

April 13, 2018
Sacramento, California

The Board of Trustees of the American River Flood Control District met in regular session in its office at 185 Commerce Circle, Sacramento, CA at 11:00 a.m. on Friday, April 13, 2018. In attendance were Trustee Holloway, Trustee Redway, Trustee Shah and Trustee Pavão. Trustee Johns was absent. Trustee Holloway presided. Also present from the District were General Manager (GM) Tim Kerr, Superintendent Ross Kawamura, Legal Counsel Scott Shapiro and Office Manager Malane Chapman. Mr. Robert Merritt was present from Robert Merritt, CPA, Ms. Ingrid Sheipline, CPA, was present from Richardson & Company LLP and Dianna Sutton was present from ACWA-JPIA. One member of the public was present.

Item No. 1 Public Comments on Non-Agenda Items: There were no comments on non-agenda items from members of the public.

Item No. 2 Approval of Consent Agenda Items: On a motion by Trustee Shah seconded by Trustee Pavão, the Board unanimously approved Items 2a) Minutes of Regular Meeting on March 9, 2018, 2b) Approval of Report of Investment Transactions February 2018 (City Pool, LAIF, River City) and Treasurer's Certification, 2c) District Financial Reports: Statement of Operations (March 2018) and Cash Flow Report and 2d) Correspondence: None.

Item No. 2e) Information: Presentation by Representative from ACWA-JPIA: GM Kerr introduced ACWA-JPIA Finance Manager, Dianna Sutton. ACWA-JPIA is the District's liability, property, and workman's compensation insurance company. As part of the JPIA's RPA Rate Stabilization Fund Ms. Sutton presented the District with a check in the amount of \$23,093.22 in recognition of the District's excellent training and risk-management practices.

Item No. 3 Accounts Payable and General Fund Expenses (March 2018): Trustee Holloway requested clarification regarding payment to Pirtek. Trustee Shah requested clarification regarding payments to Turf Star. Trustee Redway requested clarification on payment to Grace Consulting and Valley Truck & Tractor Co. On a motion by Trustee Redway seconded by Trustee Shah, the Board unanimously approved payments on the Schedule of Accounts Payable (March 2018) of \$72,111.78 and General Fund Expenses of \$65,212.89 (total aggregate sum \$137,324.67).

Item No. 4 Draft FY 2016-17 Audit: The Board reviewed the draft audit. Trustee Pavão asked about the CalPERS unfunded liability. Following explanation by Ms. Sheipline and on a motion by Trustee Pavão seconded by Trustee Shah, the Board unanimously approved the draft audit with language correction on page 5 from "land transfer" to "land easement transfer".

Item No. 5 SAFCA Agreement for Operation, Maintenance, Repair, Replacement & Rehabilitation for the North Sacramento Streams Levee Improvement Project: Legal

Counsel Shapiro discussed The Three R's (and perhaps a Fourth) with the Board. The report was received and filed by the Board. No action was taken on this item.

Item No. 6 Administrative Staff Reports:

a) *General Manager Tim Kerr reported on the following:*

- General Manager's March Meeting Summary: SAFCA Agency Staff meeting and CA Central Valley Flood Protection Board Coordination Committee meetings were discussed;
- Grace Consulting Salary Study: Conducting a new updated salary survey;
- La Riviera Staging Area: Survey has been recorded, working with fence companies to obtain updated proposals;
- SAFCA CCAD Invoice: Gm Kerr noted that there is a high degree of uncertainty that the District will receive payment;
- Hydrologic Conditions: Folsom Lake is 79% full, with an outflow of 11,000 cfs and the gauge at the I Street Bridge shows 18 feet above sea level;
- Next Board Meeting: May 11, 2018.

b) *Legal Counsel Scott Shapiro had nothing further to report.*

c) *Office Manager Malane Chapman had nothing further to report.*

Item No. 7 Operations and Maintenance Staff Reports:

a) *Superintendent Ross Kawamura reported on:*

- Crew activities including equipment repair work, garbage cleanup, camp cutouts, annual trimming and mowing.

Item No. 8 Questions and Comments by Trustees: There were no questions or comments by Trustees.

Item No. 9 and 10 Tour of District Facilities/Adjourn: There being no further business requiring action by the Board, the meeting was adjourned to a tour of the District levees and facilities by Trustee Holloway at 12:07 p.m.

Attest:

Secretary

President

**American River Flood Control District
Staff Report**

Investment Transactions Summary; March 2018

LAIF:

- There were no transactions in this account during the month of March.

City Pool A

- Accrued Interest Receivable for the month of March was \$10,664.48.
- As of March 31, 2018, the balance of Interest Receivable in this account was \$91,252.99.

Interest Receivable is accrued and transferred to the Cash Balance at the discretion of the City.

River City Bank:

- Total amount of Accounts Payable cleared during the month of March was \$133,555.91.
- On March 31, 2018 a monthly interest payment was deposited in the amount of \$71.91.

**American River Flood Control District
Investment Transaction Report
March 2018**

Item 2b

Balance and Transactions

Account		LAIF	City Pool A	River City Bank
Beginning Balance	3/1/18	\$441,189.24	\$7,267,268.07	\$1,105,596.73
Transactions				
City Pool A	3/31/18		10,664.48	
River City Bank Interest	3/31/18			71.91
Accounts Payable (cleared)				(133,555.91)
Ending Balance:	3/31/18	\$441,189.24	\$7,267,268.07	\$972,112.73

**City Pool A Interest is accrued and deposited in the account at the discretion of the City.

Interest

Date:	Apr 2017	May 2017	June 2017	July 2017
LAIF	0.88	0.88	0.98	1.05
City Pool A	1.56	1.42	1.55	1.50
River City Bank	0.25	0.25	0.20	0.08
Date:	Aug 2017	Sep 2017	Oct 2017	Nov 2017
LAIF	1.08	1.11	1.14	1.17
City Pool A	1.61	1.70	1.66	1.46
River City Bank	0.08	0.08	0.08	0.08
Date:	Dec 2017	Jan 2018	Feb 2018	Mar 2018
LAIF	1.24	1.35	1.41	1.52
City Pool A	1.71	1.65	2.01	1.71
River City Bank	0.08	0.08	0.08	0.08

**American River
Flood Control
District**

AMERICAN RIVER FLOOD CONTROL DISTRICT

MONTHLY REVIEW – MARCH 2018

STRATEGY

The ARFCD funds are invested in the City of Sacramento’s Pool A investment fund. The Fund is invested pursuant to the objectives and requirements set forth in the City’s investment policy. The three objectives of the investment policy, in order of priority, are (1) the preservation of capital by the investment in safe instruments, (2) the liquidity needs of the City and pool participants so such parties will have access to cash when they need it, and (3) the maximizing of current income while remaining consistent with the other more important objectives. The City’s investment policy incorporates applicable provisions of state law including, among other things, the prudent person standard and California Code Section 53601 pertaining to eligible investments.

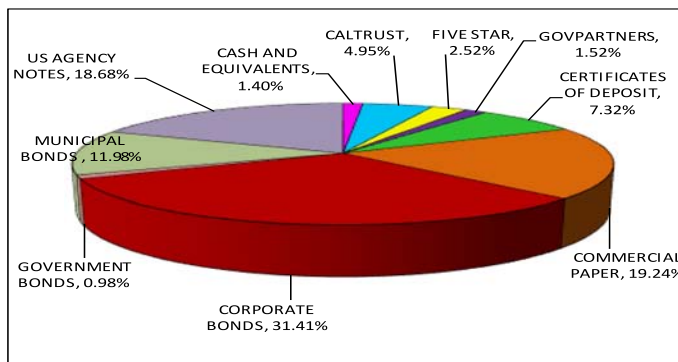
PORTFOLIO STATISTICS

Portfolio’s Beginning Balance	7,347,857
Contributions	0
Withdrawals	0
Interest Earned	10,664
Month-End Market Value	7,358,521

PERFORMANCE

Earned Interest Yield for the Month	1.71%
Laif Rate of Return (book value)	1.52%
90 Day T-Bill	1.69%
Federal Funds	1.49%

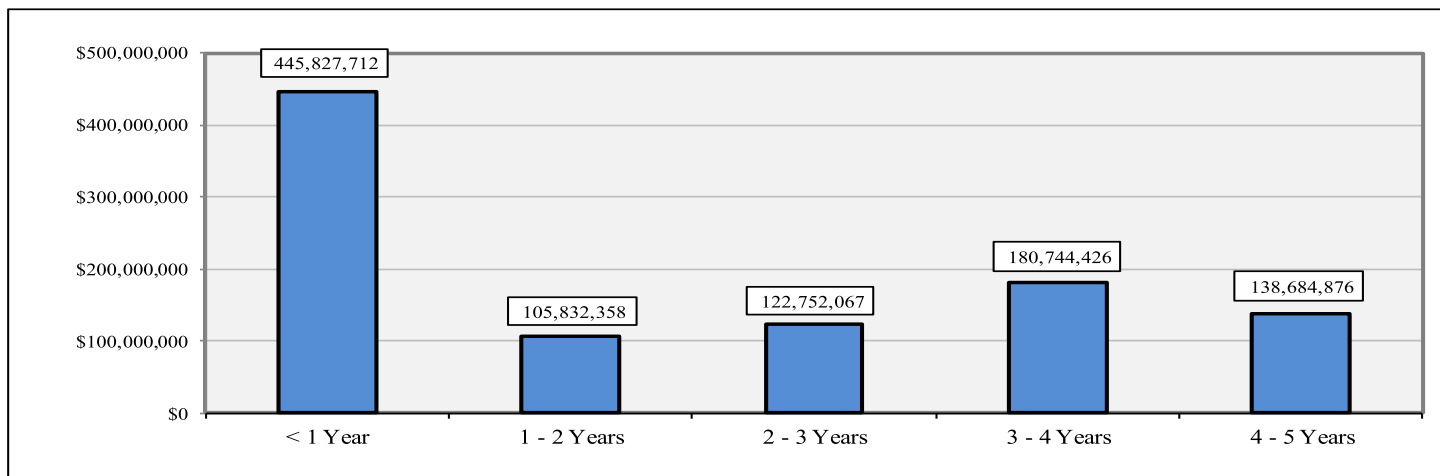
POOL A BY ASSET CLASS



POOL A MATURITY SCHEDULE

Maturity	Market Value	%
< 1 Year	445,827,712	44.86%
1 - 2 Years	105,832,358	10.65%
2 - 3 Years	122,752,067	12.35%
3 - 4 Years	180,744,426	18.19%
4 - 5 Years	138,684,876	13.95%
Total	993,841,439	100.00%

Investment Description	Portfolio at Cost	Yield at Month End
CASH AND EQUIVALENTS	1.40%	1.12%
CALTRUST	4.95%	1.60%
FIVE STAR	2.52%	1.52%
GOVPARTNERS	1.52%	1.65%
CERTIFICATES OF DEPOSIT	7.32%	1.81%
COMMERCIAL PAPER	19.24%	1.79%
CORPORATE BONDS	31.41%	2.10%
GOVERNMENT BONDS	0.98%	1.90%
MUNICIPAL BONDS	11.98%	1.98%
US AGENCY NOTES	18.68%	1.91%



City of Sacramento
 CASH LEDGER
American River Flood Control District
 From 03-01-18 To 03-31-18

Item 2b

All Cash Accounts

Trade Date	Settle Date	Tran Code	Quantity	Security	Amount	Cash Balance
Pool A Interest Receivable						
03-01-18				Beginning Balance		80,588.51
03-31-18	03-31-18	in		Pool A Cash	10,664.48	91,252.99
				Mar 2018 estimated Pool A interest		
					10,664.48	
03-31-18				Ending Balance		91,252.99
Pool A Cash						
03-01-18				Beginning Balance		7,267,268.07
03-31-18				Ending Balance		7,267,268.07

Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

www.treasurer.ca.gov/pmia-laif/laif.asp

April 03, 2018

AMERICAN RIVER FLOOD CONTROL DISTRICT

DISTRICT ENGINEER/MANAGER
165 COMMERCE CIRCLE, SUITE D
SACRAMENTO, CA 95815

[PMIA Average Monthly Yields](#)

Account Number:
90-34-002

[Tran Type Definitions](#)

March 2018 Statement

Account Summary

Total Deposit:	0.00	Beginning Balance:	441,189.24
Total Withdrawal:	0.00	Ending Balance:	441,189.24



River City Bank

WWW.RIVERCITYBANK.COM

PO Box 15247, Sacramento, CA 95851-0247

Return Service Requested

Item 2b



Last statement: February 28, 2018

This statement: March 31, 2018

Total days in statement period: 31

AMERICAN RIVER FLOOD CONTROL DISTRICT
C/O ROBERT MERRITT, CPA
4000 MAGNOLIA HILLS DR
EL DORADO HILLS CA 95762-6561

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0811100952
(0)

Direct inquiries to:
916-567-2836

Public Fund Interest Checking

Account number	0811100952	Beginning balance	\$1,105,596.73
Low balance	\$972,041.82	Total additions	71.91
Average balance	\$1,058,411.06	Total subtractions	133,555.91
Avg collected balance	\$1,058,411	Ending balance	\$972,112.73

DEBITS

Date	Description	Subtractions
03-01	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	0.42
03-02	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	8,793.26
03-14	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	422.89
03-15	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	26,331.54
03-16	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	352.42
03-19	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	7,023.74
03-20	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	9,116.86

AMERICAN RIVER FLOOD CONTROL DISTRICT
 March 31, 2018

Date	Description	Subtractions
03-21	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	32,650.55
03-22	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	1,522.93
03-23	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	962.77
03-26	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	13,856.21
03-29	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	6,116.79
03-30	' Automatic Transfer TRANSFER TO DEPOSIT SYSTEM ACCOUNT XXXXXX0736	26,404.53
03-31	' Service Charge STATEMENT FEE	1.00

CREDITS

Date	Description	Additions
03-31	' Interest Credit	71.91

DAILY BALANCES

Date	Amount	Date	Amount	Date	Amount
02-28	1,105,596.73	03-16	1,069,696.20	03-23	1,018,419.35
03-01	1,105,596.31	03-19	1,062,672.46	03-26	1,004,563.14
03-02	1,096,803.05	03-20	1,053,555.60	03-29	998,446.35
03-14	1,096,380.16	03-21	1,020,905.05	03-30	972,041.82
03-15	1,070,048.62	03-22	1,019,382.12	03-31	972,112.73

INTEREST INFORMATION

Annual percentage yield earned	0.08%
Interest-bearing days	31
Average balance for APY	\$1,058,411.06
Interest earned	\$71.91

AMERICAN RIVER FLOOD CONTROL DISTRICT
March 31, 2018

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0811100952

OVERDRAFT/RETURN ITEM FEES

	Total for this period	Total year-to-date
Total Overdraft Fees	\$0.00	\$0.00
Total Returned Item Fees	\$0.00	\$0.00



River City Bank

WWW.RIVERCITYBANK.COM

PO Box 15247, Sacramento, CA 95851-0247

Return Service Requested

Item 2b



Last statement: February 28, 2018

This statement: March 31, 2018

Total days in statement period: 31

AMERICAN RIVER FLOOD CONTROL DISTRICT
C/O ROBERT MERRITT, CPA
4000 MAGNOLIA HILLS DR
EL DORADO HILLS CA 95762-6561

Page 1
0811090736
(42)

Direct inquiries to:
916-567-2836

Public Fund Interest Checking

Account number	0811090736	Beginning balance	\$-0.42
Enclosures	42	Total additions	133,554.91
Low balance	\$0.00	Total subtractions	133,555.61
Average balance	\$0.00	Ending balance	\$-1.12
Avg collected balance	\$0		

