appendix F. Pump Station inspection results are shown in Appendix G.

Appendix C: Inspection Category Rating Descriptions

Table C-1: Levee Inspection Rating Categories

FEATURE	CATEGORY	RATING	RATING DESCRIPTION
Earthen Levee	Vegetation	A	The Levee has a good grass cover with no unwanted vegetation (brush, bushes, undesirable weeds) blocking visibility or access.
		M	Tall grass, weeds, or brush partially block visibility of or access to the levee and/or to 10' beyond the landside toe.
		U	Tall grass, weeds, or brush completely block visibility of or access to the levee and/or to 10' beyond the landside toe.
Earthen Levee	Trim/ Thin Trees	A	Any trees on the levee or the 10' landside toe easement are trimmed up at least 5' above the levee slope and spaced enough to allow visibility and flood fight access. Trees adjacent to the levee crown or patrol road are trimmed at least 12' above ground.
		M	Moderate density of limbs, leaves or the trees themselves are partially obstructing visibility and flood fight access to the levee slope and/or 10' beyond the landside toe.
		U	Significant density of limbs, leaves or the trees themselves are completely obstructing visibility and flood fight access to the levee slope and/or 10' beyond the landside toe.
Earthen Levee	Encroachments	A	No Trash or debris present. No excavation, structures, or other encroachments threatening levee integrity. No encroachments obstruct visibility or access to the levee or landside toe easement.
		M	Minimal trash or debris present. Minor excavation, structure, or other encroachment poses minor threat to levee integrity.
		U	Significant trash or debris present. Major excavation, structure, or other encroachment poses major threat to levee integrity.
		PO	An encroachment (Permitted or Non-Permitted) partially obstructs visibility and access to the levee and/or 10' beyond landside toe.
		CO	An encroachment (Permitted or Non-Permitted) completely obstructs visibility and access to the levee and/or 10' beyond landside toe.
Earthen Levee	Animal Control	A	Continuous animal burrow control program in place that includes the elimination of active burrowing and the filling in and compacting or grouting of existing burrows.
		M	The existing animal eradication and burrow repair program needs to be improved. Several animal burrows present which may lead to seepage or slope stability problems. Burrows must be filled and compacted or grouted.
		U	Animal eradication and burrow repair program is not effective or is nonexistent. Significant maintenance is required to fill and compact or grout existing burrows, and levee will not provide reliable flood protection until this maintenance is complete.
Earthen Levee	Slope Stability	A	No slides present.
		M	Minor superficial sliding that with deferred repairs will not pose an immediate threat to FCW integrity.
		U	Evidence of deep seated sliding that threatens FCW integrity. Repairs are required to reestablish FCW integrity.

Earthen Levee	Erosion/ Bank Caving	A	No active erosion or bank caving observed on the landward or on the riverward side of the levee.
		M	There are areas where active erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.
Earthen Levee	Cracking	A	No Cracking observed on the levee greater than 6 inches deep.
		M	Longitudinal and/or transverse cracking greater than 6 inches deep. No evidence of vertical movement along the crack.
		U	Longitudinal and/or transverse cracking present and exhibits signs of vertical movement.
Earthen Levee	Crown Surface/ Depressions/ Rutting	A	The road is in all-weather condition. There are no ruts, pot holes, or other depressions on the levee, except for minor depressions caused by levee settlement. The levee crown, embankments, and access road crowns are well established and drain properly without any ponded water.
		M	Some minor depressions in the levee crown, embankment, or access roads that will not pond water and do not threaten the integrity of the levee or some additional road material may be necessary.
		U	There are depressions greater than 6 inches deep that will pond water, endangering the integrity of the levee or significant additional road material is needed.
Earthen Levee	Rip Rap Revetments	A	Existing riprap protection is properly maintained and is undamaged. Riprap clearly visible.
		M	Minor riprap displacement or scouring activity that could undercut banks, erode embankments, or restrict desired flow.
		U	Meandering and/or scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling. Significant quantities of riprap have been lost.
Earthen Levee	Closure Structures	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components of closure clearly marked and installation instructions / procedures readily available.
		U	Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within normal warning time.
Earthen Levee	Seepage/ Sandboils	A	No Seepage, saturated areas, or sand boils occurring at the time of the inspection.
		U	Seepage and/or sand boils were observed which could threaten the integrity of the project. (Regardless of size, any sand boils observed during low water conditions could threaten project integrity when the water is high, and are considered unacceptable.)

Earthen Levee	Underseepage Relief Wells	A	Toe drainage system and pressure relief wells necessary for maintaining FCW stability during flood events functioned properly during the last flood event and no sediment is observed in horizontal system. Nothing is observed which would indicate that the system won't function properly during the next flood.
		M	Toe drainage system or pressure relief wells are damaged and may become clogged if they are not repaired.
		U	Toe drainage systems or pressure relief wells necessary for maintaining FCW stability during flood events have fallen into disrepair or have become clogged.
Earthen Levee	Repair Gates	A	Gates open and close freely, locks are in place and there is little corrosion on metal parts.
		M	Gates are damaged or corroded but appear to be maintainable.
		U	Gates are damaged, corroded or impassable and require replacement. District or pass key is not accepted by attached locks.
Interior Drainage & Piping Systems	Vegetation & Obstructions	A	Minimal, scattered obstructions or vegetation. The flow is not impeded.
		M	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes or saplings) or other obstructions block approximately 25% of the FCW.
		U	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes or saplings) or other obstructions block approximately 50% of the FCW.
Interior Drainage & Piping Systems	Encroachments	A	No Trash, debris, excavation, structures, or other obstructions present within the project easement area. Encroachments which do not diminish proper functioning of the project have been previously approved by the Rec. Board.
		M	Trash, debris, excavations, structures, or other obstructions present, or inappropriate activities that will not inhibit project operations and maintenance or emergency operations. Encroachments have been approved by the Rec. Board.
		U	Trash, debris, excavation, structures, or other obstructions present, or inappropriate activities that will inhibit project operations and maintenance or emergency operation.
Interior Drainage & Piping Systems	Revetments	A	Existing riprap protection is properly maintained and is undamaged. Riprap clearly visible.
		M	No riprap displacement or scouring activity that could undercut banks, erode embankments, or restrict desired flow. Unwanted vegetation must be cleared and sprayed with an appropriate herbicide.
		U	Dense brush, trees, or grasses hide the rock protection, or meandering and/or scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling.

Interior Drainage & Piping Systems	Erosion Areas	A	No active erosion or bank caving observed on the landward or on the riverward side of the levee.
		M	There are areas where active erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.
Interior Drainage & Piping Systems	Culverts: Inlets/ Outlets	A	There is little or no debris, sediment or vegetation blocking the culverts, inlets, sump or discharge areas. The channel capacity for designed flow is not affected.
		M	Debris, sediment or vegetation blocks less than 10% of the culvert opening, but must be removed.
		U	Accumulated debris, sediment or vegetation blocks more than 10% of the culvert opening, impairing the culvert's capacity and hydraulic effectiveness.
Interior Drainage & Piping Systems	Culverts: Breaks/ Holes/Cracks	A	There are no breaks, holes, cracks in the culvert that would result in significant water leakage. Corrugated metal pipes, if present, are in good condition or have been relined with appropriate material which is still in good condition.
		M	There are breaks, holes, cracks in the culvert that would result in water leakage and need to be repaired but do not threaten the integrity of the project. Corrugated metal pipes, if present, are showing deterioration, but the entire length of pipe is still structurally sound and is not in danger of collapsing.
		U	Culvert has deterioration and/or has significant leakage such that it threatens the integrity of the FCW. Corrugated metal pipes are in danger of collapsing or have already begun to collapse.
Interior Drainage & Piping Systems	Metal Pipes	A	There are no breaks, holes, cracks in the culvert that would result in significant water leakage. Corrugated metal pipes, if present are in good condition or have been relined with appropriate material which is still in good condition.
		M	There are breaks, holes, cracks in the culvert that would result in water leakage and need to be repaired but do not threaten the integrity of the project. Corrugated metal pipes, if present, are showing deterioration, but the entire length of pipe is still structurally sound and is not in danger of collapsing.
		U	Culvert has deterioration and/or has significant leakage such that it threatens the integrity of the FCW. Corrugated metal pipes are in danger of collapsing or have already begun to collapse.
Interior Drainage & Piping Systems	Trash Racks	A	Trash racks are fastened in place and properly maintained.
		M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station. Repair or replacement is required.
		U	Trash rack is missing or damaged to the extent that it is no longer functional and must be replaced.

Interior Drainage & Piping Systems	Flap Gates	A	Flap gates open and close easily with minimal leakage. Gates show no corrosion damage and have been maintained.
		M	Gate will not fully open or close because of obstructions that can be easily removed or has corrosion damage that requires maintenance.
		U	Gate is missing, has been damaged or has deteriorated and needs repair.
Interior Drainage & Piping Systems	Sluice / Slide Gates	A	Gates open and close freely with minor leakage. Sill is free of sediment and other obstructions. Gates and lifters have been maintained.
		M	Gates have been damaged, have deteriorated, or open or close with resistance or binding. Leakage quantity is controllable and is not a threat to project performance. Maintenance is required.
		U	Gates do not open or close. Gate, stem, lifter, and/or guides are damaged or corroded.
Interior Drainage & Piping Systems	Electric Gate Operators	A	All electric gate operators are in good working condition, are adequately powered, and are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
		M	All electric gate operators are operational with minor deficiencies but should perform through the next period of usage.
		U	The electric gate operators are not operational, or the power source is not considered reliable to sustain operations during flood conditions.
Interior Drainage & Piping Systems	Manual Gate Operators	A	All manual gate operators are in good working condition and are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
		M	Manual gate operators are operational with minor deficiencies but should perform through the next period of usage.
		U	Manual gate operators are not operational.
Interior Drainage & Piping Systems	Concrete Surfaces	A	Negligible spalling, scaling, or cracking. If the concrete surface is weathered, rough to the touch, or holds moisture, it is still satisfactory but should be seal coated to prevent freeze / thaw damage.
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs / sealing is necessary to prevent additional damage during periods of thawing and freezing.
		U	Surface deterioration or deep, controlled cracks present that result in an unreliable structure.
Interior Drainage & Piping Systems	Concrete Tilting/ Settlement	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the project.
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The integrity of the structure is not in danger.
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance.

Interior Drainage & Piping Systems	Concrete Foundations	A	No scouring / erosion or undermining near the structure.
		M	Scouring / erosion near the footing of the structure but not close enough to affect structure stability during the next flood.
		U	Scouring or undermining at the foundation that has affected structural integrity.
Interior Drainage & Piping Systems	Security Fencing	A	Safety / security fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.
		M	Safety / security fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.
		U	Safety / security fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous project features are not secured.
Concrete Floodwalls	Concrete Surfaces	A	Negligible spalling, scaling, or cracking. If the concrete surface is weathered, rough to the touch, or holds moisture, it is still satisfactory but should be seal coated to prevent freeze / thaw damage.
		M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs / sealing is necessary to prevent additional damage during periods of thawing and freezing.
		U	Surface deterioration or deep, controlled cracks present that result in an unreliable structure.
Concrete Floodwalls	Concrete Tilting/ Settlement	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the project.
		M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The integrity of the structure is not in danger.
		U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance.
Concrete Floodwalls	Concrete Foundations	A	No scouring / erosion or undermining near the structure.
		M	Scouring / erosion near the footing of the structure but not close enough to affect structure stability during the next flood.
		U	Scouring or undermining at the foundation that has affected structural integrity.
Concrete Floodwalls	Monolith Joints	A	The monolith joint material is in good condition.
		M	The monolith joint material is deteriorating and needs to be repaired or replaced to prevent spalling and cracking during freeze / thaw cycles.
		U	The monolith joint material is severely deteriorated and the concrete has spalled and cracked, damaging the water stop to the point where it will not provide the intended level of protection during a flood.

Concrete Floodwalls	Erosion / Bank Caving	A	No active erosion or bank caving observed on the landward or on the riverward side of the levee.
		M	There are areas where active erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.
		U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.
Concrete Floodwalls	Vegetation & Obstructions	A	No Trash, debris, excavation, structures, or other obstructions present within the project easement area. Encroachments which do not diminish proper functioning of the project have been previously approved by the Rec. Board.
		M	Trash, debris, excavations, structures, other obstructions present, or inappropriate activities that will not inhibit project operations and maintenance or emergency operations. Encroachments have been approved by the Rec. Board.
		U	Trash, debris, excavation, structures, other obstructions present, or inappropriate activities that will inhibit project operations and maintenance or emergency operation.
Concrete Floodwalls	Closure Structures	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components of closure clearly marked and installation instructions / procedures readily available.
		U	Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within normal warning time.
Concrete Floodwalls	Underseepage Relief Wells	A	Toe drainage system and pressure relief wells necessary for maintaining FCW stability during flood events functioned properly during the last flood event and no sediment is observed in horizontal system. Nothing is observed which would indicate that the system won't function properly during the next flood.
		M	Toe drainage system or pressure relief wells are damaged and may become clogged if they are not repaired.
		U	Toe drainage systems or pressure relief wells necessary for maintaining FCW stability during flood events have fallen into disrepair or have become clogged.

Table C-2: Channel Inspection Rating Categories

CATEGORY	RATING	RATING DESCRIPTION
Vegetation & Obstructions	A	Minimal, scattered obstructions or vegetation. The flow is not impeded.
	M	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes, or saplings), or other obstructions block approximately 25% of the FCW.
	U	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes, or saplings), or other obstructions block approximately 50% of the FCW.
	N	This item does not apply to this inspection.
Shoaling / Sedimentation	A	No shoaling or sedimentation present.
	M	Non-aquatic grasses present on shoal. No trees or brush is present on shoal, and channel flow is not impeded.
	U	Shoaling is well established, stabilized by trees, brush, or other vegetation. Shoals are diverting flow to channel bank causing bank erosion and undercutting.
	N	This item does not apply to this inspection.
Erosion / Bank Caving	A	No head cutting or horizontal deviation observed.
	M	Head cutting and horizontal deviation evident, but less than 1 foot from designed grade or cross section.
	U	Apparent head cutting and horizontal deviation of more than 1 foot from designed grade or cross section. Corrective actions required to stop or slow erosion.
	N	This item does not apply to this inspection.
Revetments	A	Existing riprap protection is properly maintained and is undamaged. Riprap clearly visible.
	M	No riprap displacement or scouring activity that could undercut banks, erode embankments, or restrict desired flow. Unwanted vegetation must be cleared and sprayed with an appropriate herbicide.
	U	Dense brush, trees, or grasses hide the rock protection, or meandering and/or scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling.
	N	This item does not apply to this inspection.
Encroachments	A	No Trash, debris, excavation, structures, or other obstructions present within the project easement area. Encroachments which do not diminish proper functioning of the project have been previously approved by the Rec. Board.
	M	Trash, debris, excavations, structures, or other obstructions present, or inappropriate activities that will not inhibit project operations and maintenance or emergency operations. Encroachments have been approved by the Rec. Board.
	U	Trash, debris, excavation, structures, or other obstructions present, or inappropriate activities that will inhibit project operations and maintenance or emergency operation.
	N	This item does not apply to this inspection.

Concrete Tilting / Settlement	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the project.
	M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The integrity of the structure is not in danger.
	U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance.
	N	This item does not apply to this inspection.
Concrete Foundations	A	No scouring / erosion or undermining near the structure.
	M	Scouring / erosion near the footing of the structure but not close enough to affect structure stability during the next flood.
	U	Scouring or undermining at the foundation that has affected structural integrity.
	N	This item does not apply to this inspection.
Concrete Surfaces	A	Negligible spalling, scaling, or cracking. If the concrete surface is weathered, rough to the touch, or holds moisture, it is still satisfactory but should be seal coated to prevent freeze / thaw damage.
	M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs / sealing is necessary to prevent additional damage during periods of thawing and freezing.
	U	Surface deterioration or deep, controlled cracks present that result in an unreliable structure.
	N	This item does not apply to this inspection.
Gates	A	Flap gates open and close easily with minimal leakage. Gates show no corrosion damage and have been maintained.
	M	Gate will not fully open or close because of obstructions that can be easily removed or has corrosion damage that requires maintenance.
	U	Gate is missing, has been damaged or has deteriorated and needs repair.
	N	This item does not apply to this inspection.

Table C-3: Structure Rating Categories

CATEGORY	RATING	RATING DESCRIPTION
Vegetation & Obstructions	A	Minimal, scattered obstructions or vegetation. The flow is not impeded.
	M	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes or saplings) or other obstructions block approximately 25% of the FCW.
	U	Log jams, snags, vegetation growth (such as cat tails, bull rushes, bushes or saplings) or other obstructions block approximately 50% of the FCW.
	N	This item does not apply to this inspection.
Shoaling / Sedimentation	A	No shoaling or sedimentation present.
	M	Non-aquatic grasses present on shoal. No trees or brush are present on shoal, and structure operation and channel flows are not impeded.
	U	Shoaling is well established, stabilized by trees, brush or other vegetation. Shoals are obstructing structure operation or diverting flow to channel bank causing bank erosion and undercutting.
	N	This item does not apply to this inspection.
Erosion / Bank Caving	A	No active erosion or bank caving observed on the landward or on the riverward side of the levee.
	M	There are areas where active erosion is occurring or has occurred on or near the levee embankment, but levee integrity is not threatened.
	U	Erosion or caving is occurring or has occurred that threatens the stability and integrity of the levee. The erosion or caving has progressed into the levee section or into the extended footprint of the levee foundation and has compromised the levee foundation stability.
	N	This item does not apply to this inspection.
Revetments	A	Existing riprap protection is properly maintained and is undamaged. Riprap clearly visible.
	M	No riprap displacement or scouring activity that could undercut banks, erode embankments, or restrict desired flow. Unwanted vegetation must be cleared and sprayed with an appropriate herbicide.
	U	Dense brush, trees, or grasses hide the rock protection, or meandering and/or scour activity is undercutting banks, eroding embankments, or impairing channel flows by causing turbulence or shoaling.
	N	This item does not apply to this inspection.
Encroachments	A	No Trash, debris, excavation, structures, or other obstructions present within the project easement area. Encroachments which do not diminish proper functioning of the project have been previously approved by the Rec. Board.
	M	Trash, debris, excavations, structures, other obstructions present, or inappropriate activities that will not inhibit project operations and maintenance or emergency operations. Encroachments have been approved by the Rec. Board.
	U	Trash, debris, excavation, structures, other obstructions present, or inappropriate activities that will inhibit project operations and maintenance or emergency operation.
	N	This item does not apply to this inspection.