CHECKS

Number	Date	Amount	Number	Date	Amount
6306	03-26	102.00	6329	03-20	421.53
6307	03-21	26,639.81	6330	03-19	430.00
6308	03-22	58.89	6331	03-23	248.92
6309	03-20	399.13	6332	03-20	35.00
6310	03-21	138.40	6333	03-21	2,189.16
6311	03-21	712.34	6334	03-21	23.82
6312	03-22	1,051.13	6335	03-16	352.42
6313	03-22	132.91	6336	03-26	11,560.00
6314	03-20	350.00	6337	03-20	975.00
6315	03-23	120.21	6338	03-23	593.64
6317 *	03-20	338.93	6339	03-20	68.02
6318	03-20	1,940.09	6340	03-20	1,061.38
6319	03-26	44.00	6341	03-21	621.71
6320	03-26	182.81	6342	03-22	200.00
6321	03-21	81.16	6343	03-20	161.30
6322	03-20	1,315.17	6344	03-21	1,401.32
6323	03-26	1,967.40	6345	03-21	373.95
6324	03-20	165.11	6346	03-20	209.76
6325	03-20	1,333.71	6347	03-22	80.00
6326	03-21	70.36	6348	03-19	474.00
6327	03-20	342.73			
6328	03-21	398.52			

* Skip in check sequence

AMERICAN RIVER FLOOD CONTROL DISTRICT
March 31, 2018

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0811090736

DEBITS

<u>Date</u>	<u>Description</u>	<u>Subtractions</u>
03-02	' ACH Withdrawal HEALTHEQUITY INC HealthEqui 180302	150.00
03-02	' ACH Withdrawal CALPERS 3100 100000015164398	801.19
03-02	' ACH Withdrawal CALPERS 1900 100000015216329	2,180.96
03-02	' ACH Withdrawal CALPERS 3100 100000015164358	2,434.74
03-02	' ACH Withdrawal CALPERS 1900 100000015217634	3,226.37
03-14	' ACH Withdrawal INTUIT PAYROLL S QUICKBOOKS 180314 946000047	422.89
03-15	' ACH Withdrawal INTUIT PAYROLL S QUICKBOOKS 180315 946000047	26,331.54
03-19	' ACH Withdrawal HEALTHEQUITY INC HealthEqui 180319	152.95
03-19	' ACH Withdrawal CALPERS 3100 100000015193373	979.24
03-19	' ACH Withdrawal CALPERS 1900 100000015236973	2,248.96
03-19	' ACH Withdrawal CALPERS 3100 100000015193329	2,738.59
03-29	' ACH Withdrawal HEALTHEQUITY INC HealthEqui 180329	150.00
03-29	' ACH Withdrawal CALPERS 3100 100000015193391	979.24
03-29	' ACH Withdrawal CALPERS 1900 100000015246345	2,248.96
03-29	' ACH Withdrawal CALPERS 3100 100000015193346	2,738.59
03-30	' ACH Withdrawal INTUIT PAYROLL S QUICKBOOKS 180330 946000047	26,404.53
03-31	' Service Charge ADDITIONAL DEBITS	1.12

CREDITS

<u>Date</u>	<u>Description</u>	<u>Additions</u>
03-01	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	0.42

AMERICAN RIVER FLOOD CONTROL DISTRICT
March 31, 2018

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Date	Description	Additions
03-02	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	8,793.26
03-14	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	422.89
03-15	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	26,331.54
03-16	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	352.42
03-19	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	7,023.74
03-20	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	9,116.86
03-21	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	32,650.55
03-22	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	1,522.93
03-23	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	962.77
03-26	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	13,856.21
03-29	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	6,116.79
03-30	' Automatic Transfer TRANSFER FROM DEPOSIT SYSTEM ACCOUNT XXXXXX0952	26,404.53

DAILY BALANCES

Date	Amount	Date	Amount	Date	Amount
02-28	-0.42	03-16	0.00	03-23	0.00
03-01	0.00	03-19	0.00	03-26	0.00
03-02	0.00	03-20	0.00	03-29	0.00
03-14	0.00	03-21	0.00	03-30	0.00
03-15	0.00	03-22	0.00	03-31	-1.12

AMERICAN RIVER FLOOD CONTROL DISTRICT
March 31, 2018

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INTEREST INFORMATION

Annual percentage yield earned	0.00%
Interest-bearing days	31
Average balance for APY	\$0.00
Interest earned	\$0.00

OVERDRAFT/RETURN ITEM FEES

	Total for this period	Total year-to-date
Total Overdraft Fees	\$0.00	\$0.00
Total Returned Item Fees	\$0.00	\$0.00

CERTIFICATION

The American River Flood Control District's investment portfolio [] is [is not] in compliance with the District's Financial Management Investments Plan.

The District's investment portfolio is not in compliance in the following respects:

A cash flow analysis confirms that the District [is] [is not] expected to be able to meet its expenditure requirements for the next six months.

The District's cash is insufficient to meet obligations for the next six months as a result of the following:

Attached hereto are the most recent statements of accounts of the following District accounts:

- LAIF Account, State Treasurer's Office **Dated March 2018**
- Investment Pool A Account, City of Sacramento **Dated March 2018**
- District Checking Account, River City Bank **Dated March 2018**
- District Repurchase Account, River City Bank **Dated March 2018**

Certified by: _____ Date: _____
Cyril Shah, District Treasurer

AMERICAN RIVER FLOOD CONTROL DISTRICT
Cash Flow Report
July 2017 through June 2018

Special Projects Expenses	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	TOTAL
702 - Engineering/Survey Studies	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
703 - Encroachment Remediation &	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
704 - Vegetation Management	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
705 - Small Capital Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
707 - Levee Standards Compliance	0.00	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 Special Projects	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Capital Outlay: Flood Control	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	TOTAL
700 - Bank Protection	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
701 - Maggie Creek	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
706 - Property Acquisition	0.00	7,593.18	0.00	1,118.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,711.98
709 - Equipment Purchase (> \$500)	0.00	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 Capital Outlay: Flood Control	0.00	7,593.18	0.00	1,118.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,711.98

Income	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18	TOTAL
120 - Benefit Assessment	0.00	40,376.68	0.00	0.00	0.00	32,307.85	788,621.15	0.00	0.00	0.00	0.00	0.00	861,305.68
122 - SAFCA CAD4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123 - Interest	1,807.07	48.24	36.23	2,091.19	17.48	37.10	2,004.30	72.50	71.91	1,703.52	0.00	0.00	7,889.54
124 - O&M Agreements	0.00	0.00	0.00	0.00	0.00	245,528.40	0.00	0.00	0.00	0.00	0.00	0.00	245,528.40
126 - Miscellaneous Income	0.00	0.00	0.00	3,657.50	0.00	0.00	0.00	0.00	0.00	23,093.22	0.00	0.00	26,750.72
Total Income	1,807.07	40,424.92	36.23	5,748.69	17.48	277,873.35	790,625.45	72.50	71.91	24,796.74	0.00	0.00	1,141,474.34

Fund Balance

District Operations Fund	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Beginning Balance	2,294,495.71	1,165,418.06	1,071,872.55	941,762.91	781,153.84	605,367.11	726,096.56	1,399,555.88	1,271,938.12	1,144,512.96	1,037,594.59	0.00
Income	1,807.07	40,424.92	36.23	5,748.69	17.48	277,873.35	790,625.45	72.50	71.91	24,796.74	0.00	0.00
Expenses	1,130,884.72	133,970.43	130,145.87	166,357.76	175,804.21	157,143.90	117,166.13	127,690.26	127,497.07	131,715.11	37,519.31	0.00
Ending Balance	1,165,418.06	1,071,872.55	941,762.91	781,153.84	605,367.11	726,096.56	1,399,555.88	1,271,938.12	1,144,512.96	1,037,594.59	1,000,075.28	0.00

Capital Outlay Reserve Fund	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Beginning Balance	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	0.00
Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ending Balance	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	1,065,000.00	0.00

Retiree Health Benefit Reserve Fund	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Beginning Balance	1,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	0.00
Income	1,000,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ending Balance	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	2,443,558.00	0.00

Flood Emergency Response Reserve Fund	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Beginning Balance	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	0.00
Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ending Balance	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	0.00

Emergency Repair Reserve Fund	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
Beginning Balance	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	0.00
Income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Expenses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ending Balance	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	1,500,000.00	0.00

Total Balance	7,673,976.06	7,580,430.55	7,450,320.91	7,289,711.84	7,113,925.11	7,234,654.56	7,908,113.88	7,780,496.12	7,653,070.96	7,546,152.59	7,508,633.28	0.00
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American River Flood Control District
Statement of Operations
July 1, 2017 to April 30, 2018 (Ten Months Ending of Fiscal Year 2017-2018)
For Internal Use Only

	Year to Date July 1, 2017 to April 30, 2018	Budget	Percent of Budget
Revenues			
Benefit assessment	\$ 788,632	\$ 1,385,000	56.94%
Consolidated capital assessment	-	650,000	0.00%
Interest	97,391	75,000	129.85%
O & M agreements	-	225,000	0.00%
Miscellaneous	3,658	3,500	104.51%
Total Revenues	889,681	2,338,500	38.04%
M & O Expenses			
Salaries and wages	516,910	664,645	77.77%
Payroll tax expense	37,853	53,172	71.19%
Pension expense	98,654	124,602	79.18%
Compensation insurance	19,835	33,232	59.69%
Medical/dental/vision	153,943	189,474	81.25%
Fuel/oil reimbursement	14,821	30,000	49.40%
Equipment rental	28,347	6,500	436.11%
Equipment repairs/parts	32,979	40,000	82.45%
Equipment purchases (< \$5,000)	-	5,000	0.00%
Shop supplies	12,453	12,000	103.78%
Levee maint. (supp. & material)	5,952	17,000	35.01%
Levee maint. chemicals	13,087	20,000	65.44%
Levee maint. services	53,103	34,000	156.19%
Rodent abatement (supplies & materials)	7,654	10,000	76.54%
Employee uniforms	1,834	5,000	36.68%
Staff training	4,071	15,000	27.14%
Miscellaneous	711	2,000	35.55%
Small tools & equipment	1,187	3,000	39.57%
Emergency preparedness program	6,907	20,000	34.54%
Engineering services	12,753	8,000	159.41%
Encroachment remediation	-	15,000	0.00%
Total M & O Expenses	1,023,054	1,307,625	78.24%
Administration Expenses			
Board of trustees compensation	5,199	7,900	65.81%
Trustee expenses	1,074	1,750	61.37%
Accounting services	13,310	15,000	88.73%
Legal services (general)	14,158	50,000	28.32%
Utilities	23,597	25,000	94.39%
Telephone	13,508	12,500	108.06%
Retiree benefits	124,825	135,270	92.28%
Office equipment/furniture	-	10,000	0.00%
Office supplies	916	2,000	45.80%
Auto allowance	5,901	7,100	83.11%
Parking reimbursement	29	150	19.33%
General office expense	8,224	13,000	63.26%
Technology and software	5,574	17,000	32.79%
Dues and associations	21,124	25,000	84.50%
Property and liability insurance	6,318	30,000	21.06%
Conference/workshop/seminar	-	1,500	0.00%
Public relations/information	22,962	35,000	65.61%
Miscellaneous	4,620	5,000	92.40%
Employee morale/wellness	882	1,500	58.80%
Investment fees	7,282	13,000	56.02%
Community services	1,000	1,500	66.67%
Bookkeeping services	6,169	12,000	51.41%
Property taxes	1,660	3,000	55.33%
Building maintenance	3,801	17,000	22.36%
County Dtech fees for DLMS	37,904	60,477	62.68%
County assessment fees	1,061	21,000	5.05%
Interest expense	432	-	Not budgeted
Total Administration Expenses	331,530	522,647	63.43%
Special Projects Expenses			
Engineering studies/survey studies	-	15,000	0.00%
Levee standards compliance	11,173	100,000	11.17%
Small capital projects	8,610	50,000	17.22%
Total Special Project Expenses	19,783	165,000	11.99%
Capital Outlay			
Equipment purchases (over \$5,000)	49,396	50,000	98.79%
Total Capital Outlay	49,396	50,000	
Capital Outlay: District Headquarters Build-Out			
Building improvements/maintenance	-	20,000	0.00%
La Riviera improvements/maintenance	2,848	30,000	9.49%
	2,848	50,000	

Note: Amounts above are not audited

The above information is current through the last day of the previous month's bank activity.

Data has been verified by the bookkeeper and physical copies of checks have not been reviewed or received and some checks may not have cleared the bank account.

American River Flood Control District

Resolution No. 2018-06

**LEVYING A BENEFIT ASSESSMENT
ESTABLISHING THE RATES THEREOF
AND
REQUESTING COLLECTION OF BENEFIT ASSESSMENTS**

WHEREAS, the Board of Trustees of American River Flood Control District is authorized under various sections of the American River Flood Control District Act, as amended, to levy an assessment upon property in benefit zones within said District, to be apportioned in accordance with prescribed and adopted percentages for said zones, to carry out the objectives and purposes of said Act and to pay costs and expenses of maintaining, operating, extending, and repairing facilities, works, and improvements of said District for the ensuing fiscal year; and

WHEREAS, pursuant to Sections 17(a), 17(b), and 18 of said Act, as amended, the District is further authorized and empowered to elect to have its assessments collected by the County of Sacramento; and

WHEREAS, the Board of Trustees of District has previously divided the District into zones of benefit (Zones A through C), which zones are designated on a map or plat of the District filed in the office of said Board of Trustees, a copy of which has been previously provided to the Auditor of the County of Sacramento; and

WHEREAS, no ballot or election is required under Article XIID of the California Constitution, since assessment rates are not being increased for the FY 2018-19 assessment; and

WHEREAS, the Board has duly considered the matter of the amount of funds for the stated purposes, each and all of them, and being fully advised;

NOW THEREFORE BE IT RESOLVED as follows:

1. There be and is hereby levied upon and against the lands within the American River Flood Control District a benefit assessment equal in rate to the rate previously established by the County Auditor-Controller for FY 1996-97 for each benefit zone (Zone A, Zone B, and Zone C) and land use category established by the above referenced Water Code sections.
2. For each benefit assessment Zone within the District the assessment rate shall be as follows:
 - Zone A: 15.5456 for each benefit product (same as FY 96-97)
 - Zone B: 15.1251 for each benefit product (same as FY 96-97)
 - Zone C: 4.9696 for each benefit product (same as FY 96-97)

3. The Board of Trustees of District hereby elects to have the District's assessments collected by the County of Sacramento pursuant to Sections 17(a), 17(b), and 18 of the said District Act, as amended; said assessments to be collected at the same time and manner and subject to the same penalties and interest for delinquencies as shall apply to the taxes collected by the County.
4. The Secretary of the Board is hereby authorized and directed to transmit a certified copy of this Resolution to the Auditor, Municipal Services Agency and County Executive of the County of Sacramento immediately upon adoption with the request that the County Municipal Services Agency compute and impose upon the respective Zones this District's benefit assessment, based on the above prescribed rates.

PASSED AND UNANIMOUSLY ADOPTED this 11th day of May, 2018.