Culverts: Inlets / Outlets	A	There is little or no debris, sediment, or vegetation blocking the culverts, inlets, sump, or discharge areas. The channel capacity for designed flow is not affected.
	M	Debris, sediment, or vegetation blocks less than 10% of the culvert opening but must be removed.
	U	Accumulated debris, sediment, or vegetation blocks more than 10% of the culvert opening, impairing the culvert's capacity and hydraulic effectiveness.
	N	This item does not apply to this inspection.
Culverts: Breaks / Holes / Cracks	A	There are no breaks, holes, cracks in the culvert that would result in significant water leakage. Corrugated metal pipes, if present, are in good condition or have been relined with appropriate material which is still in good condition.
	M	There are breaks, holes, cracks in the culvert that would result in water leakage and need to be repaired but do not threaten the integrity of the project. Corrugated metal pipes, if present, are showing deterioration, but the entire length of pipe is still structurally sound and is not in danger of collapsing.
	U	Culvert has deterioration and/or has significant leakage such that it threatens the integrity of the FCW. Corrugated metal pipes are in danger of collapsing or have already begun to collapse.
	N	This item does not apply to this inspection.
Metal Pipes	A	There are no breaks, holes, cracks in the culvert that would result in significant water leakage. Corrugated metal pipes, if present, are in good condition or have been relined with appropriate material which is still in good condition.
	M	There are breaks, holes, cracks in the culvert that would result in water leakage and need to be repaired but do not threaten the integrity of the project. Corrugated metal pipes, if present, are showing deterioration, but the entire length of pipe is still structurally sound and is not in danger of collapsing.
	U	Culvert has deterioration and/or has significant leakage such that it threatens the integrity of the FCW. Corrugated metal pipes are in danger of collapsing or have already begun to collapse.
	N	This item does not apply to this inspection.
Trash Racks	A	Trash racks are fastened in place and properly maintained.
	M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station. Repair or replacement is required.
	U	Trash rack is missing or damaged to the extent that it is no longer functional and must be replaced.
	N	This item does not apply to this inspection.

Flap Gates	A	Flap gates open and close easily with minimal leakage. Gates show no corrosion damage and have been maintained.
	M	Gate will not fully open or close because of obstructions that can be easily removed or has corrosion damage that requires maintenance.
	U	Gate is missing, has been damaged, or has deteriorated and needs repair.
	N	This item does not apply to this inspection.
Sluice / Slide Gates	A	Gates open and close freely with minor leakage. Sill is free of sediment and other obstructions. Gates and lifters have been maintained.
	M	Gates have been damaged, have deteriorated, or open or close with resistance or binding. Leakage quantity is controllable and is not a threat to project performance. Maintenance is required.
	U	Gates do not open or close. Gate, stem, lifter, and/or guides are damaged or corroded.
	N	This item does not apply to this inspection.
Electric Gate Operators	A	All electric gate operators are in good working condition, are adequately powered, and are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
	M	All electric gate operators are operational with minor deficiencies but should perform through the next period of usage.
	U	The electric gate operators are not operational, or the power source is not considered reliable to sustain operations during flood conditions.
	N	This item does not apply to this inspection.
Manual Gate Operators	A	All manual gate operators are in good working condition and are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
	M	Manual gate operators are operational with minor deficiencies but should perform through the next period of usage.
	U	Manual gate operators are not operational.
	N	This item does not apply to this inspection.
Concrete Surfaces	A	Negligible spalling, scaling, or cracking. If the concrete surface is weathered, rough to the touch, or holds moisture, it is still satisfactory but should be seal coated to prevent freeze / thaw damage.
	M	Spalling, scaling, and open cracking present, but the immediate integrity or performance of the structure is not threatened. Reinforcing steel may be exposed. Repairs / sealing is necessary to prevent additional damage during periods of thawing and freezing.
	U	Surface deterioration or deep, controlled cracks present that result in an unreliable structure.
	N	This item does not apply to this inspection.
Concrete Tilting / Settlement	A	There are no significant areas of tilting, sliding, or settlement that would endanger the integrity of the project.
	M	There are areas of tilting, sliding, or settlement (either active or inactive) that need to be repaired. The integrity of the structure is not in danger.
	U	There are areas of tilting, sliding, or settlement (either active or inactive) that threaten the structure's integrity and performance.
	N	This item does not apply to this inspection.

Concrete Foundations	A	No scouring / erosion or undermining near the structure.
	M	Scouring / erosion near the footing of the structure but not close enough to affect structure stability during the next flood.
	U	Scouring or undermining at the foundation that has affected structural integrity.
	N	This item does not apply to this inspection.
Security Fencing	A	Safety / security fencing is in good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.
	M	Safety / security fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.
	U	Safety / security fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous project features are not secured.
	N	This item does not apply to this inspection.
Closure Structures	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components of closure clearly marked and installation instructions / procedures readily available.
	U	Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within normal warning time.
	N	This item does not apply to this inspection.
Trash Rakes	A	Drive chain, bearings, gear reducers, and other components are in good operating condition and are being properly maintained.
	M	The trash rake is in need of maintenance but is still operational.
	U	Trash rake is not operational or deficiencies will inhibit operations during the next flood event.
	N	This item does not apply to this inspection.
Other Metallic Items	A	All metal parts are protected from corrosion damage and show no rust or deterioration that would cause a safety concern.
	M	Corrosion seen on metallic parts (except equipment anchors) appears maintainable.
	U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.
	N	This item does not apply to this inspection.
Monolith Joints	A	The monolith joint material is in good condition.
	M	The monolith joint material is deteriorating and needs to be repaired or replaced to prevent spalling and cracking during freeze / thaw cycles.
	U	The monolith joint material is severely deteriorated and the concrete has spalled and cracked, damaging the water stop to the point where it will not provide the intended level of protection during a flood.
	N	This item does not apply to this inspection.

Safety	A	Safety hardware installed. Adequate protection for fall hazards exists. No hazardous conditions that might affect the operation of the structure exist.
	M	Minor safety hazards are present, but do not pose an immediate threat to the structure or personnel at the structure. Corrections should be made prior to the next annual inspection.
	U	Safety issues exist that could cause injury or loss of life.
	N	This item does not apply to this inspection.

Table C-4: Pump Station Rating Categories

CATEGORY	RATING	RATING DESCRIPTION
Operating Log	A	Operation and Maintenance log is present at the pump station and is being used and updated, and personnel have been trained in pump station operations. Names and last training date shown in the log book.
	U	No operating log present, or refresher training for personnel has not been conducted.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Operation & Maintenance Manual	A	Operation and Maintenance (O&M) Manual and/or posted operating instructions are present and adequately cover all pertinent pump station features.
	U	Operation and Maintenance (O&M) Manual and/or posted operating instructions are missing or sponsor is unsure of location.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Plant Building	A	Plant building is in good structural condition with no major cracks in concrete or brick. The roof is not leaking, exhaust fans are operational, there are no exposed electrical components, and the working environment is safe.
	M	There is significant cracking in the building structure, or the building is damaged in other ways such that it needs repair but does not threaten pumping operations.
	U	The structural integrity or stability of the building is threatened, or there is other damage to the building such that pumping operations cannot be performed as intended.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Communications	A	Telephone, cellular telephone, two-way radio, or similar device is available to pump station operator or maintenance personnel.
	U	Pump station operator or maintenance personnel required to leave the pump station and drive to access communications.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Safety	A	No exhaust leaks in building. Fuel storage/distribution meets state/local requirement. Fire extinguishers on hand, of sufficient quantity, and properly charged. Safety hardware installed. Required safety items used (hearing, eyes, etc.).
	M	Minor safety hazards are present, but do not pose an immediate threat to the pumping plant or personnel at the plant. Corrections should be made prior to the next annual inspection.
	U	Safety issues exist that could cause injury or loss of life.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Cranes	A	Crane operational and has been inspected and load tested in accordance with OSHA requirements.
	M	Crane has not been inspected or operationally tested within the past year, or there are visible signs of corrosion, oil leakage, etc, requiring maintenance.
	U	Crane not operational or tagged out of service.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Pumps	A	All pumps are properly maintained and lubricated. System is periodically tested, and there is no evidence of cavitation, vibration, or unusual sounds.
	M	Minor deficiencies exist which need to be closely monitored or repaired, such as the presence of minor vibrations or the corrosion of the pump shaft housing. However, the pumps are operational and are expected to perform through the next expected period of usage.
	U	One or more of the pumps are not operational, or the pump capacity has degraded to the point where project performance is in question.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Power	A	The power source is adequate, safe, and reliable. Backup generators are on hand or there is a reliable backup power plan in place. Backup units are properly sized, operational, periodically exercised, and properly maintained.
	U	Power source not considered safe or reliable to sustain operations during flood conditions.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Motors, Engines, Fans & Gear Reducers	A	All items are operational. Preventative maintenance and lubrication are being performed and the system is periodically subjected to performance testing. Instrumentation, alarms, and auto shutdowns are operational.
	M	Systems have minor deficiencies but are operational and will function adequately through the next flood.
	U	One or more primary motors or systems are not operational.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Pump Control Systems	A	Operational and maintained free of damage, corrosion, or other debris.
	M	Operational with minor discrepancies. Will function adequately during the next flood event.
	U	Pump controls not operational. May not function adequately during the next flood season.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Sumps/Wet Well	A	Clear of excessive debris, sediment, or other obstructions. Procedures are in place to move debris accumulation during operation.
	M	Debris, sediment, or other obstructions are present and must be removed, but the sump / wet well will function as intended during the next flood event. Procedures are in place to remove debris accumulation during operation.
	U	Large debris or excessive silt present which will hinder or damage pumps during operation, or no procedures have been established to remove debris accumulation during operation.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Trash Racks	A	Trash racks are fastened in place and properly maintained.
	M	Trash racks are in place but are unfastened or have bent bars that allow debris to enter into the pipe or pump station. Repair or replacement is required.
	U	Trash rack is missing, damaged, not operational, or deficiencies will inhibit operations during the next flood event.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Trash Rakes	A	Drive chain, bearings, gear reducers, and other components are in good operating condition and are being properly maintained.
	M	The trash rake is in need of maintenance but is still operational.
	U	Trash rake is not operational, or deficiencies will inhibit operations during the next flood event.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Sluice / Slide Gates	A	Gates open and close freely with minor leakage. Sill is free of sediment and other obstructions. Gates and lifters have been maintained.
	M	Gates have been damaged, have deteriorated, or open or close with resistance or binding. Leakage quantity is controllable and is not a threat to project performance. Maintenance is required.
	U	Gates do not open or close. Gate, stem, lifter, and/or guides are damaged or corroded.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Electric Gate Operators	A	All electric gate operators are in good working condition, are adequately powered, and are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
	M	All electric gate operators are operational with minor deficiencies but should perform through the next period of usage.
	U	The electric gate operators are not operational, or the power source is not considered reliable to sustain operations during flood conditions.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Manual Gate Operators	A	All manual gate operators are in good working condition, are capable of opening and closing the gate properly. Preventative maintenance is being performed and the system is tested periodically.
	M	Manual gate operators are operational with minor deficiencies but should perform through the next period of usage.
	U	Manual gate operators are not operational.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Other Metallic Items	A	All metal parts are protected from corrosion damage and show no rust or deterioration that would cause a safety concern.
	M	Corrosion seen on metallic parts (except equipment anchors) appears maintainable.
	U	Metallic parts are severely corroded and require replacement to prevent failure, equipment damage, or safety issues.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Flap Gates	A	Flap gates open and close easily with minimal leakage. Gates show no corrosion damage and have been maintained.
	M	Gates will not fully open or close because of obstructions that can be easily removed or have corrosion damage that requires maintenance.
	U	Gate is missing, has been damaged, or has deteriorated and needs repair.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Closure Structures	A	Closure structure in good repair. Placing equipment, stoplogs, and other materials are readily available at all times. Components of closure clearly marked and installation instructions / procedures readily available.
	U	Closure structure in poor condition. Parts missing or corroded. Placing equipment may not be available within normal warning time.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Security Fencing	A	Safety / security fencing is good condition and provides protection against falling or unauthorized access. Gates open and close freely, locks are in place, and there is little corrosion on metal parts.
	M	Safety / security fencing or gates are damaged or corroded but appear to be maintainable. Locks may be missing or damaged.
	U	Safety / security fencing and gates are damaged or corroded to the point that replacement is required, or potentially dangerous project features are not secured.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Intake and Discharge Pipes	A	There are no breaks, holes, corrosion, or cracks in the pipe that would result in significant water leakage. The pipe shape is essentially circular. All joints appear to be closed and the soil tight.
	M	A pipe is slightly leaking but DOES NOT threaten stability of anything nor cause any damage. A pipe is ovalized in some locations but does not appear to be approaching a curvature reversal. Pipe needs repair prior to next inspection.
	U	Pipe has deterioration and/or significant leakage, is in danger of collapsing, or has already collapsed. Immediate repair or replacement required.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.
Pressurized Pipe	A	There is NO evidence of erosion or leakage around or near the pipe. No corrosion on pipe.
	M	There is NO evidence of erosion or leakage around or near the pipe. Very little corrosion on pipe.
	U	ANY evidence of erosion around or near or leaking from the pipe. Corrosion that threatens pipe. Immediate repair required.
	N	This item does not apply to the pumping plant, conditions prevent inspection (e.g. low water, inaccessible location, time constraints), or inspection would cause physical danger or unreasonable cost.

Appendix D: Fall 2009 Levee Maintenance Inspection Summary Reports

Flood Control Project Maintenance
Levee Inspections

Fall 2009 Levee Maintenance Deficiency Summary Report

Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin

LD0001G		Total LMA Miles		12.45									
Levee District No. 0001 (Glenn County)		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		M		Overall LMA Rating		M					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Vegetation	0.97		0.97	7.79	1.05		1.05	8.43	0.08		0.08	0.64	
Trim / Thin Trees	0.11		0.11	0.88	0.11		0.11	0.88				0.00	
Encroachments	0.37		0.37	2.97	0.34		0.34	2.73	-0.03		-0.03	-0.24	
Animal Control	0.74		0.74	5.94	0.42		0.42	3.37	-0.32		-0.32	-2.57	
<i>LMA Totals:</i>	2.19	0.00	2.19	17.59	1.92	0.00	1.92	15.42	-0.27	0.00	-0.27	-2.17	
LD0001S		Total LMA Miles		16.65									
Levee District No. 0001 (Sutter County)		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		A		Overall LMA Rating		A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
No Items												0.00	
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
LD0002		Total LMA Miles		4.89									
Levee District No. 0002 (Glenn County)		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		A		Overall LMA Rating		A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Animal Control					0.13		0.13	2.66	0.13		0.13	2.66	
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.13	0.00	0.13	2.66	0.13	0.00	0.13	2.66	
LD0003		Total LMA Miles		12.24									
Levee District No. 0003 (Glenn County)		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		A		Overall LMA Rating		A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Trim / Thin Trees					0.01		0.01	0.08	0.01		0.01	0.08	
Encroachments	0.01		0.01	0.08	0.02		0.02	0.16	0.01		0.01	0.08	
Animal Control	0.66		0.66	5.39	0.16		0.16	1.31	-0.50		-0.50	-4.09	
Slope Stability	0.03		0.03	0.25	0.02		0.02	0.16	-0.01		-0.01	-0.08	
Crown Surface / Depressions / Rutting	0.04		0.04	0.33					-0.04		-0.04	-0.33	
<i>LMA Totals:</i>	0.74	0.00	0.74	6.05	0.21	0.00	0.21	1.72	-0.53	0.00	-0.53	-4.33	
LD0009		Total LMA Miles		6.24									
Levee District No. 0009 (Sutter County)		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		A		Overall LMA Rating		U					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Animal Control	0.01		0.01	0.16	6.56		6.56	105.13	6.55		6.55	104.97	
Erosion / Bank Caving	0.07		0.07	1.12	0.07		0.07	1.12				0.00	
<i>LMA Totals:</i>	0.08	0.00	0.08	1.28	6.63	0.00	6.63	106.25	6.55	0.00	6.55	104.97	

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin (cont.)

MA0001												
Sutter Maintenance Yard Maintenance Area 0001		Fall 2008				Fall 2009				Change		
Overall LMA Rating		M		Overall LMA Rating		A						
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.01		0.01	0.06	0.02		0.02	0.12	0.01		0.01	0.06
Trim / Thin Trees	0.05		0.05	0.29	0.03		0.03	0.18	-0.02		-0.02	-0.12
Encroachments	0.06		0.06	0.35	0.02		0.02	0.12	-0.04		-0.04	-0.23
Animal Control	1.90		1.90	11.11	1.61		1.61	9.40	-0.29		-0.29	-1.71
Erosion / Bank Caving	0.01		0.01	0.06	0.01		0.01	0.06				0.00
<i>LMA Totals:</i>	2.03	0.00	2.03	11.87	1.69	0.00	1.69	9.87	-0.34	0.00	-0.34	-2.00

MA0003												
Sutter Maintenance Yard Maintenance Area 0003		Fall 2008				Fall 2009				Change		
Overall LMA Rating		A		Overall LMA Rating		A						
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.12		0.12	2.31					-0.12		-0.12	-2.31
Animal Control	0.01		0.01	0.19	0.01		0.01	0.19				0.00
<i>LMA Totals:</i>	0.13	0.00	0.13	2.50	0.01	0.00	0.01	0.19	-0.12	0.00	-0.12	-2.31

MA0004												
Sacramento Maintenance Yard Maintenance Area 0004		Fall 2008				Fall 2009				Change		
Overall LMA Rating		A		Overall LMA Rating		A						
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Trim / Thin Trees					0.16		0.16	4.71	0.16		0.16	4.71
Animal Control	0.01		0.01	0.29					-0.01		-0.01	-0.29
<i>LMA Totals:</i>	0.01	0.00	0.01	0.29	0.16	0.00	0.16	4.71	0.15	0.00	0.15	4.41

MA0005												
Sutter Maintenance Yard Maintenance Area 0005		Fall 2008				Fall 2009				Change		
Overall LMA Rating		M *		Overall LMA Rating		M *						
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.10		0.10	0.30	0.02		0.02	0.06	-0.08		-0.08	-0.24
Trim / Thin Trees	0.20		0.20	0.60					-0.20		-0.20	-0.60
Encroachments	0.05		0.05	0.15	0.04		0.04	0.12	-0.01		-0.01	-0.03
Animal Control	0.37		0.37	1.11	0.16		0.16	0.48	-0.21		-0.21	-0.63
Slope Stability	0.02		0.02	0.06	0.03		0.03	0.09	0.01		0.01	0.03
Repair Gates	0.01		0.01	0.03	0.01		0.01	0.03				0.00
USACE Erosion Survey		0.01	0.04	0.12		0.01	0.04	0.12				0.00
<i>LMA Totals:</i>	0.75	0.01	0.79	2.37*	0.26	0.01	0.30	0.90*	-0.49	0.00	-0.49	-1.46

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin (cont.)