ATTEST:

President
Board of Trustees

Secretary
Board of Trustees

Invoices Paid

	DATE	AMOUNT	CHECK #
Quickbooks (Employees)	3/30/18	\$108.25	EFT
Quickbooks (Employees)	4/13/18	\$29.25	EFT
HSA (Employee)	4/16/18	\$150.00	EFT
HSA (Miscellaneous Admin)	4/16/18	\$2.95	EFT
Quickbooks (Trustees)	4/19/18	\$13.00	EFT
Quickbooks (Employees)	4/30/18	\$108.25	EFT
HSA (Employee)	5/3/18	\$150.00	EFT
HSA (Miscellaneous Admin)	5/3/18	\$2.95	EFT
Costco (Shop Supplies, Trustees)	5/8/18	\$25.55	6403
	Total	\$452.70	

Trustee Compensation

	DATE	GROSS	NET	CHK#
4/13/18 Board Meeting				
Holloway, Brian F	4/20/18	\$95.00	\$86.78	Direct Dep
Pavao, William J	4/20/18	\$95.00	\$86.79	Direct Dep
Redway, Bettina C	4/20/18	\$95.00	\$86.78	Direct Dep
Shah, Cyril A	4/20/18	\$95.00	\$86.78	Direct Dep
	Total	\$380.00	\$347.13	

Trustee Taxes

	DATE	AMOUNT	CHK#
4/13/18 Board Meeting			
Federal Tax Payment	4/19/18	\$11.02	EFT
CA Withholding & SDI	4/19/18	\$3.80	EFT
CA UI & ETT	4/19/18	\$6.86	EFT
	Total	\$21.68	

Payroll Summary

	DATE	GROSS	NET	CHK#
PP ending 4/15/18				
Malane Chapman	4/16/18	2678.40	1728.57	Direct Dep
Elvin Diaz	4/16/18	2021.22	1526.99	Direct Dep
David Diaz	4/16/18	2246.36	1567.83	Direct Dep
Gilberto Gutierrez	4/16/18	2521.40	1592.40	Direct Dep
Ross Kawamura	4/16/18	3762.50	2111.74	Direct Dep
Tim Kerr	4/16/18	6851.08	4978.03	Direct Dep
Erich Quiring	4/16/18	2246.36	1501.66	Direct Dep
Jose Ramirez	4/16/18	2521.40	1813.59	Direct Dep
Zerimar Robles	4/16/18	1958.00	1559.08	Direct Dep
PP ending 4/30/18				
Malane Chapman	5/1/18	2946.24	1902.43	Direct Dep
Elvin Diaz	5/1/18	1998.48	1510.72	Direct Dep
David Diaz	5/1/18	2221.12	1549.98	Direct Dep
Gilberto Gutierrez	5/1/18	2493.04	1576.51	Direct Dep
Ross Kawamura	5/1/18	3784.00	2127.99	Direct Dep
Tim Kerr	5/1/18	6851.08	4978.03	Direct Dep
Erich Quiring	5/1/18	2221.12	1487.26	Direct Dep
Jose Ramirez	5/1/18	2493.04	1793.18	Direct Dep
Zerimar Robles	5/1/18	1936.00	1543.48	Direct Dep
	Total	\$51,814.84	\$36,849.47	

Employee & Relief GM Taxes

	DATE	AMOUNT	CHK#
PP ending 4/15/18			
Federal Tax Payment	4/16/18	\$6,567.12	EFT
CA Withholding & SDI	4/16/18	\$1,210.51	EFT
CA UI & ETT	4/16/18	\$0.00	EFT
PP ending 4/30/18			
Federal Tax Payment	5/1/18	\$2,476.00	EFT
CA Withholding & SDI	5/1/18	\$1,225.62	EFT
CA UI & ETT	5/1/18	\$0.00	EFT
	Total	\$11,479.25	

Employee Pension

	DATE	AMOUNT	CHK#
PP ending 4/15/18			
PERS Retirement Contribution (Unfunded Liability)	5/3/18	\$3,226.37	EFT
PERS Retirement Contribution	4/16/18	\$3,538.52	EFT
457 Deferred Comp (Employee Paid)	4/16/18	\$2,173.21	EFT
457 District Contribution	4/16/18	\$80.00	EFT
PP ending 4/30/18			
PERS Retirement Contribution	5/1/18	\$3,717.81	EFT
457 Deferred Comp (Employee Paid)	5/1/18	\$2,168.96	EFT
457 District Contribution	5/1/18	\$80.00	EFT
	Total	\$14,984.88	

Total of Invoices Paid and Payroll \$64,135.11

The Three Rs (and perhaps a Fourth)

Introduction:

When the State of California originally provided assurances to the U.S. Army Corps of Engineers (USACE) for the Sacramento River and San Joaquin River Flood Control Projects, the State signed an MOU with USACE in which it stated that it “fully recognizes and accepts its obligation to operate and maintain all completed project works....” SRFCP 1953 MOU. That MOU further provided that the State is obligated for “the operation and maintenance of all of the works, after completion, in accordance with the regulations prescribed by the Secretary of the Army.” This language set the standard for actions by the State. Subsidiary to its obligations to USACE, the State entered into multiple assurance agreements with local maintaining agencies (LMAs) whereby the LMAs agreed to operate and maintain certain portions of the system.¹

As a result of Congressional directive in the 1986 Water Resources Development Act,² USACE changed its guidance and assurance agreements to no longer merely require operation and maintenance of authorized facilities (the term “maintain” previously already included the use of the term “repair”)³ but rather to now require operation, maintenance, repair, replacement, and rehabilitation (OMRR&R). While the terms repair, replacement, and rehabilitation can very well be considered subsidiary to maintenance when applied to things like flap gates, gravel roads, and pumps (in other words, *routine* RR&R), many LMAs are concerned about the possible application of the repair, replacement, and rehabilitation obligation to improvements to federal project features that have traditionally been the domain of USACE Civil Works or other capital expenditure programs.

Discussion

Any consideration of the meaning of the terms repair, replacement, and rehabilitation must be considered in the context of how the terms have been defined by USACE. In 1994, USACE issued ER 1110-2-401 which provided definitions for each of the terms:

¹ See also Water Code 8370 which, while it’s questionable what effect it has, also uses the terms maintain and operate: “It is the responsibility, liability and duty of the reclamation districts, levee districts, protection districts, drainage districts, municipalities, and other public agencies within the Sacramento River Flood Control Project limits, to maintain and operate the works of the project within the boundaries or jurisdiction of such agencies, excepting only those works enumerated in Section 8361 and those for which provision for maintenance and operation is made by Federal law.”

² 33 USC 2213 “Any project to which this section applies (other than a project for hydroelectric power) shall be initiated only after non-Federal interests have entered into binding agreements with the Secretary to pay 100 percent of the operation, maintenance, and replacement and rehabilitation costs of the project, to pay the non-Federal share of the costs of construction required by this section, and to hold and save the United States free from damages due to the construction or operation and maintenance of the project, except for damages due to the fault or negligence of the United States or its contractors.”

³ But note the limited context in which the term “repair” was used: “Maintenance. The Superintendent shall provide at all times such maintenance as may be required to insure serviceability of the structures in time of flood. Measures shall be taken to promote the growth of sod, exterminate burrowing animals, and to provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces....” 33 C.F.R. 208.10(b)(1).

Repair is considered to entail those activities of a routine nature that maintain the project in a well kept condition. Replacement covers those activities taken when a worn-out element or portion thereof is replaced. Rehabilitation refers to a set of activities as necessary to bring a deteriorated project back to its original condition.

While these definitions are generally helpful, they are still subject to interpretation of whether one must rehabilitate a pump station (traditional routine O&M), or a dam or a levee (more commonly viewed as a capital improvement). However, the next line in that definition is helpful in creating a limitation:

RR&R actions are to conform to the project as-built plans and specifications unless other arrangements are made with the district commander.

Thus, a levee designed decades ago using less stringent engineering standards cannot be upgraded to the current engineering standards on the basis of RR&R. Similarly, RR&R cannot compel repair of damage from a flood event exceeding the original design flood. At the same time, earthen levees are typically built to lower engineering standards than other public safety infrastructure; therefore some level of minor damage that requires maintenance or repair is to be expected following the design event.

Another useful piece of guidance was issued on August 16, 2005 by Don Riley, the USACE Director of Civil Works. In that guidance document, General Riley notes:

Definition of Reconstruction. Cost shared reconstruction will be defined by elimination. Reconstruction excludes design or construction deficiencies. Further, ***reconstruction is limited to addressing impediments that prevent a project from performing as authorized after all maintenance, as required by the project operation and maintenance manual and the Code of Federal Regulations, has been accomplished and any deficiencies resulting from a lack of maintenance have been addressed. Reconstruction will consist of addressing the major performance deficiencies caused by a long-term degradation of the foundation, construction materials, and engineering systems that have exceeded their expected service lives and the resulting inability of the project to perform its authorized project functions.*** In addressing reconstruction needs, the latest design standards and efficiency improvements should be incorporated into the project.

This statement is helpful in that it makes clear that efforts to address major performance deficiencies that are caused by long-term degradation of the foundation, construction materials, and engineering systems exceeding their expected lives are not RR&R. To use an example, foundation piping as a result of poor rodent management could be a deficiency to be addressed by the non-Federal sponsor under RR&R, while foundation piping due to subsurface foundation conditions would not be a non-Federal sponsor obligation under RR&R. This suggests that one test to determine whether something should be addressed under RR&R, or should be addressed under reconstruction (the fourth “R”), may be determined in part by whether consistent adherence to routine O&M would have prevented the problem.

Another helpful consideration is the way in which substantial damage to levees from extreme flood events have historically been handled. In these cases, USACE has typically repaired major

damage using the P.L.84-99 or Civil Works authorities. When USACE did not undertake action to repair a damaged levee from a storm event, and the repair exceeded the LMA's financial capacity, the State of California usually stepped in to repair the levee, often treating it as a capital project.

Conclusion

These sources coupled with past operations suggests that we actually have a fair amount of certainty as to what the RR&R obligation is and isn't, and what level of funding is required to satisfy the RR&R obligation:

- RR&R **is not** work undertaken to allow the facility to function better than in the as-built condition.
- RR&R **is not** work undertaken to address major, non-routine flood system damage caused by extreme floods or other rare events.
- RR&R **is** work undertaken to achieve the requirements of the O&M manual which largely covers routine maintenance.

As a result, an LMA's O&M budget (including RR&R) should be based on the level of funding required to achieve the requirements of the O&M manual with a reserve to fund repair, replacement, and rehabilitation of facilities that have a defined and predictable service life, such as a pump station or a gravity drain.

American River Flood Control District

SAFCA Agreement for OMRR&R

Staff Report March 2018

Discussion:

The Sacramento Area Flood Control Agency(SAFCA) has developed a levee improvement project to increase the level of protection of the District's Arcade Creek Levees. The project, called the North Sacramento Streams(NSS) Levee Improvement Project, will be cost-shared with the State of California(State). The State requires a Local Project Partnering Agreement with a local project sponsor such as SAFCA to assign roles, responsibilities, and cost-sharing provisions for the work.

The State also requires an Operation, Maintenance, Repair, Replacement, and Rehabilitation(OMRR&R) Agreement between the State and the local sponsors. In recent years, the State also identifies the Local Maintaining Agency as an entity that must be a party to the OMRR&R Agreement. In order for SAFCA to obtain cost-sharing funding to construct the NSS project, SAFCA staff believes that the District must sign the State OMRR&R Agreement.

In the past, the District provided assurances to the State that they would Operate and Maintain any levee facilities constructed and turned over to the District. It is not evident that the District has ever committed to Repair, Replace, or Rehabilitate(RR&R) any levee facilities.

Many Local Maintaining Agencies in the Central Valley are struggling with the idea of RR&R and their ability to pay for the enormous costs associated with RR&R. The Sutter Butte Flood Control Agency in the Yuba City area has acknowledged this discrepancy between the costs of RR&R and the small budgets of LMAs and has crafted an alternate definition for OMRR&R that better captures what an LMA could actually provide. This draft description of LMA OMRR&R is included in your materials for this agenda item.

During a recent meeting with District Legal Counsel and SAFCA staff, three possible options were identified to help SAFCA construct the NSS project with State funding:

1. Sign the OMRR&R Agreement
2. Sign the OMRR&R Agreement but include a transmittal letter indicating that the signature is only given because there is no feasible alternative
3. Sign the OMRR&R Agreement but indicate the District has an alternate definition of OMRR&R

Recommendation:

The General Manager recommends that the Board of Trustees choose one of the three listed options to sign the OMRR&R Agreement and thereby allow SAFCA to construct the NSS project with cost-shared State funding.

OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, AND
REHABILITATION AGREEMENT BETWEEN
The Central Valley Flood Protection Board
AND
American River Flood Control District and
the Sacramento Area Flood Control Agency
FOR
The Levee Accreditation Project
North Sacramento Streams Levee Improvement Project

This Operation, Maintenance, Repair, Replacement, and Rehabilitation Agreement (“OMRR&R Agreement”) is entered into by and between the State of California (“State”), acting by and through the Central Valley Flood Protection Board, or any successor thereto, (“Board”), American River Flood Control District (“Local Maintaining Agency”), and, for the limited purpose of Section I.A.3., hereof, the Sacramento Area Flood Control Agency (“Funding Recipient”) on this _____ day of _____, 2017 in view of the following circumstances:

1. The North Sacramento Streams Levee Improvement Project (the “Project”) is being undertaken under the Department of Water Resources’ (Department) Urban Flood Risk Reduction (“UFRR”) Program. The Project is a part of the Sacramento River Flood Control Project which was authorized by Congress by Section 101(a)(1) of the Water Resources Development Act (WRDA) of 1996 (Pub. L. No. 104-303, § 101(a)(1), 110 Stat. 3658, 3662-3663 (1996)), as amended. Amendments to this authority are as follows: 1) Section 366 of WRDA of 1999 (Pub. L. 106-53, § 366, 113 Stat. 269, 319-20 (1999)); 2) Section 129 of the Energy and Water Development Appropriations Act (EWDAA) of 2004 (Pub. L. No. 108-137, § 129, 117 Stat. 269, 1839 (2003)); 3) Section 130 of the Consolidated Appropriations Act (CAA) of 2008 (Pub. L. No. 110-161, § 130, 121 Stat. 1844, 1947 (2007)); and 4) Section 7002 of the Water Resources Reform and Development Act (WRRDA) of 2014 (Pub. L. No. 113-121, §7002, 128 Stat. 1193, 1366 (2014)).and the Water Infrastructure Improvements for the Nation Act (WINN) of 2016 (Pub. L. No 114-322, §1401) and is a part of the Sacramento River Flood Control Project which was authorized by Congress on March 1, 1917, and amended on May 16, 1928, August 26, 1937, August 18, 1941, August 17, 1954, and July 14, 1960.
2. State funding had become available for the Project:
 - The voters of California approved the California Disaster Preparedness and Flood Prevention Bond Act of 2006 (Proposition 1E) on November 7, 2006, making available proceeds from the sale of general obligation bonds for flood control work and other purposes.
 - The State, acting by and through the Department of Water Resources (“Department”), solicited applications for funding for its Urban Flood Risk Reduction (UFRR) Program.
 - The Funding Recipient applied for funding and ~~signed an the~~ UFRR Funding Agreement- was executed on February 23, 2015 (“Funding Agreement”). This Funding ~~agreement~~Agreement is between the Department and the Sacramento Area Flood Control Agency (“Funding Recipient”) for the Project.
 - The Funding Agreement provides that the Funding Recipient will be responsible for construction, operation, maintenance, repair, replacement, and rehabilitation (“OMRR&R”) of projects on land and rights-of-way that will ultimately be transferred to the Sacramento and San Joaquin Drainage District, acting by and through the Board.

- The Department has agreed to enter into the Funding Agreement on the condition that the Funding Recipient enters into this OMRR&R Agreement under which ~~the Central Valley Flood Protection Board (“The Board”)~~Board will oversee OMRR&R for the Project for the State of California, as part of the State Plan of Flood Control.
 - Under the Funding Agreement, the Funding Recipient may agree to assume the responsibility of the Local Maintaining Agency as set out in this OMRR&R Agreement, or may agree with a Local Maintaining Agency that it shall assume responsibility for OMRR&R of the Project, provided that the Funding Recipient shall seek to assume responsibility for OMRR&R if for any reason the Local Maintaining Agency fails to perform under this OMRR&R Agreement.
 - The Funding Recipient has agreed with the Local Maintaining Agency that the Local Maintaining Agency shall assume responsibility for OMRR&R by entering into this OMRR&R Agreement.
 - The Department has agreed to enter into the Funding Agreement with the Funding Recipient on the condition that the Local Maintaining Agency enter into the OMRR&R Agreement and that the Funding Recipient shall seek to assume responsibility for OMRR&R if for any reason the Local Maintaining Agency fails to perform under this OMRR&R Agreement.
3. It is not expected that the federal government will provide funding for the Project at this time, but in anticipation that federal funds may become available eventually:
- The Funding Agreement requires the Funding Recipient to seek credit for the expenditures made under the Funding Agreement from the federal government, acting by and through the U.S. Army Corps of Engineers (“USACE”), and to enter into agreements necessary to obtain credit or reimbursement from the USACE.
 - The parties agree that this OMRR&R Agreement may be superseded by one or more agreements acceptable to the USACE, the Department, and the Board that gives satisfactory assurances to the federal government and the Board that the required local cooperation will be furnished in connection with the Project.
4. The Local Maintaining Agency agrees that it already has responsibility for ~~OMRR&R for~~ existing portions of the Project (as hereinafter defined and as depicted on the plat attached here to as Figure 1) under California Water Code Section 12642 which states, and under which the State contends, that in all cases where the Federal Government does not maintain and operate projects, it is the responsibility and duty of the county, city, state agency, or public district affected to maintain and operate flood control and other works, ~~after constructed pursuant to the Water Code, after their~~ completion, and hold and save the State and the United States free from damages.
5. The Board has agreed to enter into this OMRR&R Agreement on the condition that the Local Maintaining Agency provides the Board with the assurances specified in this OMRR&R Agreement that Local Maintaining Agency or Funding Recipient will be responsible for OMRR&R of the Project upon its completion; and will, as described below, hold and save the federal government, State, their representatives, officers, directors, and employees, including their attorneys, ~~as well as their successors and assigns,~~ free and harmless from any and all claims and damages arising from OMRR&R of the Project, and Funding Recipient will, as described below, hold and save the federal government, State, their representatives, officers, directors, and employees, including their attorneys, ~~as well as their successors and assigns,~~ free and harmless from any and all claims and damages arising from construction of the Project.

6. The Board, Funding Recipient, and the Local Maintaining Agency have agreed that this OMRR&R Agreement will set forth not only their agreement with respect to OMRR&R for the Project, but also for work funded under prior and future funding agreements related to the Project, on land and rights-of-way that have been or will ultimately be transferred to the Sacramento and San Joaquin Drainage District, acting by and through the Board, and all of the federally and State authorized flood facilities related to the project that are within the Local Maintaining Agency's boundaries.

NOW, THEREFORE, IT IS HEREBY AGREED:

For purposes of this OMRR&R Agreement, the terms below are defined as indicated:

“Board:” The State of California Central Valley Flood Protection Board or any successor thereto.

“Department:” The State of California Department of Water Resources.

~~**“Functional Portion of the Project:”** A completed portion of the Project to be constructed under the Overall Work Plan as determined by the Board to be suitable to operate and maintain in advance of completion of construction of the entire Project.~~

“Funding Agreement:” Agreement between the State of California Department of Water Resources and the Sacramento Area Flood Control Agency for The Levee Accreditation Project dated February 23, 2017, Agreement Number 4600011724, as amended.

“Funding Recipient:” The Sacramento Area Flood Control Agency (SAFCA), a public agency in the State of California, duly organized, existing, and acting pursuant to the laws thereof, which is the signatory to the Funding Agreement.

“Local Maintaining Agency:” The American River Flood Control District, a public agency in the State of California, duly organized, existing, and acting pursuant to the laws thereof, which has been designated by the Funding Recipient as the agency which will assume responsibility for OMRR&R for any Functional Portion of the North Sacramento Streams Levee Improvement Project.

“OMRR&R:” Operation, maintenance, repair, replacement, and rehabilitation of the Project.

“OMRR&R Agreement:” This agreement between the Central Valley Flood Protection Board, the Sacramento Area Flood Control Agency and American River Flood Control District for OMRR&R of the Project.

“Overall Work Plan:” The plan described in the Funding Agreement ~~in Paragraph [22],~~ as amended, and Funding Agreement Exhibit A, as amended.

“Post Construction Performance Reports:” This report shall be prepared annually in compliance with Assembly Bill 156 (Stats. 2007, ch. 368) and comply with Section 9140 of the California Water Code.

~~**“Project:”** The Project Site described in the Overall Work Plan, but also including all~~ **“Project:”** All of the federally and State authorized flood facilities to the extent to which they are within the Local Maintaining Agency's boundaries as shown in Figure 1.

“Project Site:” The location of the North Sacramento Streams Levee Improvement Project where permanent improvements are made to facilities of the State Plan of Flood Control.

“North Sacramento Streams Levee Improvement Project:” The ~~project~~ flood risk reduction project features of such North Sacramento Streams Levee Improvement Project as described in the Overall Work Plan described in the relevant Funding Agreement, as amended.

“Standard Operation and Maintenance Manual:” A document prepared by the Funding Recipient and approved by the Local Maintaining Agency and submitted to the State for review, comment and approval that will govern the operation, maintenance, repair, replacement and rehabilitation of the Project. This manual will include all manuals related to the State Plan of Flood Control facilities covered by this OMRR&R agreement, including those prepared by the USACE and/or Board for flood, ecosystem, habitat, mitigation or other purposes and any other such manuals.

“State:” The State of California, acting by and through the Board.

“State Plan of Flood Control:” The state and federal flood control works, lands, programs, plans, conditions, and mode of maintenance and operations described in Cal. Pub. Res. Code § 5096.805(j).

“USACE:” The United States Army Corps of Engineers.

SECTION I: Obligations of the Local Maintaining Agency, and, in part, the Funding Recipient.

A. General Obligations. The Local Maintaining Agency, and, in part, as provided in Subsection 3 and 4, below, the Funding Recipient agree to the following:

1. To cause to perform OMRR&R for the Project, without limitation, in accordance with the Project design specifications, environmental permits, environmental impact reports, regulations, and directions prescribed by the State, all without any cost to the State. The duties of the Local Maintaining Agency to perform OMRR&R for all State Plan of Flood Control Project features shall be performed in a manner that does not diminish the flood protection afforded by or jeopardize the structural integrity of the Project and the flood control system of which the Project is part. The duties of the Local Maintaining Agency pursuant to this paragraph are described further in Section I-B below.
2. To defend, indemnify, hold and save the federal government and the State, to the extent allowed by law, their representatives, officers, directors, agents, and employees, including their attorneys ~~as well as their successors and assigns~~ free and harmless, to the extent permitted by law, from any and all liability for any claims and damages (including inverse condemnation) that may arise out of this OMRR&R Agreement, including but not limited to any claims or damages arising from the construction and performance of OMRR&R under this Agreement.
3. The Funding Recipient agrees to defend, indemnify, hold and save the federal government and the State, to the extent allowed by law, their representatives, officers, directors, agents, and employees, including their attorneys ~~as well as their successors and assigns~~ free and harmless, to the extent permitted by law, from any and all liability for any claims and damages (including inverse condemnation) that may arise out of construction of the Project, and to assume responsibility for OMRR&R if for any reason the Local Maintaining Agency fails to perform under this Agreement.
4. The Funding Recipient agrees to cause to perform OMRR&R of all mitigation features of the Project, without limitation, in accordance with environmental permits, environmental impact reports, ~~regulations, and directions prescribed by the State, all without any cost to the State~~ and regulations.

B. Specific Obligations to Operate, Maintain, Repair, Replace, and Rehabilitate

1. The Local Maintaining Agency hereby accepts responsibility for OMRR&R of the Project. The Local Maintaining Agency agrees that it will be responsible for OMRR&R of the

Project as further explained in: (1) the Standard Operation and Maintenance Manual for the Project and (2) any applicable Supplement to the Standard Operation and Maintenance Manual for the Project.

2. The Local Maintaining Agency agrees to cooperate in the Funding Recipient's development of a Standard Operation and Maintenance Manual for State Plan of Flood Control features of the Project as required by Board permits issued to The Funding Recipient for the Project. The Standard Operation and Maintenance Manual for the Project or Functional Portions of the Project may be a stand-alone document or an amendment to the Standard Operation and Maintenance Manual for the Project as directed by the Board. The Local Maintaining Agency acknowledges and the Funding Recipient acknowledge that changes to the Standard Operation and Maintenance Manual of State Plan of Flood Control facilities may be made by the State and the USACE before the document becomes final. The State may make reasonable changes but shall consult with Local Maintaining Agency and Funding Recipient prior to making such changes. Local Maintaining Agency shall be required to update the Standard Operation and Maintenance Manual as may be necessary or as required by the Board and shall make a copy available to the State and Funding Recipient within three (3) days after the State or Funding Recipient so requests. Local Maintaining Agency shall be responsible for OMRR&R in accordance with any revised version of the Standard Operation and Maintenance Manual for the Project or any Supplement to the Standard Operation and Maintenance Manual.

3. The Local Maintaining Agency hereby gives the State and Funding Recipient the right to enter, at reasonable times and in a reasonable manner, upon the Project Site and land which it owns or controls for access to the Project Site for the purpose of: (i) conducting subsequent inspections to verify that the Local Maintaining Agency is complying with its obligations under this OMRR&R Agreement; and (ii) operating, maintaining, repairing, replacing, or rehabilitating any part of the Project located at or accessible by the Project Site in conjunction with any present or future flood control plan if in the reasonable judgment of State or Funding Recipient, the Local Maintaining Agency fails to comply with its obligations under this OMRR&R Agreement. In the event the State assumes title to any of the land to which the Local Maintaining Agency needs access to fulfill the obligations set forth in the paragraph, the State grants an irrevocable license to the Local Maintaining Agency and Funding Recipient to enter the land to fulfill its obligations under this OMRR&R Agreement.

4. If the Local Maintaining Agency has failed or refused to perform the obligations set forth in this OMRR&R Agreement or the requirements of the manuals mentioned above, ~~the State~~ Funding Recipient may take appropriate actions including proceedings to establish a maintenance area under Water Code Section 12878 *et seq.*

If the Local Maintaining Agency has failed or refused to perform the obligations set forth in this OMRR&R Agreement or the requirements of the manuals mentioned above, and for any reason the Funding Recipient is not able to take appropriate actions under these provisions of law, then the Funding Recipient may take appropriate actions under this OMRR&R Agreement as follows: If the failure or refusal constitutes, in the sole discretion of the Funding Recipient, a threat to the continued ability of the Project or functional portion thereof to perform in a manner necessary to provide its designed level of flood protection, then the Funding Recipient may itself perform the necessary work or do so by contract. The Funding Recipient may in its sole discretion develop a work plan and present it to the Local Maintaining Agency with instructions that if the Local Maintaining Agency does not agree to carry out the work plan within the time specified in the work plan, the Funding Recipient will perform the necessary work or do so by contract. The Local Maintaining Agency will reimburse the Funding Recipient for the costs of performing such work in accordance with the procedures set forth in this OMRR&R

Agreement. No completion, operation, maintenance, repair, replacement, or rehabilitation by the Funding Receipt shall operate to relieve the Local Maintaining Agency of responsibility to meet the Local Maintaining Agency's obligations as set forth in this OMRR&R Agreement, or to preclude the Funding Recipient from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this OMRR&R Agreement.

5. If both the Local Maintaining Agency and the Funding Recipient have failed or refused to perform the obligations set forth in this OMRR&R Agreement or the requirements of the manuals mentioned above, the State may take appropriate actions including proceedings to establish a maintenance area under Water Code Section 12878 et seq.

If the both Local Maintaining Agency and the Funding Recipient have failed or refused to perform the obligations set forth in this OMRR&R Agreement or the requirements of the manuals mentioned above, and for any reason the State is not able to take appropriate actions under these provisions of law, then the State may take appropriate actions under this OMRR&R Agreement as follows: If the failure or refusal constitutes, in the sole discretion of the State, a threat to the continued ability of the Project or functional portion thereof to perform in a manner necessary to provide its designed level of flood protection, then the State may itself perform the necessary work or do so by contract. The State may in its sole discretion develop a work plan and present it to the Local Maintaining Agency and Funding recipient with instructions that if the Local Maintaining Agency and/or Funding Recipient does not agree to carry out the work plan within the time specified in the work plan, the State will perform the necessary work or do so by contract. The Local Maintaining Agency and/or Funding Recipient will reimburse the State for the costs of performing such work in accordance with the procedures set forth in this OMRR&R Agreement. No completion, operation, maintenance, repair, replacement, or rehabilitation by the State shall operate to relieve the Local Maintaining Agency and Funding Recipient of responsibility to meet the Local Maintaining Agency's their obligations as set forth in this OMRR&R Agreement, or to preclude the State from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this OMRR&R Agreement.

C. Additional Obligations:

1. The Funding Recipient and/or Local Maintaining Agency shall annually review and, if appropriate or requested by the State, update the safety plan for the Project prepared pursuant to the relevant Funding Agreements or required by Cal. Water Code § 9650. The Funding Recipient and/or Local Maintaining Agency agrees to use best efforts to ensure that the updated safety plan is integrated into any other local agency emergency plan and is coordinated with the State emergency plan.
2. No later than September 30 of each calendar year Local Maintaining Agency shall provide an annual Post Construction Performance Report to the Department, in accordance with Water Code Section 9140 that pertain to the Project.
 - (a) If the Local Maintaining Agency is not the same as the Funding Recipient, the Local Maintaining Agency represents that it has made arrangements with the Funding Recipient to obtain any information needed from the Funding Recipient in order to prepare this report.
 - (c) The Department in its sole determination may modify these reporting requirements as needed to ensure that it has adequate information with which to perform its responsibilities.

3. Upon request, the Funding Recipient will provide the State with copies of Project Completion Reports prepared pursuant to the Funding Agreement.

SECTION II: Hazardous Substances

The Local Maintaining Agency ~~acknowledges~~ and Funding Recipient acknowledge State may incur obligations with respect to hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601-9675; California Hazardous Substances Account Act, Calif. Health & Safety Code § 25310 *et seq.* or other statutes or regulations (collectively referred to as “state and federal Hazardous Substances Laws”) on lands necessary for Project construction and OMRR&R to the extent the Local Maintaining Agency fails to comply with its obligations under this OMRR&R Agreement. The Local Maintaining Agency agrees:

- A. That in the event that the Local Maintaining Agency discovers through an environmental investigation or other means that any lands, easements, or rights of way that have been acquired or provided for the Project contain reportable quantities of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws, the Local Maintaining Agency shall promptly notify the State and Funding Recipient of that discovery if it can be reasonably anticipated that the discovery of reportable quantities of hazardous substances will require Local Maintaining Agency to incur response costs in excess of \$10,000.

If the Funding Recipient is responsible for OMRR&R, that in the event that the Funding Recipient discovers through an environmental investigation or other means that any lands, easements, or rights of way that have been acquired or provided for the Project contain reportable quantities of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws, the Funding Recipient shall promptly notify the State and Local Maintaining Agency of that discovery if it can be reasonably anticipated that the discovery of reportable quantities of hazardous substances will require the Funding Receipt to incur response costs in excess of \$10,000.

- B. That in the event reportable quantities of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws have been found, the Local Maintaining Agency shall initiate and complete any and all necessary response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws, which shall include any studies and investigations necessary to determine the appropriate response to the contamination. Payment for the costs of such necessary response and cleanup activity as required under CERCLA and/or other state and federal Hazardous Substances Laws shall be made by the Local Maintaining Agency. In the event that the Local Maintaining Agency fails to provide the funds necessary for response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws or to otherwise discharge the Local Maintaining Agency’s responsibilities under this Paragraph B, then the State may perform the necessary response and cleanup activity, and the Local Maintaining Agency shall reimburse the State in accordance with the procedures set out in this OMRR&R Agreement. If the State performs the necessary response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws, the State shall consult with the Local Maintaining Agency concerning the selection of the person(s) to perform the work, the amount of money to be spent on the work, the scope of the work, and any other aspect of response and cleanup activity.