MA0007	Total LMA Miles		12.07									
Sutter Maintenance Yard Maintenance Area 0007	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			A				A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.02		0.02	0.17	0.01		0.01	0.08	-0.01		-0.01	-0.08
Animal Control	0.03		0.03	0.25					-0.03		-0.03	-0.25
Erosion / Bank Caving	0.07		0.07	0.58	0.02		0.02	0.17	-0.05		-0.05	-0.41
<i>LMA Totals:</i>	0.12	0.00	0.12	0.99	0.03	0.00	0.03	0.25	-0.09	0.00	-0.09	-0.74

MA0009	Total LMA Miles		19.61									
Sacramento Maintenance Yard Maintenance Area 0009	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			M *				M					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.15		0.15	0.77	0.14		0.14	0.71	-0.01		-0.01	-0.05
Trim / Thin Trees	0.17		0.17	0.87	0.04		0.04	0.20	-0.13		-0.13	-0.66
Encroachments	0.05		0.05	0.26	1.81		1.81	9.23	1.76		1.76	8.98
Animal Control	0.01		0.01	0.05	0.06		0.06	0.31	0.05		0.05	0.26
Erosion / Bank Caving					0.01		0.01	0.05	0.01		0.01	0.05
USACE Erosion Survey		0.04	0.16	0.82		0.04	0.16	0.82				0.00
<i>LMA Totals:</i>	0.38	0.04	0.54	2.76*	2.06	0.04	2.22	11.32	1.68	0.00	1.68	8.57

MA0012	Total LMA Miles		11.31									
Sutter Maintenance Yard Maintenance Area 0012	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			A				A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.02		0.02	0.18					-0.02		-0.02	-0.18
<i>LMA Totals:</i>	0.02	0.00	0.02	0.18	0.00	0.00	0.00	0.00	-0.02	0.00	-0.02	-0.18

MA0013	Total LMA Miles		41.97									
Sutter Maintenance Yard Maintenance Area 0013	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			M *				M *					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.07		0.07	0.17					-0.07		-0.07	-0.17
Trim / Thin Trees	0.26		0.26	0.62					-0.26		-0.26	-0.62
Encroachments	0.55		0.55	1.31	0.18		0.18	0.43	-0.37		-0.37	-0.88
Animal Control	0.01		0.01	0.02					-0.01		-0.01	-0.02
Erosion / Bank Caving	0.17	0.36	1.61	3.83	0.46	0.36	1.90	4.53	0.29		0.29	0.69
USACE Erosion Survey	0.37		0.37	0.88	0.36		0.36	0.86	-0.01		-0.01	-0.02
<i>LMA Totals:</i>	1.43	0.36	2.87	6.83*	1.00	0.36	2.44	5.81*	-0.43	0.00	-0.43	-1.02

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Sacramento River Basin (cont.)

MA0016	Total LMA Miles		4.09									
Sutter Maintenance Yard Maintenance Area 0016	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.33		0.33	8.05					-0.33		-0.33	-8.05
Encroachments	0.02		0.02	0.49					-0.02		-0.02	-0.49
Animal Control	0.25		0.25	6.10					-0.25		-0.25	-6.10
<i>LMA Totals:</i>	0.60	0.00	0.60	14.63	0.00	0.00	0.00	0.00	-0.60	0.00	-0.60	-14.63
NA0001	Total LMA Miles		33.24									
American River Flood Control District	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation					0.08		0.08	0.24	0.08		0.08	0.24
Encroachments	0.02		0.02	0.06	0.28		0.28	0.84	0.26		0.26	0.79
Animal Control					0.32		0.32	0.96	0.32		0.32	0.96
Slope Stability					0.02		0.02	0.06	0.02		0.02	0.06
<i>LMA Totals:</i>	0.02	0.00	0.02	0.06	0.70	0.00	0.70	2.11	0.68	0.00	0.68	2.05
NA0002	Total LMA Miles		19.32									
Brannan Andrus Levee Maintenance District	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.78	0.57	3.06	15.85					-0.78	-0.57	-3.06	-15.85
Trim / Thin Trees	0.61	0.44	2.37	12.28	0.49		0.49	2.54	-0.12	-0.44	-1.88	-9.74
Encroachments	0.02		0.02	0.10					-0.02		-0.02	-0.10
USACE Erosion Survey		0.01	0.04	0.21						-0.01	-0.04	-0.21
<i>LMA Totals:</i>	1.41	1.02	5.49	28.45	0.49	0.00	0.49	2.54	-0.92	-1.02	-5.00	-25.91
NA0003	Total LMA Miles		24.71									
Butte County Public Works	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.01		0.01	0.04					-0.01		-0.01	-0.04
Encroachments	0.41		0.41	1.66	0.09		0.09	0.36	-0.32		-0.32	-1.29
Animal Control	0.05		0.05	0.20	0.09		0.09	0.36	0.04		0.04	0.16
Slope Stability	0.01		0.01	0.04	0.01		0.01	0.04				0.00
<i>LMA Totals:</i>	0.48	0.00	0.48	1.94	0.19	0.00	0.19	0.77	-0.29	0.00	-0.29	-1.17
NA0004	Total LMA Miles		11.38									
Marysville Levee Commission	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation					0.48		0.48	4.22	0.48		0.48	4.22
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.48	0.00	0.48	4.22	0.48	0.00	0.48	4.22

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin (cont.)

NA0005		Total LMA Miles		3.63									
City of Sacramento		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		A		Overall LMA Rating		A					
Rated Item		M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		0.01		0.01	0.28	0.01		0.01	0.28				0.00
Encroachments						0.01		0.01	0.28	0.01		0.01	0.28
<i>LMA Totals:</i>		0.01	0.00	0.01	0.28	0.02	0.00	0.02	0.55	0.01	0.00	0.01	0.27
NA0006		Total LMA Miles		1.50									
Sutter Maintenance Yard Eastern Honcut Creek		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		U		Overall LMA Rating		U					
Rated Item		M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		2.96		2.96	197.33	2.87		2.87	191.33	-0.09		-0.09	-6.00
Crown Surface / Depressions / Rutting		0.73		0.73	48.67	0.67	1.39	6.23	415.33	-0.06	1.39	5.50	366.67
<i>LMA Totals:</i>		3.69	0.00	3.69	246.00	3.54	1.39	9.10	606.67	-0.15	1.39	5.41	360.67
NA0008		Total LMA Miles		12.57									
Knights Landing Ridge Drainage District		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		M		Overall LMA Rating		U					
Rated Item		M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		0.08		0.08	0.64	0.44		0.44	3.50	0.36		0.36	2.87
Trim / Thin Trees		0.01		0.01	0.08	0.01		0.01	0.08				0.00
Encroachments		0.01		0.01	0.08	0.24		0.24	1.91	0.23		0.23	1.83
Animal Control		0.05		0.05	0.40	0.06		0.06	0.48	0.01		0.01	0.08
USACE Erosion Survey		2.27		2.27	18.02	2.20		2.20	17.50	-0.07		-0.07	-0.51
<i>LMA Totals:</i>		2.42	0.00	2.42	19.21	2.95	0.00	2.95	23.47	0.53	0.00	0.53	4.26
NA0012		Total LMA Miles		0.59									
Solano County Public Works Mellin Levee		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		U		Overall LMA Rating		M					
Rated Item		M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		0.59		0.59	100.00	0.10		0.10	16.95	-0.49		-0.49	-83.05
Encroachments		0.02		0.02	3.39					-0.02		-0.02	-3.39
Slope Stability		0.01		0.01	1.70					-0.01		-0.01	-1.70
Crown Surface / Depressions / Rutting		0.31		0.31	52.54					-0.31		-0.31	-52.54
<i>LMA Totals:</i>		0.93	0.00	0.93	157.63	0.10	0.00	0.10	16.95	-0.83	0.00	-0.83	-140.68
NA0014		Total LMA Miles		0.78									
Murphy Slough at M&T Ranch		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		U		Overall LMA Rating		U					
Rated Item		M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		1.30		1.30	166.67	1.56		1.56	200.00	0.26		0.26	33.33
Trim / Thin Trees		0.62		0.62	79.49	0.75		0.75	96.15	0.13		0.13	16.67
<i>LMA Totals:</i>		1.92	0.00	1.92	246.15	2.31	0.00	2.31	296.15	0.39	0.00	0.39	50.00

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin (cont.)

NA0016	Total LMA Miles		50.21									
Sacramento River West Side Levee District	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M *				M *							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.05		0.05	0.10	0.05		0.05	0.10				0.00
Trim / Thin Trees	0.04		0.04	0.08	0.03		0.03	0.06	-0.01		-0.01	-0.02
Encroachments	0.05		0.05	0.10	0.09		0.09	0.18	0.04		0.04	0.08
Animal Control	0.15		0.15	0.30	0.17		0.17	0.34	0.02		0.02	0.04
USACE Erosion Survey		0.04	0.16	0.32		0.04	0.16	0.32				0.00
<i>LMA Totals:</i>	0.29	0.04	0.45	0.90*	0.34	0.04	0.50	1.00*	0.05	0.00	0.05	0.10

NA0018	Total LMA Miles		0.30									
California Department of Fish and Game Shea Levee	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
No Items												0.00
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

NA0019	Total LMA Miles		13.64									
Tehama County Flood Control and Water Conservation District	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M				M							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.66		0.66	4.84	0.72		0.72	5.28	0.06		0.06	0.44
Trim / Thin Trees	0.14		0.14	1.03	0.14		0.14	1.03				0.00
Encroachments	0.65		0.65	4.77	0.52		0.52	3.81	-0.13		-0.13	-0.95
Animal Control	0.01		0.01	0.07	0.01		0.01	0.07				0.00
Slope Stability	0.25		0.25	1.83	0.28		0.28	2.05	0.03		0.03	0.22
Erosion / Bank Caving	0.01		0.01	0.07	0.02		0.02	0.15	0.01		0.01	0.07
USACE Erosion Survey	0.07		0.07	0.51	0.01		0.01	0.07	-0.06		-0.06	-0.44
<i>LMA Totals:</i>	1.79	0.00	1.79	13.12	1.70	0.00	1.70	12.46	-0.09	0.00	-0.09	-0.66

NA0020	Total LMA Miles		4.76									
Sutter Maintenance Yard East-West Interceptor	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				U							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	3.17		3.17	66.60	3.17		3.17	66.60				0.00
Trim / Thin Trees	0.24		0.24	5.04					-0.24		-0.24	-5.04
Encroachments	0.16		0.16	3.36	0.12		0.12	2.52	-0.04		-0.04	-0.84
Erosion / Bank Caving	0.43		0.43	9.03	0.43		0.43	9.03				0.00
<i>LMA Totals:</i>	4.00	0.00	4.00	84.03	3.72	0.00	3.72	78.15	-0.28	0.00	-0.28	-5.88

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NA0021		Total LMA Miles		0.29									
Yolo County Public Works		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		M		Overall LMA Rating		U					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Vegetation					0.84		0.84	289.66	0.84		0.84	289.66	
Trim / Thin Trees	0.05		0.05	17.24	0.09		0.09	31.03	0.04		0.04	13.79	
Encroachments					0.01		0.01	3.45	0.01		0.01	3.45	
<i>LMA Totals:</i>	0.05	0.00	0.05	17.24	0.94	0.00	0.94	324.14	0.89	0.00	0.89	306.90	
NA0022		Total LMA Miles		5.97									
Yolo County Service Area 6		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		M		Overall LMA Rating		A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Vegetation	0.56		0.56	9.38	0.44		0.44	7.37	-0.12		-0.12	-2.01	
Trim / Thin Trees	0.01		0.01	0.17	0.02		0.02	0.34	0.01		0.01	0.17	
Encroachments	0.05		0.05	0.84	0.06		0.06	1.01	0.01		0.01	0.17	
Animal Control					0.03		0.03	0.50	0.03		0.03	0.50	
<i>LMA Totals:</i>	0.62	0.00	0.62	10.39	0.55	0.00	0.55	9.21	-0.07	0.00	-0.07	-1.17	
RD0003		Total LMA Miles		28.65									
Reclamation District No. 0003 Grand Island		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		U		Overall LMA Rating		M *					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Vegetation	35.38		35.38	123.71		0.01	0.04	0.14	-35.38	0.01	-35.34	-123.57	
Trim / Thin Trees	3.94	0.64	6.50	22.73	0.55	0.11	0.99	3.46	-3.39	-0.53	-5.51	-19.27	
Encroachments	0.17		0.17	0.59	0.01		0.01	0.04	-0.16		-0.16	-0.56	
Slope Stability	0.06		0.06	0.21					-0.06		-0.06	-0.21	
Repair Gates	0.01		0.01	0.04					-0.01		-0.01	-0.04	
USACE Erosion Survey	0.29		0.29	1.01	0.29		0.29	1.01				0.00	
<i>LMA Totals:</i>	39.85	0.64	42.41	148.29	0.85	0.12	1.33	4.64*	-39.00	-0.52	-41.08	-143.64	
RD0010		Total LMA Miles		21.93									
Reclamation District No. 0010 Honcut		Fall 2008				Fall 2009				Change			
		Overall LMA Rating		U		Overall LMA Rating		A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	
Vegetation	24.02		24.02	109.68	0.44		0.44	2.01	-23.58		-23.58	-107.67	
Trim / Thin Trees	0.05		0.05	0.23	0.04		0.04	0.18	-0.01		-0.01	-0.05	
Encroachments	0.02	0.12	0.50	2.28	0.03		0.03	0.14	0.01	-0.12	-0.47	-2.15	
Animal Control	0.03		0.03	0.14	0.08		0.08	0.37	0.05		0.05	0.23	
Culverts: Inlets / Outlets	0.01		0.01	0.05					-0.01		-0.01	-0.05	
<i>LMA Totals:</i>	24.13	0.12	24.61	112.37	0.59	0.00	0.59	2.69	-23.54	-0.12	-24.02	-109.68	

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RD0070	Total LMA Miles		23.57									
Reclamation District No. 0070 Meridian	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			A				A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.07		0.07	0.30					-0.07		-0.07	-0.30
USACE Erosion Survey	0.29		0.29	1.23	0.29		0.29	1.23				0.00
<i>LMA Totals:</i>	0.36	0.00	0.36	1.53	0.29	0.00	0.29	1.23	-0.07	0.00	-0.07	-0.30

RD0108	Total LMA Miles		20.59									
Reclamation District No. 0108 River Farms	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			A				A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.02		0.02	0.10	0.02		0.02	0.10				0.00
Trim / Thin Trees					0.89		0.89	4.32	0.89		0.89	4.32
Animal Control	0.02		0.02	0.10	0.06		0.06	0.29	0.04		0.04	0.19
Cracking					0.03		0.03	0.15	0.03		0.03	0.15
<i>LMA Totals:</i>	0.04	0.00	0.04	0.19	1.00	0.00	1.00	4.86	0.96	0.00	0.96	4.66

RD0150	Total LMA Miles		18.07									
Reclamation District No. 0150 Merrit Island	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			M *				M					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.22		0.22	1.22	0.19		0.19	1.05	-0.03		-0.03	-0.17
Trim / Thin Trees	0.53		0.53	2.93	0.37		0.37	2.05	-0.16		-0.16	-0.89
Encroachments	0.13		0.13	0.72	0.30		0.30	1.66	0.17		0.17	0.94
Animal Control	0.20		0.20	1.11	0.05		0.05	0.28	-0.15		-0.15	-0.83
Slope Stability	0.03		0.03	0.17	0.08		0.08	0.44	0.05		0.05	0.28
Erosion / Bank Caving	0.08		0.08	0.44	0.14		0.14	0.78	0.06		0.06	0.33
Crown Surface / Depressions / Rutting	0.01		0.01	0.06	0.43		0.43	2.38	0.42		0.42	2.33
Metal Pipes					0.01		0.01	0.06	0.01		0.01	0.06
USACE Erosion Survey	0.03	0.09	0.39	2.16	0.03	0.09	0.39	2.16				0.00
<i>LMA Totals:</i>	1.23	0.09	1.59	8.80*	1.60	0.09	1.96	10.85	0.37	0.00	0.37	2.05

RD0307	Total LMA Miles		6.65									
Reclamation District No. 0307 Lisbon	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			U				U					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.33	1.94	9.09	135.67	4.71	0.81	7.95	119.55	3.38	-1.13	-1.14	-16.12
Trim / Thin Trees	3.98	1.10	8.38	125.07	3.86	0.70	6.66	100.15	-0.12	-0.40	-1.72	-24.92
Encroachments	0.07	0.03	0.19	2.84	0.06	0.02	0.14	2.11	-0.01	-0.01	-0.05	-0.73
Animal Control	0.06		0.06	0.90	0.06		0.06	0.90				0.01
USACE Erosion Survey		0.01	0.04	0.60		0.01	0.04	0.60				0.00
<i>LMA Totals:</i>	5.44	3.08	17.76	265.07	8.69	1.54	14.85	223.31	3.25	-1.54	-2.91	-41.77