If the Funding Recipient is responsible for OMRR&R, that in the event reportable quantities of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws have been found, the Funding Recipient shall initiate and complete any and all necessary response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws, which shall include any studies and investigations necessary to determine the appropriate response to the contamination. Payment for the costs of such necessary response and cleanup activity as required under CERCLA and/or other state and federal Hazardous Substances Laws shall be made by the Funding Recipient. In the event that

the Funding Recipient fails to provide the funds necessary for response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws or to otherwise discharge the Funding Recipient's responsibilities under this Paragraph B, then the State may perform the necessary response and cleanup activity, and the Funding Recipient shall reimburse the State in accordance with the procedures set out in this OMRR&R Agreement. If the State performs the necessary response and cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws, the State shall consult with the Funding Recipient concerning the selection of the person(s) to perform the work, the amount of money to be spent on the work, the scope of the work, and any other aspect of response and cleanup activity.

- C. That the Local Maintaining Agency shall consult with the State in order to ensure that responsible persons under CERCLA and/or other state and federal Hazardous Substances Laws ultimately bear all necessary response and cleanup costs as defined in CERCLA and/or other state and federal Hazardous Substances Laws.

If the Funding Recipient is responsible for OMRR&R, that the Funding Recipient shall consult with the State in order to ensure that responsible persons under CERCLA and/or other state and federal Hazardous Substances Laws ultimately bear all necessary response and cleanup costs as defined in CERCLA and/or other state and federal Hazardous Substances Laws.

- D. That the Local Maintaining Agency shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will control and minimize the release or threatened release of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws on lands necessary for Project construction, operation, maintenance, repair, replacement, or rehabilitation.

If the Funding Recipient is responsible for OMRR&R, that the Funding Recipient shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will control and minimize the release or threatened release of hazardous substances regulated under CERCLA and/or other state and federal Hazardous Substances Laws on lands necessary for Project construction, operation, maintenance, repair, replacement, or rehabilitation.

- E. That in the event that the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, are found to be liable under CERCLA and/or other state and federal Hazardous Substances Laws for the release or threatened release of hazardous substances arising out of the operation, maintenance, repair, replacement, or rehabilitation of the Project, then the Local Maintaining Agency shall indemnify and hold the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, harmless from any response or cleanup costs for which the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, may be found to be liable under CERCLA and/or other state and federal Hazardous Substances Laws.

If the Funding Recipient is responsible for OMRR&R, that in the event that the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, are found to be liable under CERCLA and/or other state and federal Hazardous Substances Laws for the release or threatened release of hazardous substances arising out of the operation, maintenance, repair, replacement, or rehabilitation of the Project, then the Funding Recipient shall indemnify and hold the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, harmless from any response or cleanup costs for which the State, their representatives, officers, directors, employees, including their attorneys, as well as their successors and assigns, may be found to be liable under CERCLA and/or other state and federal Hazardous Substances Laws.

- F. No decision made or action taken pursuant to any provision of this Section of the Project OMRR&R Agreement shall relieve any responsible person from any liability that may arise under CERCLA and/or other state and federal Hazardous Substances Laws, nor shall such decision or action be considered a waiver by the State ~~or~~, the Local Maintaining Agency or the Funding Recipient of any right to seek from any responsible person as defined by CERCLA and/or other state and federal Hazardous Substances Laws the recovery, contribution of, or indemnification from costs incurred by the State ~~or~~, the Local Maintaining Agency or the Funding Recipient for response or cleanup activity required under CERCLA and/or other state and federal Hazardous Substances Laws, nor shall such decision or action be considered a waiver by the State of any other right or remedy provided by law.

SECTION III: Authorization for Delegation or Subcontracting

The Local Maintaining Agency or the Funding Recipient may delegate or subcontract its responsibilities under this OMRR&R Agreement. The Local Maintaining Agency or the Funding Recipient shall be responsible for all work to be performed under the contract, including any delegated work. The State shall have the right to ask that any services for this OMRR&R Agreement provided by any subcontractor be terminated if its performance is unsatisfactory.

Payment for services rendered by subcontractors shall be made entirely by the Local Maintaining Agency or the Funding Recipient; the State shall not have any responsibility for making any payments to the subcontractors for any services they may render in connection with this OMRR&R Agreement.

SECTION IV: Procedures for Reimbursing the State

If the Local Maintaining Agency fails to fulfill its obligations under this Agreement and if the failure or refusal constitutes, in the sole discretion of the State, a threat to the continued ability of the flood project to perform in a manner necessary to provide its designed level of flood protection, then the StateFunding Recipient, after notifying the Local Maintaining Agency and providing a sixty (60) day opportunity to cure period, may in its sole discretion develop a work plan and present it to the Local Maintaining Agency with instructions that if the Local Maintaining Agency does not agree to carry out, or is unable to carry out, the work plan within the time specified in the work plan, the StateFunding Recipient will perform the necessary work or do so by contract. The Local Maintaining Agency agrees, subject to compliance with applicable state law, to reimburse the StateFunding Recipient for the costs of performing such work in accordance with the procedures set forth in this Agreement. No completion, operation and maintenance, by the StateFunding Recipient shall operate to relieve the Local Maintaining Agency of responsibility to meet the Local Maintaining Agency's obligations as set forth in this Agreement, or to preclude the StateFunding Recipient from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this Agreement.

If the Local Maintaining Agency and Funding Recipient fails to fulfill its obligations under this Agreement and if the failure or refusal constitutes, in the sole discretion of the State, a threat to the continued ability of the flood project to perform in a manner necessary to provide its designed level of flood protection, then the State, after notifying the Local Maintaining Agency and the Funding Recipient and providing a sixty (60) day opportunity to cure period, may in its sole discretion develop a work plan and present it to the Local Maintaining Agency and the Funding Recipient with instructions that if the Local Maintaining Agency or the Funding Recipient does not agree to carry out, or is unable to carry out, the work plan within the time specified in the work plan, the State will perform the necessary work or do so by contract. The Local Maintaining Agency and the Funding Recipient agree, subject to compliance with applicable state law, to reimburse the State for the costs of performing such work in accordance with the procedures set forth in this Agreement. No completion, operation and maintenance, by the State shall operate to relieve the Local Maintaining Agency or the Funding Recipient of responsibility to meet the Local Maintaining Agency's and the Funding Recipient's obligations as set forth in this Agreement, or to preclude the State from pursuing any other remedy at law or equity to ensure faithful performance pursuant to this Agreement.

SECTION V: Disputes

Before any party to the OMRR&R Agreement may bring suit in any court concerning an issue relating to this OMRR&R Agreement, that party must first seek in good faith to resolve the issue through negotiation or other forms of nonbinding alternative dispute resolution mutually acceptable to all parties.

SECTION VI: Obligation of Future Appropriations

The parties agree that nothing herein shall constitute, or be deemed to constitute, an obligation of future appropriations by the Legislature of the State of California ~~-, the Board of Directors of Funding Recipient, and the Board of Trustees of the Local Maintaining Agency.~~

SECTION VII: Term of Agreement; Amendment

The effective date of this OMRR&R Agreement is the date ~~it is signed by~~ all parties sign it. The OMRR&R Agreement will continue in full force and effect unless terminated or amended upon written consent of all parties.

The parties acknowledge that in order to obtain federal credits or reimbursement for this Project, it may be necessary to amend this OMRR&R Agreement as required by the USACE. The parties agree that they will not unreasonably withhold consent for any amendments necessary to obtain federal credits or reimbursement.

SECTION VIII: Notices

All notices, requests, demands, and other communications required or permitted to be given under this OMRR&R Agreement shall be deemed to have been duly given if in writing and delivered personally or mailed by first class (postage pre-paid), registered, or certified mail, as follows:

If to the Local Maintaining Agency:
American River Flood Control District
ATTN: General Manager
185 Commerce Circle
Sacramento, CA 95815

If to the Board:
Central Valley Flood Protection Board
ATTN: Executive Officer
3310 El Camino Avenue, Suite 170
Sacramento, CA 95821

If to the Funding Recipient:
Sacramento Area Flood Control Agency
ATTN: Executive Director
1007 7th Street, 7th Floor
Sacramento, CA 95814

A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this section.

Any notice, request, demand, or other communication made pursuant to this section shall be deemed to have been received by the addressee at such time as it is personally delivered or seven (7) calendar days after it is mailed, as the case may be.

SECTION IX: Standard Conditions

This OMRR&R Agreement incorporates by reference the standard conditions that are included in Attachment A to this OMRR&R Agreement.

SECTION X: Authority

The Funding Recipient and the Local Maintaining Agency have each provided a copy of a resolution adopted by its governing body designating a representative to execute this OMRR&R Agreement. This resolution is substantially the same as the draft resolution provided in Attachment B to this OMRR&R Agreement.

IN WITNESS WHEREOF, the parties hereto have executed this OMRR&R Agreement.

The Central Valley Flood Protection Board

American River Flood Control District

By _____
Leslie M. Gallagher,
Executive Officer

By _____
Timothy R. Kerr,
General Manager

Date: _____

Date: _____

Approved as to Legal Form
and Sufficiency:

Approved as to Legal Form
and Sufficiency:

Kenwarjit Dua,
Board Counsel

David Aladjem,
District Legal Counsel

Sacramento Area Flood Control Agency

By _____
Jason Campbell,
Deputy Executive Director

Approved as to Legal Form
And Sufficiency:

M. Holly Gilchrist,
Agency Counsel

Attachment A

STANDARD CONDITIONS

1. **GOVERNING LAW:** This OMRR&R Agreement is governed by and shall be interpreted in accordance with the laws of the State of California.
2. **TIMELINESS:** Time is of the essence in this OMRR&R Agreement.
3. **AMENDMENT:** This OMRR&R Agreement may be amended at any time by mutual agreement of the Parties, except insofar as any proposed amendments are in any way contrary to applicable law. Requests by the Local Maintaining Agency for amendments must be in writing stating the amendment request and the reason for the request. State shall have no obligation to agree to an amendment.
4. **SUCCESSORS AND ASSIGNS:** This OMRR&R Agreement and all of its provisions shall apply to and bind the successors and assigns of the parties. No assignment or transfer of this OMRR&R Agreement or any part thereof, rights hereunder, or interest herein by the Local Maintaining Agency shall be valid unless and until it is approved by State and made subject to such reasonable terms and conditions as State may impose.
5. **INSPECTION OF BOOKS, RECORDS, AND REPORTS:** During regular office hours, each of the parties hereto and their duly authorized representatives shall have the right to inspect and to make copies of any books, records, or reports of either party pertaining to this OMRR&R Agreement or matters related hereto. Each of the parties hereto shall maintain and shall make available at all times for such inspection accurate records of all its costs, disbursements, and receipts with respect to its activities under this OMRR&R Agreement. Failure or refusal by Local Maintaining Agency to comply with this provision shall be considered a breach of this OMRR&R Agreement, and State may take any other action it deems necessary to protect its interests, after complying with paragraph V of the OMRR&R Agreement.
6. **PROHIBITION AGAINST DISPOSAL OF PROJECT WITHOUT STATE PERMISSION:** Local Maintaining Agency shall not sell, abandon, lease, transfer, exchange, mortgage, hypothecate, or encumber in any manner whatsoever all or any portion of any real or other property necessarily connected or used in conjunction with the Project, without prior permission of State. Local Maintaining Agency shall not take any action, including but not limited to actions relating to user fees, charges, and assessments that could adversely affect the ability of Local Maintaining Agency meet its obligations under this OMRR&R Agreement, without prior written permission of State. State may require that the proceeds from the disposition of any real or personal property acquired, reimbursed or credited with State funds be remitted to State.
7. **NO THIRD PARTY RIGHTS:** The parties to this OMRR&R Agreement do not intend to create rights in, or grant remedies to, any third party as a beneficiary of this OMRR&R Agreement, or of any duty, covenant, obligation or undertaking established herein.
8. **OPINIONS AND DETERMINATIONS:** Where the terms of this OMRR&R Agreement provide for action to be based upon, judgment, approval, review, or determination of either party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review, or determination to be arbitrary, capricious, or unreasonable.
9. **SUIT ON OMRR&R AGREEMENT:** Each of the parties hereto may sue and be sued with respect to this OMRR&R Agreement.
10. **REMEDIES NOT EXCLUSIVE:** The use by either party of any remedy specified herein for the enforcement of this OMRR&R Agreement is not exclusive and shall not deprive the party using such remedy of, or limit the application of, any other remedy provided by law.

11. **SEVERABILITY:** Should any portion of this OMRR&R Agreement be determined to be void or unenforceable, such shall be severed from the whole and the OMRR&R Agreement shall continue as modified.
12. **WAIVER OF RIGHTS:** None of the provisions of this OMRR&R Agreement shall be deemed waived unless expressly waived in writing. It is the intention of the parties hereto that from time to time either party may waive any of its rights under this OMRR&R Agreement unless contrary to law. Any waiver by either party of rights arising in connection with the OMRR&R Agreement shall not be deemed to be a waiver with respect to any other rights or matters, and such provisions shall continue in full force and effect.
13. **TERMINATION FOR CAUSE:** The State may terminate this OMRR&R Agreement should Local Maintaining Agency fail to perform the requirements of this OMRR&R Agreement at the time and in the manner herein provided or in the event of a default by the Funding Recipient under the relevant Funding Agreement.
14. **INDEPENDENT CAPACITY:** Local Maintaining Agency, and the agents and employees of Local Maintaining Agencies, in the performance of the OMRR&R Agreement, shall act in an independent capacity and not as officers, employees, or agents of the State.
15. **CONFLICT OF INTEREST**
- a) **Current State Employees:** No State officer or employee shall engage in any employment, activity, or enterprise from which the officer or employee receives compensation or has a financial interest and which is sponsored or funded by any State agency, unless the employment, activity, or enterprise is required as a condition of regular State employment. No State officer or employee shall contract on his or her own behalf as an independent contractor with any State agency to provide goods or services.
- b) **Former State Employees:** For the two-year period from the date he or she left State employment, no former State officer or employee may enter into a contract in which he or she engaged in any of the negotiations, transactions, planning, arrangements, or any part of the decision-making process relevant to the contract while employed in any capacity by any State agency. For the twelve-month period from the date he or she left State employment, no former State officer or employee may enter into a contract with any State agency if he or she was employed by that State agency in a policy-making position in the same general subject area as the proposed contract within the twelve-month period prior to his or her leaving State service.
- c) **Employees of the Local Maintaining Agency:** Employees of the Local Maintaining Agency shall comply with all applicable provisions of law pertaining to conflicts of interest, including but not limited to any applicable conflict of interest provisions of the California Political Reform Act, Cal. Gov't Code § 87100 *et seq.*
- d) **Employees of and Consultants to the Local Maintaining Agency:** Individuals working on behalf of a Local Maintaining Agency may be required by the Department to file a Statement of Economic Interests (Fair Political Practices Commission Form 700) if it is determined that an individual is a consultant for Political Reform Act purposes.
16. **WORKERS' COMPENSATION:** Local Maintaining Agency affirms that it is aware of the provisions of Labor Code Section 3700 *et seq.*, which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and Local Maintaining Agency affirms that it will comply with such provisions before commencing the performance of the work under this OMRR&R Agreement and will make its contractors and subcontractors aware of this provision.