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RD0341	Total LMA Miles		9.62									
Reclamation District No. 0341 Sherman Island	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.96	3.06	14.20	146.39					-1.96	-3.06	-14.20	-146.39
Encroachments	0.15		0.15	1.55					-0.15		-0.15	-1.55
<i>LMA Totals:</i>	2.11	3.06	14.35	147.94	0.00	0.00	0.00	0.00	-2.11	-3.06	-14.35	-147.94

RD0349	Total LMA Miles		12.49									
Reclamation District No. 0349 Sutter Island	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	9.39	0.20	10.19	80.87	1.52		1.52	12.17	-7.87	-0.20	-8.67	-68.70
Trim / Thin Trees	0.54		0.54	4.29	0.99		0.99	7.93	0.45		0.45	3.64
Encroachments	0.22	0.04	0.38	3.02	0.15	0.02	0.23	1.84	-0.07	-0.02	-0.15	-1.17
USACE Erosion Survey	0.03	0.11	0.47	3.73	0.03	0.11	0.47	3.76				0.03
<i>LMA Totals:</i>	10.18	0.35	11.58	91.90	2.69	0.13	3.21	25.70	-7.49	-0.22	-8.37	-66.20

RD0369	Total LMA Miles		0.80									
Reclamation District No. 0369 Libby McNeil	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.16	0.22	1.04	130.00					-0.16	-0.22	-1.04	-130.00
Trim / Thin Trees	0.21	0.08	0.53	66.25					-0.21	-0.08	-0.53	-66.25
<i>LMA Totals:</i>	0.37	0.30	1.57	196.25	0.00	0.00	0.00	0.00	-0.37	-0.30	-1.57	-196.25

RD0501	Total LMA Miles		20.48									
Reclamation District No. 0501 Ryer Island	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	16.03	2.00	24.03	117.22	5.12	1.80	12.32	60.16	-10.91	-0.20	-11.71	-57.06
Trim / Thin Trees	0.78	1.13	5.30	25.85	1.31	0.32	2.59	12.65	0.53	-0.81	-2.71	-13.21
Encroachments	0.01	0.03	0.13	0.63	0.01		0.01	0.05		-0.03	-0.12	-0.59
Animal Control	3.30		3.30	16.10	3.30		3.30	16.11				0.01
Erosion / Bank Caving	0.06		0.06	0.29	0.06		0.06	0.29				0.00
Cracking	0.29	0.33	1.61	7.85	1.30	0.34	2.66	12.99	1.01	0.01	1.05	5.13
Crown Surface / Depressions / Rutting	0.18		0.18	0.88	0.18		0.18	0.88				0.00
USACE Erosion Survey	0.11	0.01	0.15	0.73	0.11	0.01	0.15	0.73				0.00
<i>LMA Totals:</i>	20.76	3.50	34.76	169.56	11.39	2.47	21.27	103.86	-9.37	-1.03	-13.49	-65.70

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RD0536	Total LMA Miles		10.63									
Reclamation District No. 0536 Egbert	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				U							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	11.54	4.41	29.18	272.71	8.43		8.43	79.30	-3.11	-4.41	-20.75	-193.41
Trim / Thin Trees	0.08		0.08	0.75	0.08		0.08	0.75				0.01
Encroachments					0.01		0.01	0.09	0.01		0.01	0.09
Erosion / Bank Caving	0.01		0.01	0.09	0.01		0.01	0.09				0.00
Crown Surface / Depressions / Rutting	4.78	0.67	7.46	69.72	2.05		2.05	19.29	-2.73	-0.67	-5.41	-50.43
<i>LMA Totals:</i>	16.41	5.08	36.73	343.27	10.58	0.00	10.58	99.53	-5.83	-5.08	-26.15	-243.74

RD0537	Total LMA Miles		5.95									
Reclamation District No. 0537 Lovdal	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				M							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.37		0.37	6.17	0.69		0.69	11.60	0.32		0.32	5.43
Trim / Thin Trees					0.02		0.02	0.34	0.02		0.02	0.34
Erosion / Bank Caving					0.01		0.01	0.17	0.01		0.01	0.17
USACE Erosion Survey	0.01		0.01	0.17	0.01		0.01	0.17				0.00
<i>LMA Totals:</i>	0.38	0.00	0.38	6.33	0.73	0.00	0.73	12.27	0.35	0.00	0.35	5.94

RD0551	Total LMA Miles		6.84									
Reclamation District No. 0551 Pierson	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.99	0.14	1.55	22.79					-0.99	-0.14	-1.55	-22.79
Trim / Thin Trees	0.07		0.07	1.03					-0.07		-0.07	-1.03
Encroachments	0.25	0.03	0.37	5.44	0.03		0.03	0.44	-0.22	-0.03	-0.34	-5.00
Animal Control	1.17		1.17	17.21					-1.17		-1.17	-17.21
<i>LMA Totals:</i>	2.48	0.17	3.16	46.47	0.03	0.00	0.03	0.44	-2.45	-0.17	-3.13	-46.03

RD0554	Total LMA Miles		1.09									
Reclamation District No. 0554 Walnut Grove	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				U							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.01	0.83	3.33	277.50	0.34		0.34	31.19	0.33	-0.83	-2.99	-246.31
Trim / Thin Trees	0.04	0.14	0.60	50.00					-0.04	-0.14	-0.60	-50.00
Encroachments		0.02	0.08	6.67						-0.02	-0.08	-6.67
<i>LMA Totals:</i>	0.05	0.99	4.01	334.17	0.34	0.00	0.34	31.19	0.29	-0.99	-3.67	-302.97

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RD0556		Total LMA Miles		11.19													
Reclamation District No. 0556 Upper Andrus		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	7.40	5.76	30.44	271.79	14.44	8.30	47.64	425.74	7.04	2.54	17.20	153.95					
Trim / Thin Trees	0.48	0.89	4.04	36.07	0.05	0.25	1.05	9.38	-0.43	-0.64	-2.99	-26.69					
Encroachments	0.05	0.03	0.17	1.52	0.06	0.03	0.18	1.61	0.01		0.01	0.09					
Animal Control					5.29		5.29	47.27	5.29		5.29	47.27					
Slope Stability		0.29	1.16	10.36		0.29	1.16	10.37				0.01					
Erosion / Bank Caving					0.01		0.01	0.09	0.01		0.01	0.09					
Cracking					0.61		0.61	5.45	0.61		0.61	5.45					
USACE Erosion Survey	0.37	0.20	1.17	10.45	0.37	0.14	0.93	8.31		-0.06	-0.24	-2.14					
<i>LMA Totals:</i>	8.30	7.17	36.98	330.18	20.83	9.01	56.87	508.22	12.53	1.84	19.89	178.04					

RD0563		Total LMA Miles		12.38													
Reclamation District No. 0563 Tyler Island		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	18.99	0.60	21.39	172.50	0.10	1.31	5.34	43.13	-18.89	0.71	-16.05	-129.37					
Trim / Thin Trees	0.60	0.32	1.88	15.16	0.17	0.08	0.49	3.96	-0.43	-0.24	-1.39	-11.20					
Encroachments	1.98	0.02	2.06	16.61	1.02		1.02	8.24	-0.96	-0.02	-1.04	-8.37					
Slope Stability		0.01	0.04	0.32		0.01	0.04	0.32				0.00					
Erosion / Bank Caving					0.01	0.04	0.04	0.32		0.01	0.04	0.32					
Crown Surface / Depressions / Rutting					0.49		0.49	3.96	0.49		0.49	3.96					
USACE Erosion Survey	2.10	0.51	4.14	33.39	1.87	0.51	3.91	31.58	-0.23		-0.23	-1.80					
<i>LMA Totals:</i>	23.67	1.46	29.51	237.98	3.65	1.92	11.33	91.52	-20.02	0.46	-18.18	-146.47					

RD0755		Total LMA Miles		1.86													
Reclamation District No. 0755 Randall		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		A									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.36		0.36	18.95					-0.36		-0.36	-18.95					
Trim / Thin Trees	0.01		0.01	0.53					-0.01		-0.01	-0.53					
Encroachments	0.01	0.01	0.05	2.63					-0.01	-0.01	-0.05	-2.63					
Animal Control	0.06		0.06	3.16	0.04		0.04	2.15	-0.02		-0.02	-1.01					
Slope Stability	0.04		0.04	2.11					-0.04		-0.04	-2.11					
Crown Surface / Depressions / Rutting	0.01		0.01	0.53					-0.01		-0.01	-0.53					
<i>LMA Totals:</i>	0.49	0.01	0.53	27.89	0.04	0.00	0.04	2.15	-0.45	-0.01	-0.49	-25.74					

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Sacramento River Basin (cont.)

RD0765	Total LMA Miles		1.74									
Reclamation District No. 0765 Glide	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.07	0.24	1.03	60.59	0.11		0.11	6.32	0.04	-0.24	-0.92	-54.27
Trim / Thin Trees	0.53	0.14	1.09	64.12	0.49	0.05	0.69	39.66	-0.04	-0.09	-0.40	-24.46
Encroachments	0.01		0.01	0.59	0.01		0.01	0.58				-0.01
<i>LMA Totals:</i>	0.61	0.38	2.13	125.29	0.61	0.05	0.81	46.55	0.00	-0.33	-1.32	-78.74
RD0784	Total LMA Miles		38.43									
Reclamation District No. 0784 Plumas Lake	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.71		0.71	2.02	0.32		0.32	0.83	-0.39		-0.39	-1.18
Erosion / Bank Caving	0.03		0.03	0.09					-0.03		-0.03	-0.09
<i>LMA Totals:</i>	0.74	0.00	0.74	2.10	0.32	0.00	0.32	0.83	-0.42	0.00	-0.42	-1.27
RD0785	Total LMA Miles		5.61									
Reclamation District No. 0785 Driver	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.15		0.15	2.68	0.59		0.59	10.52	0.44		0.44	7.84
Encroachments					0.01		0.01	0.18	0.01		0.01	0.18
Crown Surface / Depressions / Rutting					0.05		0.05	0.89	0.05		0.05	0.89
<i>LMA Totals:</i>	0.15	0.00	0.15	2.68	0.65	0.00	0.65	11.59	0.50	0.00	0.50	8.91
RD0787	Total LMA Miles		4.40									
Reclamation District No. 0787 Fair	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.04		0.04	0.91					-0.04		-0.04	-0.91
<i>LMA Totals:</i>	0.04	0.00	0.04	0.91	0.00	0.00	0.00	0.00	-0.04	0.00	-0.04	-0.91
RD0817	Total LMA Miles		9.19									
Reclamation District No. 0817 Carlin	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.11		0.11	1.20	0.09		0.09	0.98	-0.02		-0.02	-0.22
Encroachments	0.01		0.01	0.11					-0.01		-0.01	-0.11
Crown Surface / Depressions / Rutting	0.23		0.23	2.50	0.17		0.17	1.85	-0.06		-0.06	-0.65
<i>LMA Totals:</i>	0.35	0.00	0.35	3.80	0.26	0.00	0.26	2.83	-0.09	0.00	-0.09	-0.98

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Sacramento River Basin (cont.)

RD0827	Total LMA Miles		4.19									
Reclamation District No. 0827 Elkhorn	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.47		0.47	11.19	0.18		0.18	4.30	-0.29		-0.29	-6.89
Trim / Thin Trees	0.13		0.13	3.10	0.13		0.13	3.10				0.01
Animal Control	0.02		0.02	0.48					-0.02		-0.02	-0.48
<i>LMA Totals:</i>	0.62	0.00	0.62	14.76	0.31	0.00	0.31	7.40	-0.31	0.00	-0.31	-7.36
RD0900	Total LMA Miles		13.57									
Reclamation District No. 0900 West Sacramento	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				M							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	4.09	0.64	6.65	48.90	0.76	0.01	0.80	5.90	-3.33	-0.63	-5.85	-43.00
Trim / Thin Trees	1.27	0.12	1.75	12.87	0.68		0.68	5.01	-0.59	-0.12	-1.07	-7.86
Encroachments	0.02		0.02	0.15	0.01		0.01	0.07	-0.01		-0.01	-0.07
Animal Control	0.29		0.29	2.13					-0.29		-0.29	-2.13
Cracking	0.02		0.02	0.15	0.01		0.01	0.07	-0.01		-0.01	-0.07
Crown Surface / Depressions / Rutting	1.64	0.18	2.36	17.35					-1.64	-0.18	-2.36	-17.35
USACE Erosion Survey		0.01	0.04	0.29		0.01	0.04	0.29				0.00
<i>LMA Totals:</i>	7.33	0.95	11.13	81.84	1.46	0.02	1.54	11.35	-5.87	-0.93	-9.59	-70.49
RD0999	Total LMA Miles		32.37									
Reclamation District No. 0999	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	U				U							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.92	0.35	3.32	10.25	0.23	0.04	0.39	1.20	-1.69	-0.31	-2.93	-9.04
Trim / Thin Trees	4.06	1.28	9.18	28.33	3.34	0.23	4.26	13.16	-0.72	-1.05	-4.92	-15.17
Encroachments	0.91		0.91	2.81	1.03		1.03	3.18	0.12		0.12	0.37
Animal Control	1.91		1.91	5.90	1.26		1.26	3.89	-0.65		-0.65	-2.00
Crown Surface / Depressions / Rutting	0.29		0.29	0.90	1.88		1.88	5.81	1.59		1.59	4.91
USACE Erosion Survey	0.02	0.34	1.38	4.26	0.02	0.34	1.38	4.26				0.00
<i>LMA Totals:</i>	9.11	1.97	16.99	52.44	7.76	0.61	10.20	31.51	-1.35	-1.36	-6.79	-20.93
RD1000	Total LMA Miles		42.48									
Reclamation District No. 1000	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.30		1.30	3.05					-1.30		-1.30	-3.05
USACE Erosion Survey	0.13		0.13	0.31	0.13		0.13	0.31				0.00
<i>LMA Totals:</i>	1.43	0.00	1.43	3.36	0.13	0.00	0.13	0.31	-1.30	0.00	-1.30	-3.05

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Sacramento River Basin (cont.)

RD1001	Total LMA Miles		44.03									
Reclamation District No. 1001 Nicolaus	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M				M *							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	5.45		5.45	12.39	0.60		0.60	1.36	-4.85		-4.85	-11.02
Trim / Thin Trees	0.11		0.11	0.25					-0.11		-0.11	-0.25
Encroachments	0.57		0.57	1.30	0.18		0.18	0.41	-0.39		-0.39	-0.89
Animal Control	0.02		0.02	0.05					-0.02		-0.02	-0.05
Slope Stability	0.03		0.03	0.07	0.01		0.01	0.02	-0.02		-0.02	-0.05
Sluice / Slide Gates	0.01		0.01	0.02					-0.01		-0.01	-0.02
USACE Erosion Survey	0.03	0.04	0.19	0.43	0.03	0.04	0.19	0.43				0.00
<i>LMA Totals:</i>	6.22	0.04	6.38	14.50	0.82	0.04	0.98	2.23*	-5.40	0.00	-5.40	-12.27

RD1500	Total LMA Miles		54.35									
Reclamation District No. 1500 Sutter Basin	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M *				M *							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation					0.59		0.59	1.09	0.59		0.59	1.09
Trim / Thin Trees					0.01		0.01	0.02	0.01		0.01	0.02
Encroachments	0.03		0.03	0.06	0.12		0.12	0.22	0.09		0.09	0.17
Animal Control	0.07		0.07	0.13	0.10		0.10	0.18	0.03		0.03	0.06
Erosion / Bank Caving	0.05		0.05	0.09	0.03		0.03	0.06	-0.02		-0.02	-0.04
Crown Surface / Depressions / Rutting					0.01		0.01	0.02	0.01		0.01	0.02
USACE Erosion Survey	0.49	0.47	2.37	4.36	0.49	0.47	2.37	4.36				0.00
<i>LMA Totals:</i>	0.64	0.47	2.52	4.63*	1.35	0.47	3.23	5.94*	0.71	0.00	0.71	1.31

RD1600	Total LMA Miles		14.73									
Reclamation District No. 1600 Mull	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.99		0.99	6.74	0.22		0.22	1.49	-0.77		-0.77	-5.24
Trim / Thin Trees	0.01		0.01	0.07	0.07		0.07	0.48	0.06		0.06	0.41
Encroachments	0.08		0.08	0.54					-0.08		-0.08	-0.54
Animal Control					0.01		0.01	0.07	0.01		0.01	0.07
Erosion / Bank Caving	0.66		0.66	4.49	1.01		1.01	6.86	0.35		0.35	2.37
<i>LMA Totals:</i>	1.74	0.00	1.74	11.84	1.31	0.00	1.31	8.89	-0.43	0.00	-0.43	-2.94

RD1601	Total LMA Miles		2.47									
Reclamation District No. 1601 Twitchell	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Erosion / Bank Caving					0.05		0.05	2.02	0.05		0.05	2.02
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.05	0.00	0.05	2.02	0.05	0.00	0.05	2.02

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Sacramento River Basin (cont.)

RD1660	Total LMA Miles		12.14									
Reclamation District No. 1660 Tisdale	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.01		0.01	0.08	0.01		0.01	0.08				0.00
Animal Control	0.04		0.04	0.33					-0.04		-0.04	-0.33
<i>LMA Totals:</i>	0.05	0.00	0.05	0.41	0.01	0.00	0.01	0.08	-0.04	0.00	-0.04	-0.33
RD2035	Total LMA Miles		12.09									
Reclamation District No. 2035 Conaway	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
USACE Erosion Survey	0.73		0.73	6.03					-0.73		-0.73	-6.03
<i>LMA Totals:</i>	0.73	0.00	0.73	6.03	0.00	0.00	0.00	0.00	-0.73	0.00	-0.73	-6.03
RD2060	Total LMA Miles		15.67									
Reclamation District No. 2060 Hastings	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	2.55		2.55	15.94	0.18		0.18	1.15	-2.37		-2.37	-14.79
Trim / Thin Trees	0.03		0.03	0.19					-0.03		-0.03	-0.19
Erosion / Bank Caving	0.01		0.01	0.06	0.01		0.01	0.06				0.00
Repair Gates		0.02	0.08	0.50					-0.02	-0.08	-0.50	-0.50
USACE Erosion Survey	0.16		0.16	1.00	0.16		0.16	1.02				0.02
<i>LMA Totals:</i>	2.75	0.02	2.83	17.69	0.35	0.00	0.35	2.23	-2.40	-0.02	-2.48	-15.45
RD2068	Total LMA Miles		8.73									
Reclamation District No. 2068 Yolano	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.06		0.06	0.69					-0.06		-0.06	-0.69
<i>LMA Totals:</i>	0.06	0.00	0.06	0.69	0.00	0.00	0.00	0.00	-0.06	0.00	-0.06	-0.69
RD2098	Total LMA Miles		10.96									
Reclamation District No. 2098 Cache and Haas Slough	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	A				A							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.66		0.66	5.99	1.06		1.06	9.67	0.40		0.40	3.68
Erosion / Bank Caving	0.06		0.06	0.54					-0.06		-0.06	-0.54
<i>LMA Totals:</i>	0.72	0.00	0.72	6.53	1.06	0.00	1.06	9.67	0.34	0.00	0.34	3.14

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Sacramento River Basin (cont.)

RD2103	Total LMA Miles		9.77									
Reclamation District No. 2103 Wheatland Vicinity	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments		0.01	0.04	0.41						-0.01	-0.04	-0.41
Animal Control	0.02		0.02	0.20	0.01		0.01	0.10	-0.01		-0.01	-0.10
Crown Surface / Depressions / Rutting	0.74		0.74	7.55					-0.74		-0.74	-7.55
Repair Gates		0.01	0.04	0.41						-0.01	-0.04	-0.41
<i>LMA Totals:</i>	0.76	0.02	0.84	8.57*	0.01	0.00	0.01	0.10	-0.75	-0.02	-0.83	-8.47
RD2104	Total LMA Miles		12.20									
Reclamation District No. 2104 Peters Pocket Tract	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.78	7.01	29.82	402.97	3.78	1.08	8.10	66.39	2.00	-5.93	-21.72	-336.58
Trim / Thin Trees	0.02	0.05	0.22	2.97	0.02	0.05	0.22	1.80				-1.17
Erosion / Bank Caving	0.01		0.01	0.14	0.02		0.02	0.16	0.01		0.01	0.03
Crown Surface / Depressions / Rutting					1.24		1.24	10.16	1.24		1.24	10.16
Repair Gates		0.01	0.04	0.54						-0.01	-0.04	-0.54
<i>LMA Totals:</i>	1.81	7.07	30.09	406.62	5.06	1.13	9.58	78.52	3.25	-5.94	-20.51	-328.10
ST0001	Total LMA Miles		25.52									
Sacramento Maintenance Yard Cache Creek	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.02		0.02	0.08	0.02		0.02	0.08				0.00
Encroachments	0.11		0.11	0.43	0.28		0.28	1.10	0.17		0.17	0.67
USACE Erosion Survey		0.28	1.12	4.34		0.28	1.12	4.39				0.05
<i>LMA Totals:</i>	0.13	0.28	1.25	4.84*	0.30	0.28	1.42	5.56*	0.17	0.00	0.17	0.72
ST0002	Total LMA Miles		22.12									
Sutter Maintenance Yard East Levee Sutter Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.07		0.07	0.31	0.06		0.06	0.27	-0.01		-0.01	-0.04
<i>LMA Totals:</i>	0.07	0.00	0.07	0.31	0.06	0.00	0.06	0.27	-0.01	0.00	-0.01	-0.04

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Sacramento River Basin (cont.)

ST0003	Total LMA Miles		27.17									
Sutter Maintenance Yard East Levee Sacramento River	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.55		0.55	2.02	0.02		0.02	0.07	-0.53		-0.53	-1.94
Trim / Thin Trees	0.44		0.44	1.61	0.01		0.01	0.04	-0.43		-0.43	-1.58
Encroachments	0.26		0.26	0.95	0.19		0.19	0.70	-0.07		-0.07	-0.25
Animal Control	1.30		1.30	4.76	0.86		0.86	3.17	-0.44		-0.44	-1.60
Slope Stability	0.02		0.02	0.07					-0.02		-0.02	-0.07
<i>LMA Totals:</i>	2.57	0.00	2.57	9.41	1.08	0.00	1.08	3.98	-1.49	0.00	-1.49	-5.44
ST0004	Total LMA Miles		2.00									
Sacramento Maintenance Yard East Levee Yolo Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
No Items												0.00
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ST0005	Total LMA Miles		3.22									
Sutter Maintenance Yard Hamilton Bend	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation					1.47		1.47	45.65	1.47		1.47	45.65
Crown Surface / Depressions / Rutting	1.05		1.05	87.50					-1.05		-1.05	-87.50
<i>LMA Totals:</i>	1.05	0.00	1.05	87.50	1.47	0.00	1.47	45.65	0.42	0.00	0.42	-41.85
ST0006	Total LMA Miles		0.50									
Sutter Maintenance Yard Nelson Bend	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.10		1.10	220.00	1.10		1.10	220.00				0.00
Trim / Thin Trees	0.44		0.44	88.00	0.44		0.44	88.00				0.00
<i>LMA Totals:</i>	1.54	0.00	1.54	308.00	1.54	0.00	1.54	308.00	0.00	0.00	0.00	0.00
ST0007	Total LMA Miles		16.29									
Sacramento Maintenance Yard Putah Creek	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Trim / Thin Trees	0.23		0.23	1.41	0.11		0.11	0.68	-0.12		-0.12	-0.74
Encroachments	0.05		0.05	0.31	0.01		0.01	0.06	-0.04		-0.04	-0.25
Animal Control	0.12		0.12	0.74	0.06		0.06	0.37	-0.06		-0.06	-0.37
Erosion / Bank Caving					0.02		0.02	0.12	0.02		0.02	0.12
<i>LMA Totals:</i>	0.40	0.00	0.40	2.46	0.20	0.00	0.20	1.23	-0.20	0.00	-0.20	-1.23

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Overall LMA Ratings, Compare 2008 & 2009

Sacramento River Basin (cont.)

ST0008	Total LMA Miles		3.51									
Sacramento Maintenance Yard Sacramento Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.01		0.01	0.28					-0.01		-0.01	-0.28
<i>LMA Totals:</i>	0.01	0.00	0.01	0.28	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	-0.28
ST0009	Total LMA Miles		8.93									
Sutter Maintenance Yard Tisdale Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.01		0.01	0.11					-0.01		-0.01	-0.11
<i>LMA Totals:</i>	0.01	0.00	0.01	0.11	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	-0.11
ST0010	Total LMA Miles		9.32									
Sutter Maintenance Yard Wadsworth Canal	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Encroachments	0.01		0.01	0.11					-0.01		-0.01	-0.11
Animal Control	0.15		0.15	1.61	0.10		0.10	1.07	-0.05		-0.05	-0.54
<i>LMA Totals:</i>	0.16	0.00	0.16	1.72	0.10	0.00	0.10	1.07	-0.06	0.00	-0.06	-0.64
ST0011	Total LMA Miles		9.33									
Sacramento Maintenance Yard West Levee Yolo Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.01		0.01	0.11					-0.01		-0.01	-0.11
USACE Erosion Survey	0.15	0.03	0.27	2.89	0.15	0.03	0.27	2.89				0.01
<i>LMA Totals:</i>	0.16	0.03	0.28	2.99*	0.15	0.03	0.27	2.89*	-0.01	0.00	-0.01	-0.10
ST0012	Total LMA Miles		12.46									
Sacramento Maintenance Yard Willow Slough Bypass	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.21		0.21	1.69					-0.21		-0.21	-1.69
USACE Erosion Survey	0.54		0.54	4.33	0.54		0.54	4.33				0.00
<i>LMA Totals:</i>	0.75	0.00	0.75	6.02	0.54	0.00	0.54	4.33	-0.21	0.00	-0.21	-1.69

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San Joaquin River Basin

NA0010		Total LMA Miles		197.28													
Lower San Joaquin Levee District		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		M *		Overall LMA Rating		M *									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	9.86		9.86	5.15	0.67		0.67	0.34	-9.19		-9.19	-4.81					
Trim / Thin Trees	0.03		0.03	0.02	0.04		0.04	0.02	0.01		0.01	0.00					
Encroachments		0.01	0.04	0.02	0.10		0.10	0.05	0.10	-0.01	0.06	0.03					
Animal Control	0.70		0.70	0.37	0.81		0.81	0.41	0.11		0.11	0.05					
Crown Surface / Depressions / Rutting					4.52		4.52	2.29	4.52		4.52	2.29					
Repair Gates					0.01		0.01	0.01	0.01		0.01	0.01					
Vegetation & Obstructions	0.06		0.06	0.03					-0.06		-0.06	-0.03					
Encroachments					0.01	0.04	0.02		0.01	0.04	0.02	0.02					
DWR Erosion Survey		0.06	0.24	0.13					-0.06	-0.24	-0.13	-0.13					
LMA Totals:	10.65	0.07	10.93	5.71*	6.15	0.01	6.19	3.14*	-4.50	-0.06	-4.74	-2.57					

NA0011		Total LMA Miles		26.65													
Madera County FCWCA		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	26.16	2.33	35.48	132.88	0.58		0.58	2.18	-25.58	-2.33	-34.90	-130.71					
Trim / Thin Trees	0.18	0.05	0.38	1.42	0.17		0.17	0.64	-0.01	-0.05	-0.21	-0.79					
Encroachments	0.21	0.94	3.97	14.87	0.17	0.05	0.37	1.39	-0.04	-0.89	-3.60	-13.48					
Animal Control	7.69	1.34	13.05	48.88	8.01	0.30	9.21	34.56	0.32	-1.04	-3.84	-14.32					
Erosion / Bank Caving	0.02	0.04	0.18	0.67					-0.02	-0.04	-0.18	-0.67					
Crown Surface / Depressions / Rutting		0.01	0.04	0.15					-0.01	-0.04	-0.15	-0.15					
DWR Erosion Survey	0.10		0.10	0.38	0.12		0.12	0.45	0.02		0.02	0.08					
LMA Totals:	34.36	4.71	53.20	199.25	9.05	0.35	10.45	39.21	-25.31	-4.36	-42.75	-160.04					

NA0013		Total LMA Miles		6.40													
Merced County Stream Group		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Animal Control	1.10	2.33	10.42	165.40	2.88	1.40	8.48	132.50	1.78	-0.93	-1.94	-32.90					
Crown Surface / Depressions / Rutting	0.10		0.10	1.59					-0.10		-0.10	-1.59					
DWR Erosion Survey	0.02	0.01	0.06	0.95	0.14	0.02	0.22	3.44	0.12	0.01	0.16	2.49					
LMA Totals:	1.22	2.34	10.58	167.94	3.02	1.42	8.70	135.94	1.80	-0.92	-1.88	-32.00					

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San Joaquin River Basin (cont.)

NA0017		Total LMA Miles		103.96													
San Joaquin County Flood Control and Water Conservation District		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		M *		Overall LMA Rating		M									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	2.52		2.52	2.41	3.69	0.35	5.09	4.90	1.17	0.35	2.57	2.49					
Trim / Thin Trees	0.60		0.60	0.57	0.58		0.58	0.56	-0.02		-0.02	-0.02					
Encroachments	1.59	0.25	2.59	2.48	3.10	0.55	5.30	5.10	1.51	0.30	2.71	2.62					
Animal Control	0.29		0.29	0.28	0.33	0.01	0.37	0.36	0.04	0.01	0.08	0.08					
Slope Stability	0.03		0.03	0.03	1.35		1.35	1.30	1.32		1.32	1.27					
Erosion / Bank Caving	0.05		0.05	0.05	0.22		0.22	0.21	0.17		0.17	0.16					
Crown Surface / Depressions / Rutting	0.81		0.81	0.78	0.11		0.11	0.11	-0.70		-0.70	-0.67					
Vegetation & Obstructions					0.05	0.04	0.21	0.20	0.05	0.04	0.21	0.20					
Flap Gates		0.01	0.04	0.04	0.02	0.02	0.10	0.10	0.02	0.01	0.06	0.06					
Sluice / Slide Gates						0.01	0.04	0.04		0.01	0.04	0.04					
Monolith Joints					0.01		0.01	0.01	0.01		0.01	0.01					
DWR Erosion Survey	0.06	0.81	3.30	3.16	0.16	0.99	4.12	3.96	0.10	0.18	0.82	0.81					
<i>LMA Totals:</i>	5.95	1.07	10.23	9.79*	9.62	1.97	17.50	16.83	3.67	0.90	7.27	7.04					

RD0001		Total LMA Miles		1.15													
Reclamation District No. 0001 Union Island		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		A		Overall LMA Rating		M									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation					0.12		0.12	10.44	0.12		0.12	10.44					
DWR Erosion Survey	0.01		0.01	0.83					-0.01		-0.01	-0.83					
<i>LMA Totals:</i>	0.01	0.00	0.01	0.83	0.12	0.00	0.12	10.44	0.11	0.00	0.11	9.60					

RD0017		Total LMA Miles		16.24													
Reclamation District No. 0017 Mossdale		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		M *									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.45	0.02	0.53	3.27	0.03		0.03	0.19	-0.42	-0.02	-0.50	-3.09					
Trim / Thin Trees	0.54	0.25	1.54	9.51					-0.54	-0.25	-1.54	-9.51					
Encroachments	0.10		0.10	0.62	0.01		0.01	0.06	-0.09		-0.09	-0.56					
Animal Control	1.86	0.04	2.02	12.47	1.37		1.37	8.44	-0.49	-0.04	-0.65	-4.03					
Slope Stability	0.01		0.01	0.06					-0.01		-0.01	-0.06					
Repair Gates	0.02		0.02	0.12					-0.02		-0.02	-0.12					
DWR Erosion Survey					0.04	0.04	0.20	1.23	0.04	0.04	0.20	1.23					
<i>LMA Totals:</i>	2.98	0.31	4.22	26.05	1.45	0.04	1.61	9.91*	-1.53	-0.27	-2.61	-16.14					

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San Joaquin River Basin (cont.)

Rated Item	Total LMA Miles		Fall 2008				Fall 2009				Change			
	4.12		Overall LMA Rating		U		Overall LMA Rating		U					
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %		
Vegetation	0.33		0.33	8.05	0.01		0.01	0.24	-0.32		-0.32	-7.81		
Encroachments	0.03		0.03	0.73					-0.03		-0.03	-0.73		
Animal Control	0.40		0.40	9.76	0.40		0.40	9.71				-0.05		
Slope Stability	0.05		0.05	1.22	0.05		0.05	1.21				-0.01		
Erosion / Bank Caving	0.03		0.03	0.73	0.03		0.03	0.73				0.00		
Crown Surface / Depressions / Rutting	0.38		0.38	9.27					-0.38		-0.38	-9.27		
Flap Gates	0.01		0.01	0.24					-0.01		-0.01	-0.24		
DWR Erosion Survey	0.09	0.29	1.25	30.49		0.30	1.20	29.13	-0.09	0.01	-0.05	-1.36		
LMA Totals:	1.32	0.29	2.48	60.49	0.49	0.30	1.69	41.02	-0.83	0.01	-0.79	-19.47		

Rated Item	Total LMA Miles		Fall 2008				Fall 2009				Change			
	6.26		Overall LMA Rating		U		Overall LMA Rating		U					
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %		
Vegetation	0.07	0.08	0.39	6.19	0.12	0.08	0.44	7.03	0.05		0.05	0.84		
Trim / Thin Trees	0.58		0.58	9.21	0.55	0.09	0.91	14.54	-0.03	0.09	0.33	5.33		
Encroachments	0.44	0.01	0.48	7.62	0.45	0.01	0.49	7.83	0.01		0.01	0.21		
Animal Control	0.63		0.63	10.00	0.39		0.39	6.23	-0.24		-0.24	-3.77		
Slope Stability	0.16		0.16	2.54	0.16		0.16	2.56				0.02		
Erosion / Bank Caving	0.25	0.01	0.29	4.60	0.28	0.01	0.32	5.11	0.03		0.03	0.51		
Crown Surface / Depressions / Rutting	0.02	0.05	0.22	3.49	0.03	0.04	0.19	3.04	0.01	-0.01	-0.03	-0.46		
Erosion Areas					0.01		0.01	0.16	0.01		0.01	0.16		
DWR Erosion Survey	0.02		0.02	0.32		0.24	0.96	15.34	-0.02	0.24	0.94	15.02		
LMA Totals:	2.17	0.15	2.77	43.97	1.99	0.47	3.87	61.82	-0.18	0.32	1.10	17.85		

Rated Item	Total LMA Miles		Fall 2008				Fall 2009				Change			
	10.33		Overall LMA Rating		U		Overall LMA Rating		M					
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %		
Vegetation	7.10	0.45	8.90	86.41	0.12		0.12	1.16	-6.98	-0.45	-8.78	-85.25		
Trim / Thin Trees	0.83		0.83	8.06	0.67		0.67	6.49	-0.16		-0.16	-1.57		
Encroachments	0.52		0.52	5.05	0.25		0.25	2.42	-0.27		-0.27	-2.63		
Animal Control	0.36		0.36	3.50	0.30		0.30	2.90	-0.06		-0.06	-0.59		
Slope Stability	0.05		0.05	0.49	0.01		0.01	0.10	-0.04		-0.04	-0.39		
Erosion / Bank Caving	0.01		0.01	0.10	0.01		0.01	0.10				0.00		
Crown Surface / Depressions / Rutting	0.06		0.06	0.58		0.06	0.24	2.32	-0.06	0.06	0.18	1.74		
DWR Erosion Survey		0.04	0.16	1.55		0.04	0.16	1.55				0.00		
LMA Totals:	8.93	0.49	10.89	105.73	1.36	0.10	1.76	17.04	-7.57	-0.39	-9.13	-88.69		

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Overall LMA Ratings, Compare 2008 & 2009

San Joaquin River Basin (cont.)