17. **AMERICANS WITH DISABILITIES ACT:** By signing this OMRR&R Agreement, Local Maintaining Agency assures State that it complies with the Americans with Disabilities Act (ADA) of 1990, (42 U.S.C., 12101 et seq.), which prohibits discrimination on the basis of disability, as well as all applicable regulations and guidelines issued pursuant to the ADA.
18. **NONDISCRIMINATION CLAUSE:** During the performance of this OMRR&R Agreement, Local Maintaining Agency and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, and denial of family care leave. Local Maintaining Agency and subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Local Maintaining Agency and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Local Maintaining Agency and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

Local Maintaining Agency shall include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under the OMRR&R Agreement.

19. DRUG-FREE WORKPLACE CERTIFICATION

Certification of Compliance: By signing this OMRR&R Agreement, Local Maintaining Agency, its contractors or subcontractors hereby certify, under penalty of perjury under the laws of State of California, compliance with the requirements of the Drug-Free Workplace Act of 1990 (Government Code 8350 et seq.) and, if such Act applies to Local Maintaining Agency, have or will provide a drug-free workplace by taking the following actions:

a) Publish a statement notifying employees, contractors, and subcontractors that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees, contractors, or subcontractors for violations, as required by Government Code Section 8355(a)(1).

b) Establish a Drug-Free Awareness Program, as required by Government Code Section 8355(a)(2) to inform employees, contractors, or subcontractors about all of the following:

1. The dangers of drug abuse in the workplace,
2. Local Maintaining Agency's policy of maintaining a drug-free workplace,
3. Any available counseling, rehabilitation, and employee assistance programs, and
4. Penalties that may be imposed upon employees, contractors, and subcontractors for drug abuse violations.

c) Provide as required by Government Code Sections 8355(a)(3), that every employee, contractor, and/or subcontractor who works under this OMRR&R Agreement:

1. Will receive a copy of Local Maintaining Agency's drug-free policy statement, and
2. Will agree to abide by terms of Local Maintaining Agency's condition of employment, contract or subcontract.

Suspension of Payments: This OMRR&R Agreement may be subject to suspension of payments or termination, or both, and Local Maintaining Agency may be subject to debarment if the State determines that:

- a) Local Maintaining Agency, its contractors, or subcontractors have made a false certification, or
 - b) Local Maintaining Agency, its contractors, or subcontractors violates the certification by failing to carry out the requirements noted above.
20. UNION ORGANIZING: Local Maintaining Agency, by signing this OMRR&R Agreement, hereby acknowledges the applicability of Government Code 16645 through 16649 to this OMRR&R Agreement. Furthermore, Local Maintaining Agency, by signing this OMRR&R Agreement, hereby certifies that:
- a) No State funds disbursed by this OMRR&R Agreement will be used to assist, promote, or deter union organizing.
 - b) Local Maintaining Agency shall account for State funds disbursed for a specific expenditure by this OMRR&R Agreement to show those funds were allocated to that expenditure.
 - c) Local Maintaining Agency shall, where State funds are not designated as described in (b) above, allocate, on a pro rata basis, all disbursements that support the program.
 - d) If Local Maintaining Agency makes expenditures to assist, promote, or deter union organizing, Local Maintaining Agency will maintain records sufficient to show that no State funds were used for those expenditures and that Local Maintaining Agency shall provide those records to the Attorney General upon request.
21. COMPUTER SOFTWARE: Local Maintaining Agency certifies that it has appropriate systems and controls in place to ensure that state funds will not be used in the performance of this OMRR&R Agreement for the acquisition, operation, or maintenance of computer software in violation of copyright laws.
22. DELIVERY OF INFORMATION, REPORTS, AND DATA: Local Maintaining Agency agrees to expeditiously provide, during work on the Urban Flood Risk Reduction Program and throughout the term of this OMRR&R Agreement, such reports, data, information, and certifications as may be reasonably required by State.
23. RIGHTS IN DATA: Local Maintaining Agency agrees that all data, plans, drawings, specifications, reports, computer programs, operating manuals, notes, and other written or graphic work produced in the performance of this OMRR&R Agreement shall be made available to the State and shall be in the public domain to the extent to which release of such materials is required under the California Public Records Act, Cal. Gov't Code §§ 6250 *et seq.* Local Maintaining Agency may disclose, disseminate and use in whole or in part, any final form data and information received, collected, and developed under this OMRR&R Agreement, subject to appropriate acknowledgement of credit to State for financial support. Local Maintaining Agency shall not utilize the materials for any profit-making venture or sell or grant rights to a third party who intends to do so. The State shall have the right to use any data described in this paragraph for any public purpose.
23. CHILD SUPPORT COMPLIANCE ACT: For any OMRR&R Agreement in excess of \$100,000, the Funding Recipient acknowledges in accordance with Public Contract Code 7110, that:
- a) The Funding Recipient recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings

assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

b) The Funding Recipient, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

24. PRIORITY HIRING CONSIDERATIONS: If this OMRR&R Agreement includes services in excess of \$200,000, the Funding Recipient shall give priority consideration in filling vacancies in positions funded by the OMRR&R Agreement to qualified recipients of aid under Welfare and Institutions Code Section 11200 in accordance with Pub. Contract Code § 10353.
25. DOMESTIC PARTNERS: For contracts over \$100,000 executed or amended after January 1, 2007, the Funding Recipient certifies by signing this OMRR&R Agreement, under penalty of perjury under the laws of State of California that Funding Recipient is in compliance with Public Contract Code section 10295.3
26. LOCAL MAINTAINING AGENCY NAME CHANGE: Approval of the State is required to change the Local Maintaining Agency's name as listed on this OMRR&R Agreement. Upon receipt of legal documentation of the name change the State will process the amendment. Payment of invoices presented with a new name cannot be paid prior to approval of said amendment.
27. AIR OR WATER POLLUTION VIOLATION: Under State laws, the Local Maintaining Agency shall not be: (1) in violation of any order or resolution not subject to review promulgated by the State Air Resources Board or an air pollution control district; (2) subject to cease and desist order not subject to review issued pursuant to Section 13301 of the Water Code for violation of waste discharge requirements or discharge prohibitions; or (3) finally determined to be in violation of provisions of federal law relating to air or water pollution

Section 9 Inspection and Maintenance

Inspection and maintenance requirements are generally described in the USACE *Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project*, the Supplement Manuals, and DWR's *Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects*. These documents, as well as any manufacturer's instructions for specialized features and/or appurtenances should be readily available at all times. Additional inspection and maintenance guidance, forms, and checklists are included in **Appendix I** (attached).

For purposes of this local agency supplement manual, Maintenance is defined using the definition from the *Flood System Long-Term Operations, Maintenance, Repair, Rehabilitation, and Replacement Cost Evaluation* prepared by DWR as part of the 2017 CVFPP Update as:

Maintenance includes routine activities that need to be performed to keep the system operational. Maintenance is further defined to include minor repairs, rehabilitation, and replacement of items as necessary to keep the system in good working condition.

Typical activities involved in routine repairs, rehabilitation, and replacement as part of routine maintenance are generally described below and are described in more detail later in this section. For purposes of this manual, routine repair and rehabilitation are generally referred to as repair.

Routine or periodic maintenance includes activities that must be performed annually or semiannually, including vegetation management (such as invasive species and channel snags), sediment removal, mowing, rodent and burrowing vector control to maintain levee integrity, minor erosion repair, levee crown repairs, crown road surfacing, and bank stabilization. Other typical activities include maintaining pumping plants, gates and closure structures, and other appurtenant flood control facilities as necessary.

Major repairs resulting from levee breaches, deep underseepage repairs, large slips with large stability failures, or erosion damage that threatens the integrity or stability of the levee are beyond the capacity of the LMAs to address as part of routine OMRR&R. Furthermore, repairs or improvements to the levee or appurtenant structures that may be needed in the future in order to meet updated design criteria are not included in routine OMRR&R.

The specific actions to be taken by the LMAs for routine inspection and maintenance of the levee and appurtenant structures are outlined in this section. **This document is general and preliminary in nature. Specific details of OMRR&R actions are currently in development.**

9.1. General

As indicated in the USACE *Standard Operation and Maintenance Manual for the Sacramento River Flood Control Project*, inspections should be completed by the LMA under the following circumstances:

- 1) Immediately prior to the beginning of each flood season;
- 2) Immediately following each major high-water period (i.e.: when the river stage exceeds the elevation of the landside levee toe);
- 3) At intervals not exceeding 90 days;
- 4) At intermediate times as may be necessary to confirm the levee is properly maintained; and

5) Following significant earthquakes in the vicinity of the project as shown below:

<u>Magnitude</u>	<u>Distance to Epicenter</u>
$5 > M$	less than 10 miles
$5 < M < 6$	less than 30 miles
$M > 6$	less than 50 miles

9.2. Levees and Embankments

Crown Roadways and Access Roads

The crown roadway, ramps, and access roads should be properly maintained and kept serviceable. Levee crown roadway and access roads need to be maintained to be free of ruts, pot holes, or other depressions. The levee crown and access road crowns should also be maintained so that they drain properly without any ponded water.

This work involves periodically grading and gravelling road surfaces following the same procedures and requirements outlined in Section 4 of the *Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects*. Other specific actions for LD1 to be added.

Cracking and Slips

Repair of cracking and slips that are less than four feet in depth, and that do not encroach into the theoretical levee prism or threaten the structural integrity / stability of the levee are included as part of routine maintenance. Repairs for slips and cracking more than four feet in depth, those that encroach into the theoretical levee prism, or those that threaten the structural integrity or stability of the levee are not included in routine OMRR&R.

Any cracks or slips should be immediately marked on the ground, reported to the LMA General Manager, and evaluated by a registered civil engineer with levee experience and remedial measures implemented, as determined necessary.

All cracks greater than one inch wide in the levee crown or slopes should be repaired using the following procedure: 1) remove and salvage the gravel surfacing material on the levee crown; 2) excavate the levee crown and/or slope along the crack to the full depth of the crack; 3) backfill the excavation with compacted clayey material placed in thin lifts and meeting the material property and compaction requirements for the original levee construction; 4) replace and compact the gravel surfacing over the levee crown; and 5) stabilize the repaired area on the levee slope using an erosion mat or fabric, and reseed it to re-establish the ground cover.

Localized sloughing and slips should be immediately repaired and the areas promptly stabilized and revegetated, if needed. These repairs should be made with earth that is free from brush, roots, sod, or other unsuitable material. The materials should be placed in 6-inch-thick lifts and compacted in accordance with Title 23. Other specific repair actions for LD1 to be added.

Erosion and Riprap Revetment

Repair of erosion damage, scour holes, or bank caving caused by high water events, heavy rains, or wave wash action that are less than four feet in depth and that do not encroach into the theoretical levee prism or threaten the structural integrity / stability of the levee are included as part of routine maintenance. Repairs for erosion damage that are more than four feet in depth,

encroach into the theoretical levee prism, or damage that threaten the structural integrity or stability of the levee are not included in routine OMRR&R.

Dragging, seeding and mulching of the levee slopes to repair minor surface erosion or irregularities and to prevent serious erosion should be performed when needed. Procedures for dragging should be implemented as outlined in Section 4.22 of DWR's *Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects*.

Erosion, scour holes or bank caving should be immediately repaired and the areas promptly stabilized and revegetated, if needed. These repairs should be made with earth that is free from brush, roots, sod, or other unsuitable material. The materials should be placed in 6-inch-thick lifts and compacted in accordance with Title 23. Rock slope protection or riprap that becomes dislodged or displaced should be replaced. **Other specific repair actions for LD1 to be added.**

Cutoff Walls

The cutoff wall acts as an impervious barrier and should not be penetrated or encroached at any location. Modification or repair work in the vicinity of the SB, CB, or SCB cutoff walls should include provisions to avoid damaging the cutoff wall. Proposed future utilities should be placed over the existing cutoff wall. Repairs or improvements to cutoff walls are not part of routine OMRR&R.

Rodent Activity

Ground squirrels, beavers, and other burrowing rodents can threaten the structural integrity of levees by loosening soil which increases the risk of erosion and sloughing, reduces the length of the seepage path, and increases the seepage gradient and the likelihood of piping-type erosion failures. Therefore, a continuous rodent control program should be implemented.

The rodent control program should use the same procedures and requirements as outlined in Section 5 of DWR's *Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects*. Animal dens and runways should be opened up and backfilled with compacted fill or pumped full of a grout mixture. **Other specific repair actions for LD1 to be added.**

Vegetation Management

DWR has established a Life Cycle Management (LCM) approach for maintaining vegetation on levees. The LCM generally applies to a Vegetation Management Zone (VMZ) consisting of the entire landside levee slope (and berm) plus 15 feet beyond the landside toe, the levee crown, and the top 20 feet (slope length) of the waterside levee slope (see Section 7.16.7 of the ULDC for more information). LCM achieves visibility and accessibility criteria while progressing gradually (over many decades) toward the current USACE vegetation policy goal of eventually eliminating woody vegetation from the VMZ.

Mowing, grazing, burning, spraying, and/or discing of low-lying vegetation and trimming, pruning, and/or removal of woody vegetation may be needed in order to ensure that vegetation is maintained in accordance with the LCM.

LCM provides that:

- The required removal of immature trees and other woody vegetation less than four inches in diameter at breast height is conducted in consultation with the appropriate resources agencies.
- Trees and other woody vegetation beyond this size (that do not pose an unacceptable threat to levee integrity) may live out their normal lives on the levee.
- Throughout their lives and after their deaths, these trees and other woody vegetation are periodically evaluated and, if found to pose an unacceptable threat to levee integrity, would be removed.

Therefore, trees and other woody vegetation on the levee and within 15 feet of the levee toe that pose an unacceptable threat to the integrity of the levee need to be removed, and associated root balls and roots should be appropriately remediated. At a minimum, all roots larger than 1.5 inches in diameter that are within 3 feet of the perimeter of the tree trunk will be removed. Immature trees less than 4 inches in diameter at breast height that are removed may be cut off at or below ground level, generally without root removal. More extensive root removal may be required, depending upon the location, size, and type of tree; the quantity, orientation, and size of the roots; the dimensions of the levee; the composition of the levee and foundation; and the levee features that address seepage and underseepage. Less extensive root removal may be justified where roots from adjacent trees would be unduly damaged. Any excavation resulting from the above actions should be backfilled with engineered fill using appropriate placement, moisture conditioning, and compaction methods.

Trees and other woody vegetation that do not pose an unacceptable threat do not need to be removed. As part of the routine O&M, trees and other woody vegetation that are not removed must be monitored to identify changing conditions that could cause any of these remaining trees and other woody vegetation to pose an unacceptable threat to levee integrity. Trees allowed to remain must be trimmed five feet above the ground level (12-foot clearance is needed above the levee crown) in order to maintain visibility and access within the VMZ.

Sod-forming grasses and ground covers which permit inspection and flood fighting are necessary to prevent erosion on the levee embankment and slopes. Ground cover should be maintained at 12 inches in height or less. The levee crown should be kept free of vegetation. Inspections should determine if there is good coverage of sod over the levees and should also note those areas that are deficient. No action should be taken (such as burning grass and weeds during inappropriate seasons) which may retard or destroy the growth or sod. Broadleaf weeds growing among desirable grasses should be controlled by selective herbicides. Brush and weeds should be trimmed, thinned, or removed as needed to maintain visibility and access within the VMZ.

Authorized mowing, burning, spraying, managed grazing, and other vegetation management procedures should be implemented as outlined in Section 3 of DWR's *Superintendent's Guide to Operation & Maintenance of California's Flood Control Projects*. **Other specific repair actions for LD1 to be added.**

9.3. Stability Berms and Seepage Berms

Stability berms and seepage berms should be maintained in the same manner that the levee embankments are maintained. Vegetation and rodent control in these areas is important so that the berm

geometry does not change and is free from borrows or voids. **Other specific repair actions for LD1 to be added.**

9.4. Pipe Penetrations

The known penetrations through or over the levee are summarized in Table 4 (attached). The penetrations must be clear of debris and structurally sound. If significant settlement or seepage is detected along a pipe, a registered civil engineer with seepage and levee experience should be contacted for repair measures. Additionally, exposed portions of pipe and culvert penetrations must be visually inspected at least annually.