RD1602		Total LMA Miles		6.29													
Reclamation District No. 1602 Del Puerto		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	3.89		3.89	61.75	1.06		1.06	16.85	-2.83		-2.83	-44.89					
Trim / Thin Trees	0.15		0.15	2.38	0.20		0.20	3.18	0.05		0.05	0.80					
Encroachments	0.04		0.04	0.64	0.12		0.12	1.91	0.08		0.08	1.27					
Animal Control	1.47		1.47	23.33	2.81		2.81	44.67	1.34		1.34	21.34					
Slope Stability	0.01		0.01	0.16	0.04		0.04	0.64	0.03		0.03	0.48					
Erosion / Bank Caving					0.01		0.01	0.16	0.01		0.01	0.16					
Crown Surface / Depressions / Rutting	0.47		0.47	7.46	0.47		0.47	7.47				0.01					
Encroachments	0.01		0.01	0.16	0.01		0.01	0.16				0.00					
Flap Gates					0.01		0.01	0.16	0.01		0.01	0.16					
Concrete Tilting / Settlement					0.01		0.01	0.16	0.01		0.01	0.16					
<i>LMA Totals:</i>	6.04	0.00	6.04	95.87	4.74	0.00	4.74	75.36	-1.30	0.00	-1.30	-20.52					

RD2031		Total LMA Miles		13.19													
Reclamation District No. 2031 Elliot		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		M *		Overall LMA Rating		M *									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.11		0.11	0.83	0.10	0.04	0.26	1.97	-0.01	0.04	0.15	1.14					
Trim / Thin Trees	0.22		0.22	1.67	0.60		0.60	4.55	0.38		0.38	2.88					
Encroachments	0.01		0.01	0.08	0.30		0.30	2.27	0.29		0.29	2.20					
Animal Control					0.05		0.05	0.38	0.05		0.05	0.38					
Crown Surface / Depressions / Rutting		0.09	0.36	2.73	0.02		0.02	0.15	0.02	-0.09	-0.34	-2.58					
DWR Erosion Survey		0.10	0.40	3.03	0.04		0.04	0.30	0.04	-0.10	-0.36	-2.73					
<i>LMA Totals:</i>	0.34	0.19	1.10	8.33*	1.11	0.04	1.27	9.63*	0.77	-0.15	0.17	1.30					

RD2058		Total LMA Miles		6.71													
Reclamation District No. 2058 Pescadero		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.58	0.05	0.78	11.64	1.17	0.04	1.33	19.82	0.59	-0.01	0.55	8.18					
Trim / Thin Trees	0.18	0.21	1.02	15.22	0.35	0.18	1.07	15.95	0.17	-0.03	0.05	0.72					
Encroachments	0.03		0.03	0.45	0.24		0.24	3.58	0.21		0.21	3.13					
Animal Control					0.12	0.01	0.16	2.38	0.12	0.01	0.16	2.38					
Slope Stability	0.01		0.01	0.15					-0.01		-0.01	-0.15					
DWR Erosion Survey		0.04	0.16	2.39	0.05		0.05	0.75	0.05	-0.04	-0.11	-1.64					
<i>LMA Totals:</i>	0.80	0.30	2.00	29.85	1.93	0.23	2.85	42.47	1.13	-0.07	0.85	12.62					

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

San Joaquin River Basin (cont.)

RD2062		Total LMA Miles		12.35													
Reclamation District No. 2062 Stewart		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		M *		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.02		0.02	0.16	0.01		0.01	0.08	-0.01		-0.01	-0.08					
Encroachments					1.40		1.40	11.34	1.40		1.40	11.34					
Animal Control					0.07		0.07	0.57	0.07		0.07	0.57					
Slope Stability					0.01		0.01	0.08	0.01		0.01	0.08					
Crown Surface / Depressions / Rutting					2.55		2.55	20.65	2.55		2.55	20.65					
DWR Erosion Survey	0.06	0.12	0.54	4.39	0.16	0.11	0.60	4.86	0.10	-0.01	0.06	0.47					
LMA Totals:	0.08	0.12	0.56	4.55*	4.20	0.11	4.64	37.57	4.12	-0.01	4.08	33.02					

RD2063		Total LMA Miles		10.63													
Reclamation District No. 2063 Crows Landing		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	6.59		6.59	62.17	2.66	0.01	2.70	25.40	-3.93	0.01	-3.89	-36.77					
Trim / Thin Trees	0.03		0.03	0.28	0.04		0.04	0.38	0.01		0.01	0.09					
Encroachments	0.02	0.01	0.06	0.57		0.01	0.04	0.38	-0.02		-0.02	-0.19					
Animal Control					0.04	0.07	0.32	3.01	0.04	0.07	0.32	3.01					
Slope Stability	0.01		0.01	0.09					-0.01		-0.01	-0.09					
Crown Surface / Depressions / Rutting	0.34		0.34	3.21	0.24		0.24	2.26	-0.10		-0.10	-0.95					
Flap Gates	0.02		0.02	0.19	0.01		0.01	0.09	-0.01		-0.01	-0.10					
Sluice / Slide Gates		0.01	0.04	0.38	0.01		0.01	0.09	0.01	-0.01	-0.03	-0.28					
DWR Erosion Survey	0.01		0.01	0.09	0.01		0.01	0.09				0.00					
LMA Totals:	7.02	0.02	7.10	66.98	3.01	0.09	3.37	31.70	-4.01	0.07	-3.73	-35.28					

RD2064		Total LMA Miles		11.90													
Reclamation District No. 2064 River Junction		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		M		Overall LMA Rating		A									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Animal Control	1.30		1.30	10.92					-1.30		-1.30	-10.92					
Erosion / Bank Caving	0.01		0.01	0.08	0.01		0.01	0.08				0.00					
LMA Totals:	1.31	0.00	1.31	11.01	0.01	0.00	0.01	0.08	-1.30	0.00	-1.30	-10.92					

RD2075		Total LMA Miles		7.52													
Reclamation District No. 2075 McMullin		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		M *									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	3.71		3.71	49.47					-3.71		-3.71	-49.47					
Trim / Thin Trees	0.05		0.05	0.67					-0.05		-0.05	-0.67					
Encroachments	0.38	0.01	0.42	5.60	0.01		0.01	0.13	-0.37	-0.01	-0.41	-5.47					
DWR Erosion Survey		0.03	0.12	1.60		0.01	0.04	0.53		-0.02	-0.08	-1.07					
LMA Totals:	4.14	0.04	4.30	57.33	0.01	0.01	0.05	0.66*	-4.13	-0.03	-4.25	-56.67					

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

San Joaquin River Basin (cont.)

RD2085		Total LMA Miles		6.18													
Reclamation District No. 2085 Kasson		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		M									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.79		0.79	12.74					-0.79		-0.79	-12.74					
Trim / Thin Trees	1.47		1.47	23.71	0.20		0.20	3.24	-1.27		-1.27	-20.47					
Encroachments	0.02		0.02	0.32	0.48		0.48	7.77	0.46		0.46	7.44					
Animal Control					0.04	0.10	0.44	7.12	0.04	0.10	0.44	7.12					
Slope Stability					0.02		0.02	0.32	0.02		0.02	0.32					
Erosion / Bank Caving	0.01		0.01	0.16					-0.01		-0.01	-0.16					
Crown Surface / Depressions / Rutting	0.05		0.05	0.81					-0.05		-0.05	-0.81					
Underseepage Relief Wells		0.02	0.08	1.29						-0.02	-0.08	-1.29					
Metal Pipes					0.01		0.01	0.16	0.01		0.01	0.16					
LMA Totals:	2.34	0.02	2.42	39.03	0.75	0.10	1.15	18.61	-1.59	0.08	-1.27	-20.42					

RD2089		Total LMA Miles		2.90													
Reclamation District No. 2089 Stark		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		U		Overall LMA Rating		U									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.26	2.08	8.58	295.86	0.82	0.29	1.98	68.28	0.56	-1.79	-6.60	-227.59					
Trim / Thin Trees	0.85	0.12	1.33	45.86	0.21	0.19	0.97	33.45	-0.64	0.07	-0.36	-12.41					
Encroachments					0.01		0.01	0.35	0.01		0.01	0.35					
Animal Control	0.03	0.01	0.07	2.41	0.07		0.07	2.41	0.04	-0.01		0.00					
Crown Surface / Depressions / Rutting	0.76		0.76	26.21					-0.76		-0.76	-26.21					
DWR Erosion Survey	0.04	0.03	0.16	5.52	0.03	0.03	0.15	5.17	-0.01		-0.01	-0.34					
LMA Totals:	1.94	2.24	10.90	375.86	1.14	0.51	3.18	109.66	-0.80	-1.73	-7.72	-266.21					

RD2091		Total LMA Miles		7.92													
Reclamation District No. 2091 Chase		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		A		Overall LMA Rating		A									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.62		0.62	7.83					-0.62		-0.62	-7.83					
Trim / Thin Trees	0.16		0.16	2.02					-0.16		-0.16	-2.02					
LMA Totals:	0.78	0.00	0.78	9.85	0.00	0.00	0.00	0.00	-0.78	0.00	-0.78	-9.85					

RD2092		Total LMA Miles		3.76													
Reclamation District No. 2092 Dos Rios		Fall 2008				Fall 2009				Change							
		Overall LMA Rating		A		Overall LMA Rating		A									
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %					
Vegetation	0.07		0.07	1.84					-0.07		-0.07	-1.84					
Encroachments	0.01		0.01	0.26					-0.01		-0.01	-0.26					
Animal Control					0.04		0.04	1.06	0.04		0.04	1.06					
Slope Stability	0.01		0.01	0.26					-0.01		-0.01	-0.26					
Flap Gates					0.01		0.01	0.27	0.01		0.01	0.27					
DWR Erosion Survey	0.14		0.14	3.68	0.14		0.14	3.72				0.04					
LMA Totals:	0.23	0.00	0.23	6.05	0.19	0.00	0.19	5.05	-0.04	0.00	-0.04	-1.00					

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

San Joaquin River Basin (cont.)

RD2094	Total LMA Miles		3.28									
Reclamation District No. 2094 Wathal	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Animal Control	0.19		0.19	5.76					-0.19		-0.19	-5.76
Erosion / Bank Caving	0.01		0.01	0.30	0.01		0.01	0.31				0.00
Crown Surface / Depressions / Rutting					0.01		0.01	0.31	0.01		0.01	0.31
<i>LMA Totals:</i>	0.20	0.00	0.20	6.06	0.02	0.00	0.02	0.61	-0.18	0.00	-0.18	-5.45
RD2095	Total LMA Miles		4.83									
Reclamation District No. 2095 Paradise Cut	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	1.82		1.82	37.14	0.04	0.01	0.08	1.66	-1.78	0.01	-1.74	-35.49
Trim / Thin Trees	0.72		0.72	14.69					-0.72		-0.72	-14.69
Encroachments	0.02		0.02	0.41	0.01		0.01	0.21	-0.01		-0.01	-0.20
Erosion / Bank Caving	0.81		0.81	16.53	0.01		0.01	0.21	-0.80		-0.80	-16.32
DWR Erosion Survey	0.01	0.06	0.25	5.10		0.10	0.40	8.28	-0.01	0.04	0.15	3.18
<i>LMA Totals:</i>	3.38	0.06	3.62	73.88	0.06	0.11	0.50	10.35	-3.32	0.05	-3.12	-63.53
RD2096	Total LMA Miles		0.17									
Reclamation District No. 2096 Wetherbee Lake	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.01		0.01	5.00	0.01		0.01	5.88				0.88
Animal Control	0.01		0.01	5.00	0.06		0.06	35.29	0.05		0.05	30.29
<i>LMA Totals:</i>	0.02	0.00	0.02	10.00	0.07	0.00	0.07	41.18	0.05	0.00	0.05	31.18
RD2101	Total LMA Miles		3.51									
Reclamation District No. 2101 Blewett	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	2.75		2.75	78.57	2.88		2.88	82.05	0.13		0.13	3.48
Trim / Thin Trees	1.88		1.88	53.71	1.88		1.88	53.56				-0.15
Encroachments					0.01		0.01	0.29	0.01		0.01	0.29
Animal Control	0.14		0.14	4.00	0.03		0.03	0.86	-0.11		-0.11	-3.15
Erosion / Bank Caving		0.02	0.08	2.29	0.01		0.01	0.29	0.01	-0.02	-0.07	-2.00
Crown Surface / Depressions / Rutting	0.20		0.20	5.71	0.02		0.02	0.57	-0.18		-0.18	-5.14
DWR Erosion Survey		0.10	0.40	11.43		0.10	0.40	11.40				-0.03
<i>LMA Totals:</i>	4.97	0.12	5.45	155.71	4.83	0.10	5.23	149.00	-0.14	-0.02	-0.22	-6.71

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

San Joaquin River Basin (cont.)

RD2107	Total LMA Miles		4.21									
Reclamation District No. 2107	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
			A				A					
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.22		0.22	5.24					-0.22		-0.22	-5.24
Trim / Thin Trees	0.05		0.05	1.19					-0.05		-0.05	-1.19
Encroachments	0.01		0.01	0.24	0.06		0.06	1.43	0.05		0.05	1.19
Slope Stability					0.01		0.01	0.24	0.01		0.01	0.24
<i>LMA Totals:</i>	0.28	0.00	0.28	6.67	0.07	0.00	0.07	1.66	-0.21	0.00	-0.21	-5.00

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

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Overall LMA Ratings, Compare 2008 & 2009

Miscellaneous Streams & Basins

MA0017	Total LMA Miles		3.90									
Sutter Maintenance Yard Maintenance Area 0017	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation		3.13	12.52	321.03		3.13	12.52	321.03				0.00
Trim / Thin Trees		3.12	12.48	320.00		3.12	12.48	320.00				0.00
<i>LMA Totals:</i>	0.00	6.25	25.00	641.03	0.00	6.25	25.00	641.03	0.00	0.00	0.00	0.00
NA0009	Total LMA Miles		10.47									
Lake County Watershed Protection District	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
Vegetation	0.23		0.23	2.07	0.01		0.01	0.10	-0.22		-0.22	-1.98
Trim / Thin Trees	0.19		0.19	1.71	0.02		0.02	0.19	-0.17		-0.17	-1.52
Encroachments	0.04		0.04	0.36	0.01		0.01	0.10	-0.03		-0.03	-0.26
Erosion / Bank Caving	0.10		0.10	0.90					-0.10		-0.10	-0.90
<i>LMA Totals:</i>	0.56	0.00	0.56	5.05	0.04	0.00	0.04	0.38	-0.52	0.00	-0.52	-4.66
NA0015	Total LMA Miles		3.22									
Plumas County	Fall 2008				Fall 2009				Change			
	Overall LMA Rating				Overall LMA Rating							
Rated Item	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %	M Miles	U Miles	M+4U Miles	Thresh. %
No Items												0.00
<i>LMA Totals:</i>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

* Overall LMA Threshold Percent is less than 10.00%; however, U Rated Miles are present, so the Overall LMA Rating is M instead of A.

Appendix E: 2009 Channel Maintenance Inspection Summary Reports

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Adin Community Service District

Ash Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Dry Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard

Big Chico Creek

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	U
	Encroachments	A

Lindo Channel & Sandy Gulch & Sandy Gulch

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Little Chico Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Fairfield Suisun Sewer District

Laurel Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Ledgewood Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

McCoy Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Union Avenue Diversion

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Madera County FCWCA

Ash Slough

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	M
	Encroachments	M

Berenda Slough

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M

Chowchilla River

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M

Fresno River

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Merced Irrigation District

Bear Creek

Overall Unit Rating	Rated Item	Item Rating
M *	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	M *
	Revetments	A
	Encroachments	A

* Overall channel rating average is less than 0.2, however, U rated issues are present, so the overall rating is M instead of A.

Black Rascal Creek

Overall Unit Rating	Rated Item	Item Rating
M *	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M *

* Overall channel rating average is less than 0.2, however, U rated issues are present, so the overall rating is M instead of A.

Burns Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Mariposa Creek & Duck Slough

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Miles Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Merced Irrigation District (cont.)

Owens Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Placer County

Truckee River

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

San Joaquin County Flood Control and Water Conservation District

Duck Creek Diversion Channel

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

North Littlejohn Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

South Littlejohn Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

South Littlejohn Creek North Branch

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Flood Control Project Maintenance
2009 Channel Summary Report
Overall Unit and Item Ratings

Tehama County Flood Control and Water Conservation District

McClure Creek

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A

Salt Creek

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M

Appendix F: 2009 Structure Maintenance Inspection Summary Reports

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Butte County Public Works

Big Chico Creek Diversion Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Closure Structures	A
	Monolith Joints	A

Lindo Channel Control Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	M
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Monolith Joints	A

Lindo Channel Diversion Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

City of Sacramento

El Camino Avenue Bridge

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	M
	Monolith Joints	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

DWR Sacramento Maintenance Yard

Cache Creek Setting Basin Weir And Drainage Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Security Fencing	A
	Safety	A

Fremont Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Sluice/Slide Gates	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Monolith Joints	A
	Safety	A

Knights Landing Outfall Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Encroachments	A
	Trash Racks	A
	Flap Gates	A
	Sluice/Slide Gates	A
	Electric Gate Operators	M
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Other Metallic Items	M
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

DWR Sacramento Maintenance Yard (cont.)

Paradise Dam

Overall Unit Rating	Rated Item	Item Rating
M	Photo Documentation	A
	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	M
	Safety	M

Sacramento Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Encroachments	M
	Concrete Foundations	A
	Security Fencing	A
	Other Metallic Items	A
	Monolith Joints	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard

Butte Slough Drainage Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Metal Pipes	A
	Flap Gates	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Closure Structures	A

Butte Slough Outfall Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Flap Gates	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Monolith Joints	A

Colusa Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Security Fencing	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard (cont.)

Little Chico Creek Control And Weir Structures

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Closure Structures	A

Moulton Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Monolith Joints	A

Nelson Bend

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Safety	M

Sutter Bypass Weir No. 2

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Sluice/Slide Gates	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard (cont.)

Tisdale Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Wadsworth Canal Weir No. 4

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Lake County Watershed Protection District

Clover Creek Diversion Structure

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	A
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Encroachments	A
	Culverts: Inlets / Outlets	M
	Culverts: Breaks / Holes / Cracks	A
	Metal Pipes	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Closure Structures	A
	Other Metallic Items	M
	Monolith Joints	A
	Safety	M

Highland Canal Diversion Weir And Drainage Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Metal Pipes	A
	Flap Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Closure Structures	A
	Other Metallic Items	A
	Monolith Joints	A
	Safety	M

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Lower San Joaquin Levee District

Ash Slough Drop Structure No. 1

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Ash Slough Drop Structure No. 2

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	M
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Ash Slough Drop Structure No. 3

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Ash Slough Drop Structure No. 4

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Revetments	A
	Encroachments	M
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Bear Creek Diversion Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Electric Gate Operators	A
	Concrete Surfaces	M
	Concrete Foundations	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Lower San Joaquin Levee District (cont.)

Eastside Bypass Control Structure

Overall Unit Rating	Rated Item	Item Rating
A	Plant Building	A
	Revetments	A
	Encroachments	A
	Sluice/Slide Gates	A
	Electric Gate Operators	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Other Metallic Items	A
	Monolith Joints	A

Eastside Bypass Drop Structure No. 1

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Eastside Bypass Drop Structure No. 2

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Fresno River Drainage Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Flap Gates	A
	Manual Gate Operators	M

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Lower San Joaquin Levee District (cont.)

Mariposa Bypass Control Structure

Overall Unit Rating	Rated Item	Item Rating
A	Motors, Engines, Fans & Gear Reducers	A
	Vegetation & Obstructions	A
	Revetments	A
	Electric Gate Operators	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Closure Structures	A
	Other Metallic Items	A
	Monolith Joints	A

Mariposa Bypass Drop Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Encroachments	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Monolith Joints	A

Owens Creek Control Structure

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	A
	Encroachments	A
	Concrete Surfaces	U
	Concrete Foundations	A
	Closure Structures	A

Owens Creek Overflow Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	M
	Culverts: Inlets / Outlets	A
	Concrete Surfaces	A
	Concrete Foundations	A

San Joaquin River And Chowchilla Canal Bypass Control Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Revetments	A
	Encroachments	A
	Sluice/Slide Gates	M
	Electric Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Monolith Joints	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Lower San Joaquin Levee District (cont.)

San Joaquin River Structure And Sand Slough Structure

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Revetments	A
	Encroachments	A
	Manual Gate Operators	A
	Concrete Surfaces	M
	Concrete Foundations	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Madera County FCWCA

Ash And Berenda Slough Control Structures

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Safety	A

Fresno River Diversion Weir

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	M
	Shoaling / Sedimentation	A
	Revetments	A
	Encroachments	M
	Culverts: Inlets / Outlets	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Foundations	A
	Other Metallic Items	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Merced Irrigation District

Black Rascal Creek Drop Structure

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Encroachments	A
	Concrete Surfaces	M
	Concrete Foundations	M
	Security Fencing	A
	Safety	A

Owens Creek Siphon Structure

Overall Unit Rating	Rated Item	Item Rating
M	Vegetation & Obstructions	M
	Shoaling / Sedimentation	M
	Erosion / Bank Caving	A
	Revetments	M
	Encroachments	M
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Plumas County

North Fork Feather River Diversion Channel Drop Structure Drop Structure No. 1 Through 7

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Safety	A

North Fork Feather River Diversion Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Metal Pipes	A
	Trash Racks	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Security Fencing	A
	Closure Structures	A
	Monolith Joints	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

Reclamation District No. 0999

Elk Slough Inlet Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Metal Pipes	A
	Flap Gates	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Other Metallic Items	A
	Safety	A

Flood Control Project Maintenance
2009 Structure Summary Report
Overall Unit and Item Ratings

San Joaquin County Flood Control and Water Conservation District

Duck Creek Diversion Weir And Control Structure

Overall Unit Rating	Rated Item	Item Rating
A	Vegetation & Obstructions	A
	Shoaling / Sedimentation	A
	Erosion / Bank Caving	A
	Revetments	A
	Encroachments	A
	Culverts: Inlets / Outlets	A
	Culverts: Breaks / Holes / Cracks	A
	Metal Pipes	A
	Sluice/Slide Gates	A
	Manual Gate Operators	A
	Concrete Surfaces	A
	Concrete Tilting / Settlement	A
	Concrete Foundations	A
	Other Metallic Items	A
	Monolith Joints	A
	Safety	A

Appendix G: 2009 Pumping Plant Maintenance Inspection Summary Reports

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

City of Sacramento

Magpie Creek Pumping Plant

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Cranes	A
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

Reclamation District No. 2063 Crows Landing

Reclamation District No. 2063 Pumping Plant (Nelson Drain)

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	U
	Operation & Maintenance Manual	U
	Plant Building	M
	Communications	A
	Safety	M
	Pumps	M
	Power	A
	Pump Control Systems	M
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	U
	Security Fencing	A
	Intake and Discharge Pipes	M
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard

Middle Creek Pumping Plant

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	U
	Operation & Maintenance Manual	U
	Plant Building	M
	Communications	A
	Safety	A
	Pumps	A
	Power	A
	Pump Control Systems	M
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	M
	Manual Gate Operators	M
	Other Metallic Items	A
	Flap Gates	M
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Sutter Bypass Pumping Plant No. 1

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	U
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	M
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

DWR Sutter Maintenance Yard (cont.)

Sutter Bypass Pumping Plant No. 2

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	U
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	M
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Pressurized Pipe	A

Sutter Bypass Pumping Plant No. 3

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	U
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	M
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

Turlock Irrigation District Gomes Lake

Gomes Lake Pumping Plant

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Electric Gate Operators	A
	Manual Gate Operators	M
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

Sacramento County

American River Pumping Plant No. 1 Howe Avenue Storm Drain D - 05

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Cranes	A
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Trash Rakes	A
	Electric Gate Operators	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Pressurized Pipe	A

American River Pumping Plant No. 2 Willhaggin Storm Drain D - 43

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Cranes	A
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Electric Gate Operators	A
	Manual Gate Operators	A
	Flap Gates	A
	Security Fencing	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

San Joaquin County Flood Control and Water Conservation District

Mormon Slough Pumping Plant No. 1

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Mormon Slough Pumping Plant No. 2

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

San Joaquin County Flood Control and Water Conservation District (cont.)

Mormon Slough Pumping Plant No. 3

Overall Unit Rating	Rated Item	Item Rating
A	Operating Log	A
	Operation & Maintenance Manual	A
	Plant Building	A
	Communications	A
	Safety	A
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	A
	Sluice / Slide Gates	A
	Manual Gate Operators	A
	Other Metallic Items	A
	Flap Gates	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Flood Control Project Maintenance
2009 Pumping Plant Summary Report
Overall Unit and Item Ratings

Reclamation District No. 2096 Wetherbee Lake

Wetherbee Lake Pumping Plant & Navigation Gate

Overall Unit Rating	Rated Item	Item Rating
M	Operating Log	A
	Operation & Maintenance Manual	U
	Plant Building	A
	Communications	A
	Safety	M
	Pumps	A
	Power	A
	Motors, Engines, Fans & Gear Reducers	A
	Pump Control Systems	A
	Sumps/Wet Well	A
	Trash Racks	M
	Electric Gate Operators	A
	Manual Gate Operators	A
	Other Metallic Items	M
	Flap Gates	M
	Closure Structures	A
	Security Fencing	A
	Intake and Discharge Pipes	A
	Pressurized Pipe	A

Appendix H: Supplemental Figures and Tables

The following figures supplement information contained in Sections 2 through 4 of the main report. In general, these figures present different ways of analyzing maintenance results such as plotting information separately for the Sacramento and San Joaquin river basins or plotting results by type of deficiency.

2009 Levee Maintenance Inspections

- Figure H-1 shows the levee maintenance inspection ratings grouped by Sacramento River, San Joaquin River, and Miscellaneous basins.
- Figure H-2 shows the changes in ratings grouped by basin.
- Figure H-3 shows the percentage of deficient miles in the total system for each type of rated items. Vegetation deficiencies make up the vast majority of the miles in all years followed by a significant amount of trim/thin trees and animal control.
- Figure H-4 shows the same information as Figure H-3 but is separated by basin. Encroachment issues rated as Partially or Completely Obstructing are not included in these figures.
- Table H-1 shows the length, in miles, of Minimally Acceptable (M) and Unacceptable (U) issues for each category in the total system and the percentage of the total project length along which these lengths occur. Also shown in this table is the change in M and U lengths as well as the resultant change in the percent of total project lengths. Tables H-2, H-3, and H-4 show similar information to Table H-1 but only contain the lengths for the Sacramento River, San Joaquin River, and Miscellaneous basins, respectively.
- Figures H-5 and H-6 are maps of the Sacramento and San Joaquin systems, showing the location and rating of each LMA. To find the general location of an LMA, refer to Plates A-1 through A-1D in Appendix A.

2009 Channel Maintenance Inspections

- Figure H-7 shows improvement in ratings for the individual categories used to rate the channels in 2007 through 2009.
- Table H-5 shows a summary of the channel clearance activities performed in 2009.

LMA Maintenance Rating Comparison by Basin

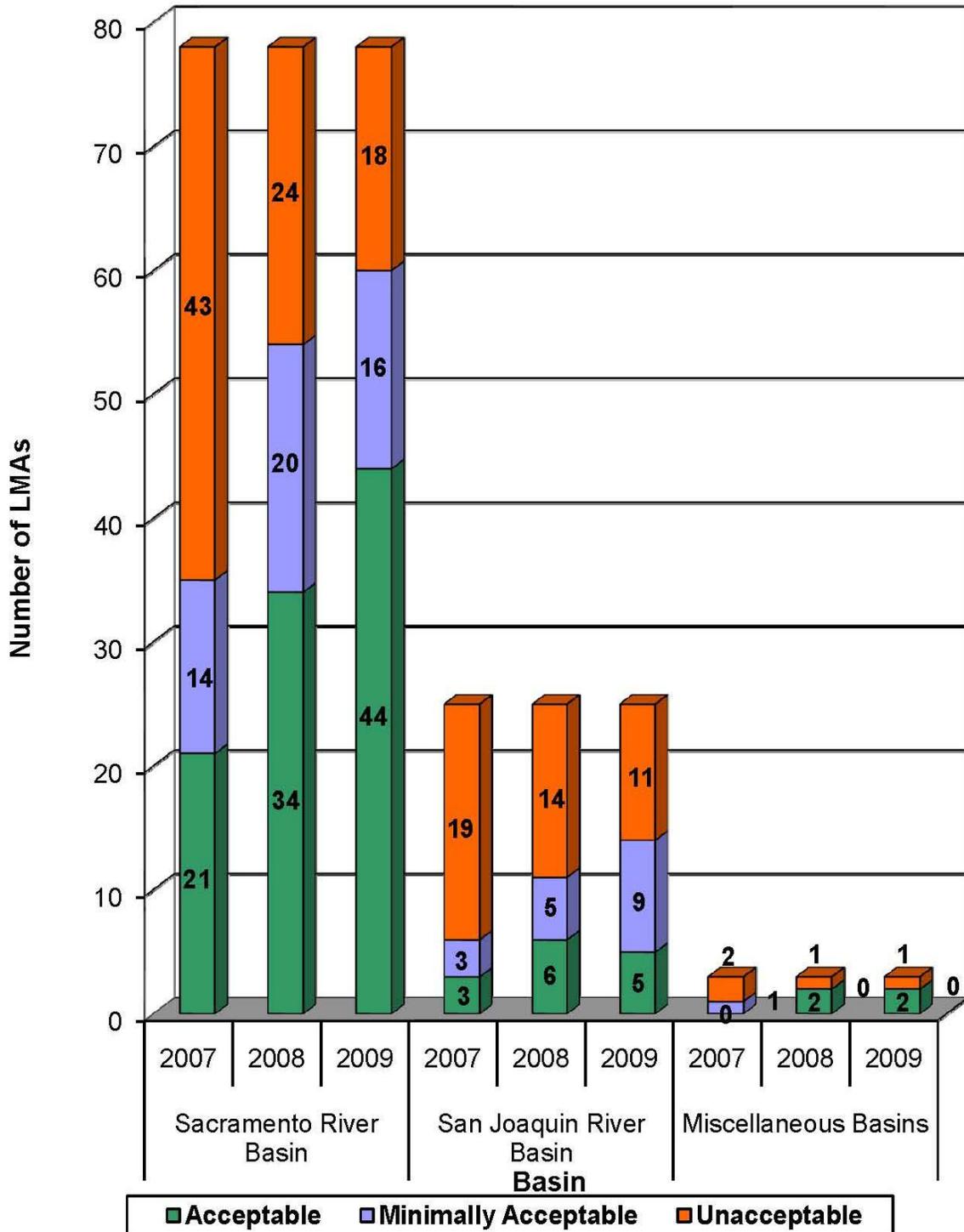


Figure H-1

LMA Maintenance Rating Changes From Fall 2008 to Fall 2007 and Fall 2009 to 2008 By Basin