All flap gates, slide gates, vaults, head walls and other appurtenances should be inspected (and the mechanical devices lubricated if recommended by the manufacturer) at least once per year just before the flood season. During the inspection, all gates should be operated and any debris or obstructions removed. All gate seats should be checked and, if the gate is not seating properly, the frames should be readjusted. The inlet and outlet channels and pump station sumps should be kept free of debris, trees, brush, and sediment.

The interiors of all pipes and culvert penetrations must be visually inspected and/or pressure tested every five years. Pipes and culverts that could be damaged by corrosion should be further examined for signs of interior and exterior corrosion. Inspections of the exterior should be performed in representative areas where the pipe or culvert is in contact with the levee embankment and/or foundation soils. Corrosion assessment inspections performed from the interior can be completed using non-destructive means such as ultrasonic or electrical conductivity measurements.

Pipes that are found to be structurally damaged or near the end of their useful life need to be replaced. Replacement is the responsibility of the owner of the pipe/penetration. **Other specific repair actions and specific pipe details for LD1 to be added.**

9.5. Encroachments

Known encroachments are summarized in Table 5 (attached). During routine inspections, LMA personnel should check to determine if trash, debris, excavations, structures, or other obstructions are present within the physical levee prism or within the waterside and landside easements. If non-permitted encroachments are observed, the LMA should contact the encroaching entity by mail and instruct them to remove the encroachment. The LMA should also notify the CVFPB of any non-permitted encroachments. Any levee modification, including utility penetrations, must be reviewed and approved via the normal encroachment permit process through the CVFPB. **Other specific repair actions and specific encroachment details for LD1 to be added.**

9.6. Pump Stations

The pump station near Levee Mile 4.39 (Star Bend) must be inspected and maintained by LD1 as necessary to properly drain the relief wells that it serves. Routine maintenance activities include, but are not limited to: rewinding the motor, inspecting and replacing the pump bowls as needed (approx. every ten years), as well as maintenance of the electrical panel and motor control units. **Other specific repair actions and pump station details for LD1 to be added.**

9.7. Railroad Flood Gates

During routine inspections, all permanent components of the UPRR Closure Structure located at Levee Mile 16.10 should be inspected by LD 1 to verify that they are intact. If damage is noted, it should be repaired as soon as practical.

Additionally, all temporary components of the UPRR Closure Structure must be visually inspected at least once each year to verify that all components are present and in good condition. If any damage is noted, it should be repaired as soon as practical.

At least once every two years, LD1 will assemble, install and then disassemble the closure structure. It is estimated that installation and disassembly of the closure structure takes approximately four hours with a well-trained crew of four people. Prior to installation of the closure structure, the UPRR Response Management Communication Center (RMCC) must be contacted at 1-888-877-7267 in order to request approval from UPRR that activities can be completed within the allowable track windows. This testing may not occur without prior approval from UPRR. Sand bagging at the closure structure is not necessary during these periodic inspections and training exercises. (Will update this section if we can add a mock-up assembly station in the LD-1 maintenance yard).

9.8. Relief Wells

Relief well access points must be maintained so that cover plates can be easily removed for inspection of the tees and surrounding piping. The outfall structures must be kept clear of debris or other material that may affect the operation of the outlet pipe flap gates.

The relief wells should be pump-tested, swabbed/cleaned, and sounded by the LMA every five years using the procedures outlined in USACE EM 1110-2-1914, Chapter 8. The purpose of these tests is to measure the efficiencies and flow capacities of the wells and to determine whether sediment or other debris have been deposited in the wells. All wells requiring sediment removal must be pump-tested after sediment has been removed to confirm that the well efficiency has not decreased by more than 20 percent due to the presence of foreign material in the well.

During pump tests, runoff must be directed through the lateral pipes toward the outfall structures in order to check that the lines are free of blockages and that the flap gates function properly. Sediment amounts in the relief wells must be measured by sounding a well before and after pump tests. If significant algae or other biological growth is suspected within a well, it must be cleaned as described in USACE EM 1110-2-1914. If efficiencies are less than 80 percent of those recorded at the time of installation, corrective measures per USACE EM 1110-2-1914, Chapters 10 and 11 should be employed. If corrective measures are implemented but do not improve performance to at least 80 percent of the original efficiency, the well should be replaced.

Any items that are malfunctioning or have been damaged must be replaced by the LMA. Any condition that prohibits flow into or out of relief wells could result in potentially unstable and hazardous conditions. Malfunctioning and damage to the relief wells can be caused by vandalism, breakage, or excessive deformation of the well screens due to ground movements, corrosion or erosion of the well screen. Repairs to relief wells should be made in accordance with USACE EM 1110-2-1914.

Reliefwells must be replaced upon reaching 50 years of service life. If non-functioning relief wells cannot be repaired and are found to be no longer acceptable due to collapse, excessive sediment production or other conditions, they should be properly abandoned and replaced. Abandoned wells

should be sealed following procedures established by Yuba County and the California Water Well Standards (Bulletins 74-90 and 74-81). New well replacements should be installed and operational before the old ones are abandoned.

9.9. Piezometers

Maintenance of the piezometers associated with the relief well fields should include evaluations of the following items:

- The LMA should inspect the piezometer and cables to verify that they are in good condition and have not been tampered with.
- The LMA should sound each piezometers and record the groundwater elevation to the nearest 0.1 foot on an annual basis and compare with piezometer readings.
- DWR should evaluate the recorded groundwater elevation and river stage annually, and compare with predicted values to evaluate the performances of the piezometers and relief wells.

The piezometers associated with the relief well fields do not require regular maintenance, except when depth sounding indicates that a discrepancy exists between piezometer readings and sounded depth. When this is the case, the piezometers should be replaced by the LMA.

If a piezometer appears to be malfunctioning (i.e.: water levels in the well do not rise and fall with river stages or seasonal fluctuations, or differ significantly from nearby wells), the well should be redeveloped by removing the piezometer, pumping approximately 1,000 gallons out of the well, and allowing the groundwater readings to recover. If this does not resolve the issue, the well may need to be redeveloped or abandoned and replaced.

9.10. Data Collection and Telemetry System

Recommended maintenance of the data collection and telemetry system by the LMA includes:

- Maintain the fence, gates and locks that protect the data collection and telemetry system.
- Maintain the fire break slab to be free of vegetation and soil build-up.
- Maintain the enclosure cabinet in sound condition to protect the equipment from vandalism, rain and dust. Replace the desiccant packs in the cabinet annually in order to control humidity within the cabinet.
- Replace cables, wires, data logger, modem, etc., as needed.
- A voltage meter is included with the data collection and telemetry system so that the 12VDC battery can be changed when necessary. The battery pack for the data controller/logger and cellular module is expected to last approximately three months based on the settings described in Section 4.1, and can vary depending on the frequency and duration of the data collection and transmission to Valarm CDEC. The battery usage will be monitored by the LMA after construction, and the settings will be adjusted by the LMA as needed to balance data collection/transmission intervals and battery life. The procedure for making adjustments to the data logger settings via the cloud-based server is described in Appendix G. It is recommended that the battery be recharged when the voltage drops below 10.5 volts.
- Recommended maintenance for the data logger and cellular module should be performed as described in their respective instruction manuals. See Appendix G for product data details (will

include when construction is complete and component manuals are available).

9.11. Observation Wells

The relief wells that were converted to observation wells between Stations 846+64 and 926+69 do not need to be inspected or maintained. **Other specific abandonment criteria for LD1 to be added.**

9.12. Fences, Gates, and Signs

Fences, gates, concrete barriers, and bollards must be inspected and maintained by the LMA as necessary to maintain access control to the levee and appurtenant structures. Routine maintenance activities include, but are not limited to: replacing lock mechanisms, replacing bollards, repairing and replacing fences or gates that have been vandalized, and painting/coating metal surfaces prone to corrosion.

Additionally, signs and mile markers need to be maintained as necessary to maintain visibility. Signs or markers that are corroded, damaged, or stolen need to be repaired or replaced as necessary. **Other specific repair actions/locations for LD1 to be added.**

9.13. Canals

There is an existing canal along the landside toe of the levee from **RM X to Y**. This canal mitigates seepage issues in this segment as long as it is kept full of water during high water events.

The canal should be properly maintained as needed to be able to convey water. If any vegetation or other flow obstructions are identified, the LMA should request that the obstructions be removed by the canal owners as soon as possible. Similarly, if scour or erosion is identified along the canal, the LMA should request that the damage be repaired by the canal owners as soon as possible. If the necessary actions are not performed by the canal owner, the LMA should work with the CVFPB to have the issue addressed as an enforcement action. **Other specific repair actions for LD1 to be added.**

9.14. Habitat Mitigation

Information from the Star Bend Levee Setback O&M manual, as well as other specific actions for LD1 to be added.

9.15. Routine Geotechnical Explorations

Routine geotechnical explorations, potholing, evaluations, and/or assessments may be required for routine repairs. The LMA is responsible for retaining a qualified geotechnical engineer to perform these services as needed.

9.16. Record Keeping

A permanent record should be maintained of all levee inspection and maintenance activities. Records should include dated inspection reports, conditions observed (including a description of the specific locations), and maintenance actions taken. Data collected should include relief well water levels and flows, and piezometer levels, together with river stages. All records must be kept by the LMA.

2017 Lower American River Streambank Erosion Monitoring Report

April 2018

Prepared for:
American River Flood Control District
&
Sacramento Area Flood Control Agency

Prepared by



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Background

The Lower American River (LAR) is a 30-mile long watercourse that conveys regulated stormwater and snowmelt runoff within the American River Basin via Folsom Dam to its confluence with the Sacramento River. The American River Parkway is located along the LAR and provides recreational opportunities such as biking, rafting, and multi-use trails, in balance with providing valuable habitat for a wide variety of wildlife and vegetation. During a high-water event, the first line of defense in providing flood protection for the residents of Sacramento is by regulating water releases from Folsom Dam that will control the resulting increase in water surface elevations and flow velocities within the channel of the LAR. Additional flood control measures to protect the residents of Sacramento are provided by the levees that flank the LAR. Levees exist on both the north (right) and south (left) banks of the American River from its confluence with the Sacramento River upstream to across from Riverbend Park on the right bank and Larchmont on the left bank.

In the leveed sections of river, channel migration and erosion can create problems to flood control officials and Parkway managers. Due to the river's erosive forces, the structural integrity of levees and loss of parkway space can be threatened. Although a waterside bench is present along the majority of the levees to provide additional stability and increase the active riparian zone footprint within the Parkway, bank erosion has the potential to migrate into the structural section of a levee and become a major hazard to the levee system during a high flow, if not monitored and controlled properly. As the erosion encroaches in the structural section, the undermining effects could cause structural instability which may result in levee failure. In addition, loss of levee section could accelerate seepage through the levee to the point where levee failure may occur due to soil piping.

After the 1986 flood, several sites along the levees had experienced varying degrees of erosion. A bank protection program, developed by the Sacramento Area Flood Control Agency's (SAFCA) Lower American River Task Force, was implemented to provide embankment protection along these erosion sites between 1986 and 2004. In 2004, Ayers Associates submitted the report titled "Lower American River, Erosion Susceptibility Analysis for Infrequent Flood Events" in response to the damages sustained along the levees during the 1986 event and to support the certification efforts for FEMA accreditation. In July 2004, MBK Engineers had participated in the original waterside field investigation for the entire river reach with Ayers Associates to review additional locations along the levee where the hydraulic modeling had predicted high velocities and shear stresses. The field investigation and predictive modeling efforts in computing water flow velocities had resulted in the identification of twelve (12) sites as possible locations where potential erosion would cause significant damage to the levee.

Since 2005, the erosion evaluation for the LAR levees has been conducted on an annual basis by MBK, along with staff members from SAFCA and the local maintaining agency, the American River Flood Control District (ARFCD). Due to embankment protection measures implemented after the 1986 flood and the time elapsed without a major high water event, many of the original twelve sites during the initial study in 2004 have been re-evaluated over time and are no longer considered to be active erosion sites. SAFCA continues to lead the development of bank

protection on the American River through the LAR Task Force and its Bank Protection Working Group. This group consists of approximately 15 stakeholder organizations representing flood control agencies, natural resource management agencies, environmental groups, and other local agencies and partnerships. A primary goal of the BPWG is to support federal, state, and local efforts to provide the highest level of flood protection for the surrounding community and the conservation of irreplaceable natural resources along the American River Parkway. This report serves as an annual record of the changing condition of the LAR and over the past several years, new erosion sites have been detected and subsequently repaired based on their potential impact to levee integrity while other non-severe sites are monitored regularly.

Purpose

In order to observe changes indicative of active erosion and a possible problem while the problem is in its infancy rather than when the structural section of the levee is affected, a prudent levee maintenance program that includes annual monitoring of existing bank erosion should be implemented. As problems are identified, solutions can be developed in a collaborative fashion to allow the input of interested parties in levee protection. One of the tools used to evaluate erosion potential include the assessment estimated flow velocities from the most recent hydraulic model in relation to the soil material type along the bankline.

The scope of this effort is to conduct an annual inspection of the Lower American River (LAR) Federal Project levees where existing erosion had been identified in previous years and detect locations where newly formed erosion sites may have developed. One of the objectives of this erosion monitoring report is to supplement American River Flood Control District's (ARFCD) operation and maintenance plan to address erosion to ensure that the levees meet 44 CFR 65.10, paragraph (d) requirements for maintenance of certified levees. This section states:

“Maintenance plans and criteria. For levee systems to be recognized as providing protection from the base flood, the maintenance criteria must be as described herein. Levee systems must be maintained in accordance with an officially adopted maintenance plan, and a copy of this plan must be provided to FEMA by the owner of the levee system when recognition is being sought or when the plan for a previously recognized system is revised in any manner. All maintenance activities must be under the jurisdiction of a Federal or State agency, agency created by Federal or State law, or an agency of a community participating in the NFIP that must assume ultimate responsibility for maintenance. This plan must document the formal procedures that ensure that the stability, height, and overall integrity of the levee and its associated structures and systems are maintained. At a minimum, maintenance plans shall specify the maintenance activities to be performed, the frequency of their performance, and the person by name or title responsible for their performance.”

The scope does not include the LAR right bank levee downstream of the Natomas East Main Drainage Canal, as this levee is maintained by RD 1000. ARFCD inspects the actual levees for stability, seepage, encroachments, and erosion. The scope of this effort includes inspection of the top of the berm and levee face if the previous flood season had flood stages above the berm. The geographic limits of the inspection are from LAR River Mile (RM) 12.0 to the confluence of

the LAR and the Sacramento River as well as the Sacramento River left bank from RM 60.5 to 60.0. The Federal Project levee extends upstream of LAR RM 12.0 on the right bank to approximately RM 14.0, but is located away from the low flow channel and is not threatened by streambank erosion. In addition, the levee along the right bank between RM 2.0 and RM 5.3 is a significant distance from the low flow channel (approximately 1800 lineal feet). Erosion in the low flow channel poses no threat to the levee in this reach. However, this reach of levee was included in the inspection due to the high-water events experienced during the 2016-2017 water year (October 2016 – September 2017).

The findings contained in this report are the result of visual inspection of the levees and review of two-dimensional hydraulic modeling results. This report is the eleventh annual inspection report. The 2016 report serves as the baseline for this evaluation. Figure 1 shows the extent of the inspection and those areas not inspected.