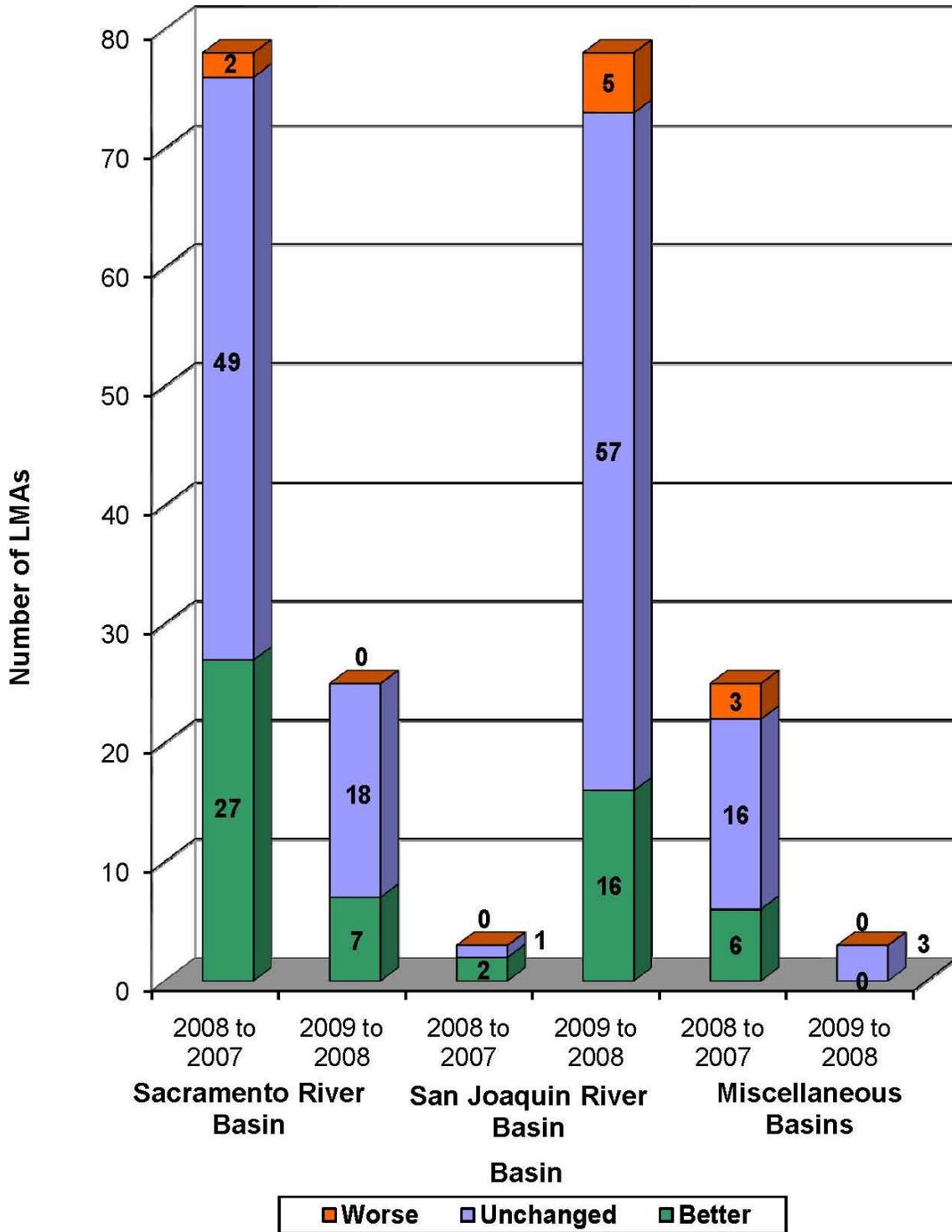


Figure H-2

Percentage of Total System Levee Miles with Maintenance Deficiencies

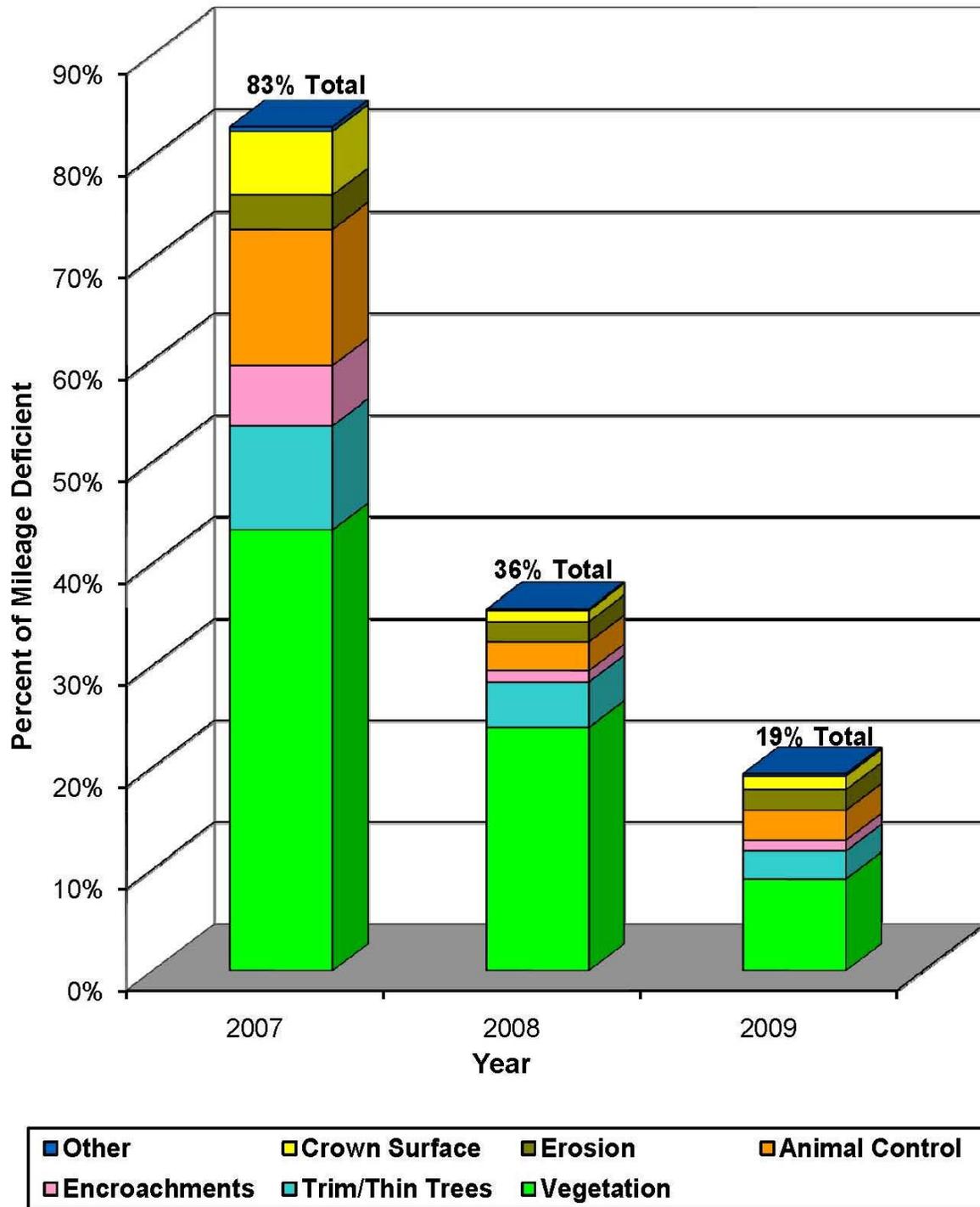


Figure H-3

Percentage of Levee Miles with Maintenance Deficiencies by Basin

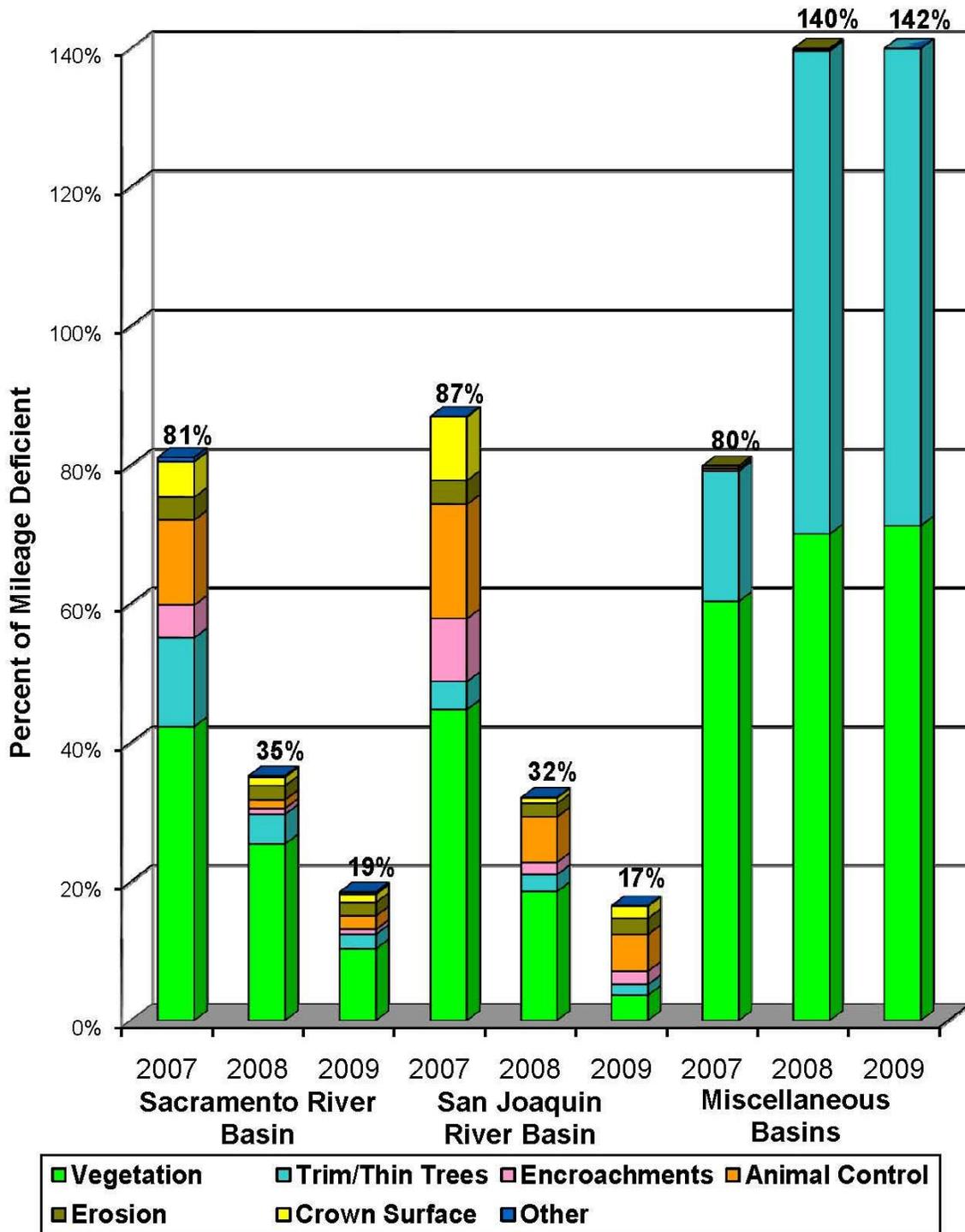


Figure H-4

Table H-1: Total of Maintenance Issue Lengths for 2008 and 2009

Total Project Length: 1573.98 miles	Fall 2008				Fall 2009				Change			
	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent
Vegetation	230.20	36.11	374.8	23.87%	73.46	17.35	142.86	9.03%	-156.74	-18.76	-231.78	-14.66%
Trim/Thin Trees	29.80	10.08	70.12	4.47%	21.02	5.37	42.50	2.69%	-8.78	-4.71	-27.62	-1.75%
Encroachments	11.27	1.57	17.55	1.12%	14.11	0.69	16.87	1.07%	2.84	-0.87	-0.64	-0.04%
Animal Control	29.63	3.72	44.51	2.84%	38.95	1.89	46.51	2.94%	9.32	-1.83	2.00	0.13%
Erosion	12.59	4.62	31.07	1.98%	13.07	4.79	32.23	2.04%	0.48	0.17	1.16	0.07%
Crown Surface	13.20	1.00	17.20	1.10%	15.14	1.49	21.10	1.33%	1.94	0.49	3.90	0.25%
Other	0.40	0.41	2.04	0.13%	2.07	0.37	3.55	0.22%	1.67	-0.04	1.51	0.10%
Total	327.09	57.51	557.13	35.50%	177.82	31.95	305.62	19.33%	-149.27	-25.55	-251.47	-15.90%

Table H-2: Sacramento River Basin Maintenance Issue Lengths for 2008 and 2009

Sacramento River Basin Length: 1085.72 miles	Fall 2008				Fall 2009				Change			
	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent
Vegetation	161.95	27.97	273.83	25.39%	59.31	13.36	112.75	10.38%	-102.64	-14.61	-161.08	-14.84%
Trim/Thin Trees	21.09	6.33	46.41	4.30%	15.51	1.79	22.67	2.09%	-5.58	-4.54	-23.74	-2.19%
Encroachments	7.79	0.34	9.15	0.85%	7.37	0.07	7.65	0.70%	-0.42	-0.27	-1.50	-0.14%
Animal Control	13.46	0.00	13.46	1.25%	21.13	0.00	21.13	1.95%	7.67	0.00	7.67	0.71%
Erosion	10.42	2.86	21.86	2.03%	9.93	2.80	21.13	1.95%	-0.49	-0.06	-0.73	-0.07%
Crown Surface	10.01	0.85	13.41	1.24%	7.17	1.39	12.73	1.17%	-2.84	0.54	-0.68	-0.06%
Other	0.35	0.37	1.83	0.17%	1.97	0.34	3.33	0.31%	1.62	-0.03	1.50	0.14%
Total	225.07	38.72	379.95	35.23%	122.39	19.75	201.39	18.55%	-102.68	-18.97	-178.56	-16.45%

Table H-3: San Joaquin River Basin Maintenance Issue Lengths for 2008 and 2009

San Joaquin River Basin Length: 478.04 miles	Fall 2008				Fall 2009				Change			
	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent
Vegetation	68.02	5.01	88.06	18.64%	14.14	0.86	17.58	3.68%	-53.88	-4.15	-70.48	-14.74%
Trim/Thin Trees	8.52	0.63	11.04	2.34%	5.49	0.46	7.33	1.53%	-3.03	-0.17	-3.71	-0.78%
Encroachments	3.44	1.23	8.36	1.77%	6.73	0.62	9.21	1.93%	3.29	-0.60	0.89	0.19%
Animal Control	16.17	3.72	31.05	6.57%	17.82	1.89	25.38	5.31%	1.65	-1.83	-5.67	-1.19%
Erosion	2.07	1.76	9.11	1.93%	3.14	1.99	11.10	2.32%	1.07	0.23	1.99	0.42%
Crown Surface	3.19	0.15	3.79	0.80%	7.97	0.10	8.37	1.75%	4.78	-0.05	4.58	0.96%
Other	0.05	0.04	0.21	0.04%	0.10	0.03	0.22	0.05%	0.05	-0.01	0.01	0.00%
Total	101.46	12.54	151.62	32.09%	53.39	5.95	79.19	16.57%	-46.07	-6.90	-72.39	-15.14%

Table H-4: Miscellaneous Basins Maintenance Issue Lengths for 2008 and 2009

Miscellaneous Basins Length: 18.20 miles	Fall 2008				Fall 2009				Change			
	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent	M Miles	U Miles	M+4U Miles	Threshold Percent
Vegetation	0.23	3.13	12.75	70.05%	0.01	3.13	12.53	71.23%	-0.22	0.00	-0.22	-1.25%
Trim/Thin Trees	0.19	3.12	12.67	69.62%	0.02	3.12	12.50	71.06%	-0.17	0.00	-0.17	-0.97%
Encroachments	0.04	0.00	0.04	0.22%	0.01	0.00	0.01	0.06%	-0.03	0.00	-0.03	-0.17%
Animal Control	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%
Erosion	0.10	0.00	0.10	0.55%	0.00	0.00	0.00	0.00%	-0.10	0.00	-0.10	-0.57%
Crown Surface	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%
Other	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00%
Total	0.56	6.25	25.56	140.44%	0.04	6.25	25.04	142.35%	-0.52	0.00	-0.52	-2.96%

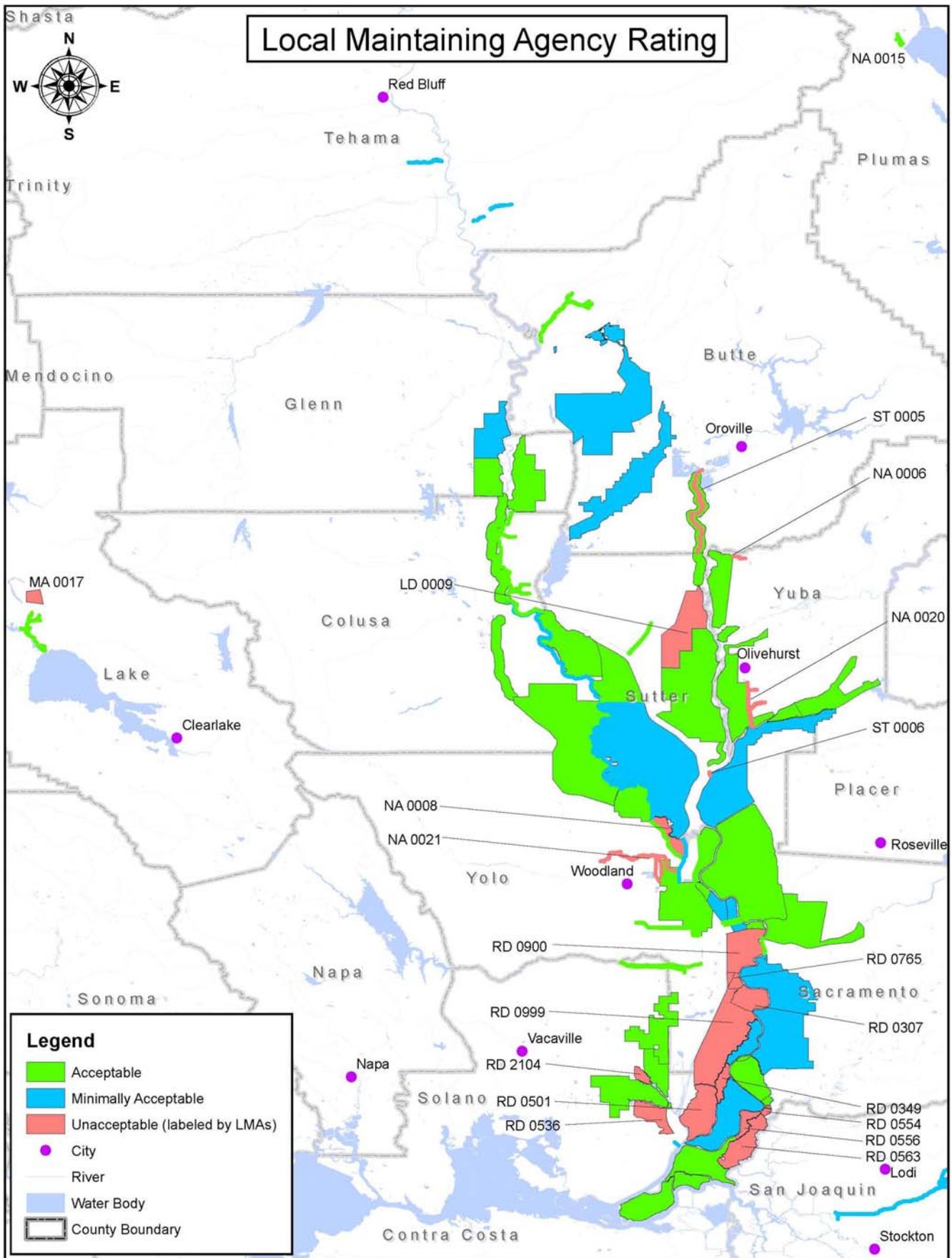


Figure H-5

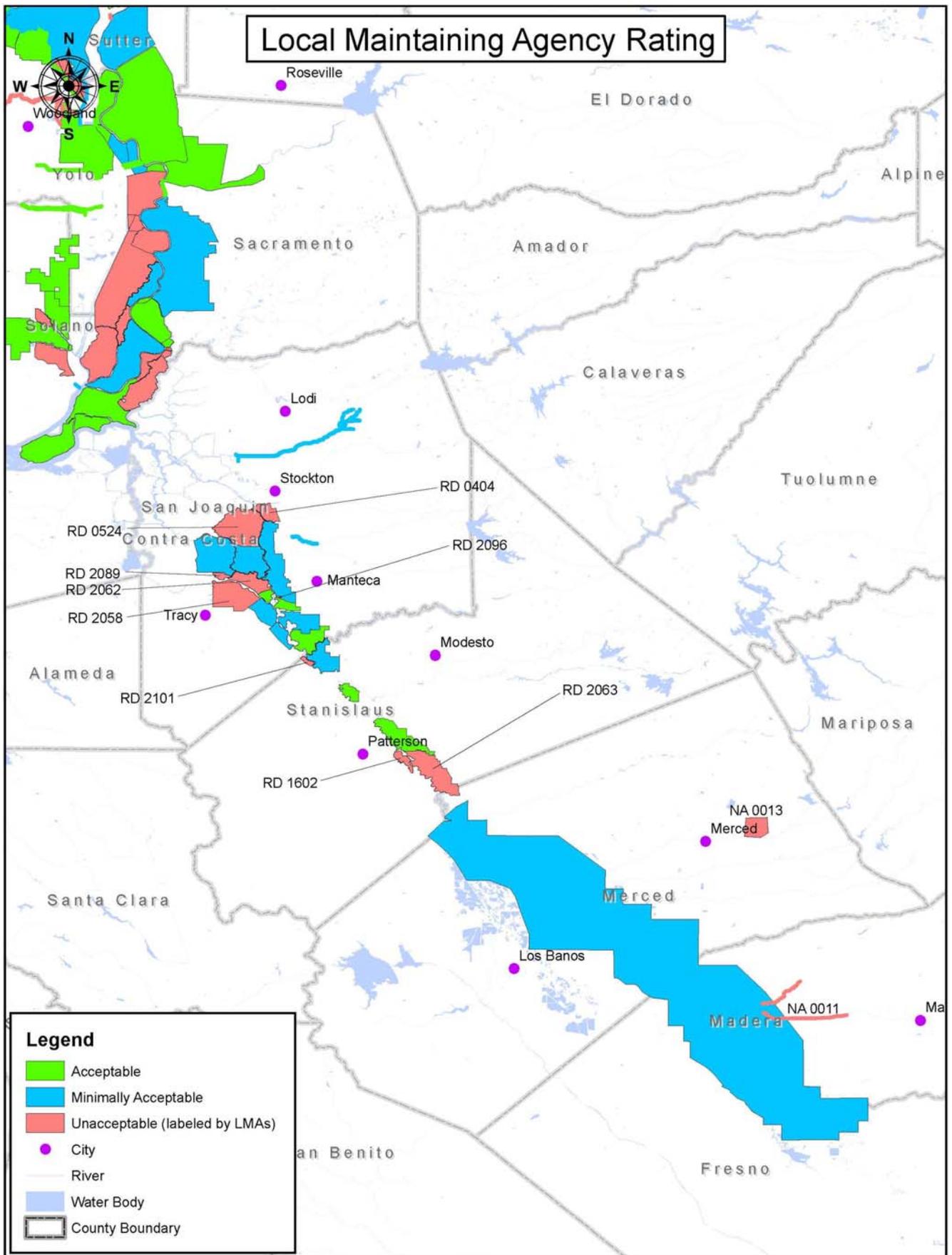


Figure H-6