Flow History for the 2016-2017 Flood Season

Figure 2 shows the mean daily flows for the American River from October 14, 2016 through October 31, 2017. This year's inspection occurred on October 17, 2017. The maximum peak flow since the previous inspection date (October 13, 2016) was 82,400 cfs, occurring February 10, 2017. The peak flow of 82,400 cfs is significantly greater than the previous inspection year's peak flow of 20,200 cfs, occurring March 13-15, 2016.

Process

Site Visit

The LAR Inspection Team conducted a site inspection by boat on October 17, 2017. The inspection team consisted of Tim Kerr (ARFCD), Ross Kawamura (ARFCD), Bill Pavao (ARFCD), Dan Tibbitts (SAFCA), KC Sorgen (SAFCA), Ray Costa (Consultant), Steve Chainey (GEI), Chuck Watson (WRC Environmental), Tom Smith (RiverSmith Engineering), Brian Wardman (Northwest Hydraulic Consultants) Mike Kynett (MBK), Brian Janowiak (MBK), Matt Bachman (MBK), and Andrew Reece (MBK). The monitoring process included both visual observations of the water side banks along the American River downstream of RM 12 and the Sacramento River left bank from RM 60.5L to 60.0L, as well as a review of two-dimensional hydraulic modeling results. During the inspection, the team stopped at the accessible sites to take a closer look at the existing conditions. The flow in the river on the date of inspection was approximately 2,090 cfs.

The results of the field review are summarized in Table 3. Photo documentation of the site visit is attached as Appendix A. The purpose of the field visit was to locate areas where erosion is visible due to loss of vegetation, apparent unstable bank lines, bare unconsolidated soil, and/or human activity. The boat survey began at approximately RM 12.0 (Gristmill Park) and proceeded downstream to the confluence with the Sacramento River. Due to the relatively low flows in the river, the inspection was performed by drift boats as well as a 10-foot aluminum jon

boat. The jon boat, deployed by MBK, and one of the drift boats were both equipped with a small outboard motor and were used to inspect sites that required upstream navigation. These sites included RM 10.8R on the American River, as well as RM 60.3L and RM 60.1L on the Sacramento River. No new erosion sites were identified during the inspection. The locations of the sites inspected are shown on Figure 1.

Due to the high-water events experienced during the 2016-2017 water year, Mike Kynett (MBK) also inspected the right bank of the American River from RM 2.0 to 5.3 via car and on foot on March 15, 2018. No erosion sites were identified during the right bank inspection.

Review of 2-D Hydraulic Modeling

The second task in the process was to review two-dimensional hydraulic analyses at flows of 115,000 cfs and 145,000 cfs. One hundred fifteen thousand (115,000) cfs is the objective release from Folsom Dam and 145,000 cfs is the FEMA “Base Flood” flow (1/100 Annual Exceedence Probability flood event). The “Lower American River, Erosion Susceptibility Analysis for Infrequent Flood Events” (Ayres, July 9, 2004) was reviewed to identify additional reaches that may be of concern that were not obvious during the site visit. The 115,000 cfs and 145,000 cfs velocity contour plates are included as Appendix B. Velocities at the sites observed during the site visit are shown in Table 3.

Velocity information from the 2-D model has been evaluated for the following reaches that were defined by floodway width to evaluate the potential for systemic erosion problems. The following table provides a summary of the modeled velocities for each reach.

Table 1 – Lower American River Modeled Velocity Summary

Reach	Flow = 115,000 cfs			Flow = 145,000 cfs		
	Velocity (Main Channel)	Velocity (Streambank)	Velocity (Levee)	Velocity (Main Channel)	Velocity (Streambank)	Velocity (Levee)
LAR RM 0 to 6	5-8 fps	1-5 fps	1-4 fps	7.5-9 fps	4-7.5 fps	1-5 fps
LAR RM 6 to 11	6-10 fps	4-6 fps	1-6 fps	7.5-12 fps	5-7.5 fps	1-7 fps
LAR RM 11 to 14	5-7.5 fps	3-5 fps	1-5 fps	5-8 fps	3-5 fps	1-6 fps

LAR RM 0 to RM 6

The reach downstream of LAR RM 6 is generally characterized by a wide berm on the right bank and a narrow or no berm on the left bank. As discussed above, erosion in the active river channel is not a threat to the right bank levee between RM 2.0 and RM 5.3. For a flow of 115,000 cfs, velocities are generally 5-8 fps in the main channel, 1-5 fps at the streambanks, and 1-4 fps at the levee. Velocities on the left bank for a flow of 115,000 cfs tend to be greater than bare soil or vegetation can handle without experiencing erosion. The following table summarizes suggested maximum permissible mean channel velocities.

Table 2 – Suggested Maximum Channel Water Velocities¹

Channel Material	Mean Channel Velocity (fps)
Fine Sand	2
Course Sand	4
Sandy Silt	2
Silt Clay	3.5
Clay	6
Soils with good vegetative cover	6-7
Poor rock (usually sedimentary)	10
Good rock (usually igneous or hard metamorphic)	20

Velocities above these ranges for the identified material would be expected to result in erosion. For a flow of 145,000 cfs, velocities are 7.5-9 fps in the main channel, 4-7.5 fps at the streambanks, and 1-5 fps at the levee. Most of the left bank in this reach has been revetted, portions of which are non-engineered and may sustain damage during high flow events.

LAR RM 6 to RM 11

This reach has a narrow floodway when compared to the up and downstream reaches. For a flow of 115,000 cfs, velocities are 6-10 fps in the main channel, 4-6 fps at the streambanks, and 1-6 fps at the levee. For a flow of 145,000 cfs, velocities are 7.5-12 fps in the main channel, 5-7.5 fps at the streambanks, and 1-7 fps at the levee. The rate of streambank erosion could be slowed by maintaining a dense cover of vegetation along the streambank. However, erosion will be an ongoing problem in this reach due to the high velocities and will eventually require structural measures. If vegetation is added to this reach, hydraulic modeling should be conducted to analyze the potential impact on water surface elevations.

LAR RM 11 to RM 14

This reach has a wide floodplain and the levees are relatively small and located away from the main channel. For a flow of 115,000 cfs, velocities are 5-7.5 fps in the main channel, 3-5 fps at the streambanks, and 1-5 fps at the levee. For a flow of 145,000 cfs, velocities are 5-8 fps in the main channel, 3-5 fps at the streambanks, and 1-6 fps at the levee. The 2-D model upstream boundary is approximately RM 14.

Sacramento River RM 60.0 to RM 60.5

This reach has a wide river channel with a floodplain on the right bank. The left bank levee is maintained by ARFCD and transitions to the streambank with little to no berm. Velocities along the left bank levee are generally less than 3 fps (with the Sacramento Weir open). The 2-D

¹ Modified from U.S. Army Corps of Engineers EM 1110-2-1601, page 2-16.

model downstream boundary is RM 59.4.

Conclusions

The site inspection observed nine sites (Table 3) that are actively eroding or show signs of past erosion within the jurisdiction of the ARFCD. Three of these nine sites, RM 10.5L (downstream portion of site), RM 9.8L (upstream portion of the site), and RM 2.7L have been either partially or fully repaired. One of these sites, Sacramento River RM 60.1L, has been fully repaired by the District. Discussion of site specific details involving the repairs for the individual sites is summarized below. Based on visual observations during the inspection, it appears that erosion has not advanced into the 3:1 waterside levee cross section. All sites will be continually monitored by ARFCD. Other parkway interests can use this information to decide if there are partnering opportunities to address erosion at an early stage to prevent the risk of erosion progressing into the standard levee section and preserving limited parkway lands. Additional potential erosion sites were not identified as a result of the review of the 2-D hydraulic model results at a flow of 115,000 cfs or 145,000 cfs.

The following is a summary of the sites and a description of potential actions that could be taken:

LAR RM 10.9 Left – Erosion at this site does not threaten the integrity of the levee due to the width of the berm. Planting woody vegetation on the bank would reduce the rate of erosion. However, recreational use at the site may dictate a more structural fix. Minor erosion was noted in 2010 in a confined area along the channel bank, likely due to animal activity and surface drainage. This erosion does not appear to have progressed significantly. Cross section surveys are an option that would enable the district to monitor the progression of the erosion at this site.

LAR RM 10.8 Right – Erosion at this site does not threaten the integrity of the levee due to the width of the berm. Planting woody vegetation on the bank would reduce the rate of erosion. However, recreational use at the site may dictate a more structural fix. Observed site characteristics are comparable to the 2016 inspection.

LAR RM 10.5 Left – Erosion at this site does not appear to threaten the integrity of the levee due to the width of the berm. However, the soils at the site appear to be non-cohesive soils that would likely erode rapidly during a high water event, especially if the vegetative cover continues to degrade due to high recreational use. Planting woody vegetation on the bank would reduce the rate of erosion. Recreational use at the site may dictate a more structural fix. Erosion at the upstream portion of the site does not appear to have progressed significantly since the 2016 inspection. A 20 foot section along the downstream end of the site continues to show signs of minor erosion. Since the 2016 inspection, fewer rodent burrows were observed along the steep middle and upper bank. If erosion continues to progress at the site, a more structural fix will be required. Repair of the site will need to accommodate intense recreational use.

The downstream portion of the site has been repaired by the US Army Corps of Engineers as part of the Sacramento River Bank Protection Program. Repairs included placing riprap along the bank as well as planting vegetation.

LAR RM 9.8 Left – This site has been repaired by the US Army Corps of Engineers as part of the Sacramento River Bank Protection Program. Construction activities included repairing the eroded sections of the site by placing riprap along the bank as well as planting vegetation.

The west end of this site (downstream, formerly known as Site 10.0L) was previously repaired and woody vegetation was planted on the waterside edge of the berm. This planting appears to have reduced the rate of erosion as it has not progressed significantly since 2016. Observations indicate the cobble and the finer particles on the surface of the berm continue to erode, exposing some of the underlying riprap. At the downstream end of the site, some of the larger rocks delineating the pedestrian access ramp have been displaced and settled on the lower bank. This appears to be the result from primarily pedestrian and recreational activity. However, this condition is largely aesthetic and the structural component appears to be intact. The repair appears to be holding up relatively well, however it is highly correlated to the amount of pedestrian use at the site. The District has historically performed minor maintenance in the area to stabilize the pedestrian path.

LAR RM 8.8 Right – This site was previously studied by the Sacramento River Bank Protection Project as the “Site 5 extension” (Lower American River – Site 5 Extension, US Army Corps of Engineers, prepared by HDR, March 2002). Consideration should be given to repairing the scalloping at this site to reduce the rate of erosion. Consideration should also be given to taking action over the entire reach to preserve the berm, equestrian trail, and existing mature vegetation. No visible progression of erosion or undercutting on vertical banks was observed during the inspection, and it should be noted that the vegetative cover appears to be similar to the 2016 inspection. Due to the high level of recreational activity at this site, a cross section survey of the entire reach was performed by MBK in March 2013. Subsequent surveys could be performed as needed to monitor the rate of erosion and degradation of the bank.

LAR RM 7.5 Right – Erosion at this site does not threaten the integrity of the levee due to the width of the berm. Planting woody vegetation on the bank may reduce the rate of erosion and should be considered. The width of the berm is substantial (greater than 100 feet) at this site. However, the apparent erodability of the exposed soils could lead to significant erosion during a high flow event, although it is not anticipated to erode the entire berm in one flood event. Armoring the bank with biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings) should be considered to preserve the berm and bike trail. Erosion at this site does not appear to have progressed since the 2016 inspection. Vegetative cover also appears to be similar to 2016.

LAR RM 2.7 Left – This site has been partially repaired by the Army Corps of Engineers under the Sacramento River Bank Protection Program. As previously noted, it was observed that the repair efforts do not appear to encompass the entire area experiencing erosion, specifically the upstream portion of the site. Erosion at the upstream end of the site threatens the integrity of the floodwall because the streambank is steeper than 3:1. This floodwall has been previously studied by MBK (Alternatives Analysis for Replacement of the Existing Floodwall at Lower American River, River Mile 2.7, March 2007). This report concluded that a failure of the wall at or below flows of 160,000 cfs would lead to localized flooding, as shown in Figure 3, because flooding would be contained by high ground that surrounds the wall. However, so long as this

floodwall is an element of the Sacramento River Flood Control Project, the integrity of the floodwall should be maintained. This site does not appear to represent an immediate threat to public safety because of high ground located behind the levee and floodwall; however, a more detailed site analysis could be performed to determine if corrective action is required.

Sacramento River RM 60.3 Left – Recreational use is frequent at this site, contributing to the degradation of the embankment. Vegetative cover observed along the lower bank in 2016 is no longer present. Most of the trees along the levee slope have exposed roots. In 2013, one of the larger trees caught fire and fell over. The tree is no longer on the bank, but the void created by the uprooted portion of the tree is on the upper bank and the area should still be monitored to identify additional erosion or degradation, especially during and after rainfall. Overall, fill with vegetation on the upper bank is a possible solution to stabilize the bank. This site does not appear to represent an immediate threat to the levee based on the low velocities that characterize the reach; however, a more detailed site analysis could reveal that corrective action is required. The District has historically performed minor maintenance in the area to address erosion at the top of the slope. This site should continue to be monitored and maintained.

Sacramento River RM 60.1 Left – This site was repaired in October 2011. The site repair included a riprap bench established at the waterline to protect the bank from wind generated waves and boat wakes. Fill material was placed above the riprap to repair the eroded embankment. The site was hydroseeded in an effort to minimize future erosion. The willow trees that were planted in 2013 along the rebuilt slope remain intact. The original riprap and embankment repair appears to be holding up well and no further repairs are necessary at this time.

In summary, based on the annual field investigations and regular visual observations by the ARFCD staff, the primary reason for their current state of erosion can be attributed to high pedestrian traffic and steep and poorly vegetated bank slopes in areas of non-cohesive soils. We observed higher than average flows since the last inspection (5 days total above 60,000 cfs and 22 days total above 30,000 cfs), but these flows did not appear to contribute to further erosion at pre-identified sites or reveal new and detectable erosion sites. Boat traffic along the American River is limited due to shallow water depths and enforced speed limits (5 miles per hour) which minimize boat wake effects as being a possible contributor to the erosion activity. Transient camps continue to be observed at various locations along the American River. These camps are generally flat areas that are cut into the bank, which can compromise bank stability. Future erosion monitoring surveys should include the monitoring of transient camps and any other semi-permanent encroachments that could pose a risk to the stability of the river bank.

Recommendations

It is recommended that the District continue to monitor the sites identified in Table 3. As site specific changes in conditions are observed, they should be documented and reported for further investigation. Inspections should continue to be performed after high water events and on an as-needed basis.

Table 3
Lower American River Erosion Monitoring
Erosion Sites Identified as a Concern
March 2018

Site	Length	Year Identified	Conditions	Modeled Velocity	Modeled Velocity	Recreational Setting	Potential Action
River Mile				115,000 CFS	145,000 CFS		
10.9L	150 feet	2005	Poorly vegetated bank with 280 feet from channel to levee. Some minor erosion was first noted in 2010 in a confined area along the channel bank, likely a combination of animal activity and surface drainage. This erosion does not appear to have progressed significantly over the past several years. Site characteristics appear to be comparable to 2016 inspection.	1-3 fps	3-4 fps	Self-maintained walking trails at top of bank.	Establish woody vegetation thicket on bank or other biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings), especially along waterside toe.
10.8R	120 feet	2005	Site characteristics are comparable to 2016 based on field inspection. Poorly vegetated, undercut bank with 175-foot berm to levee. Signs of recreational use are apparent at the site.	1-3 fps	1-3 fps	50 feet to Equestrian Trail and 85 feet to Bike Trail.	Establish woody vegetation thicket on bank or other biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings), especially along waterside toe.
10.5L	150 feet	2006	Poorly vegetated bank with non-cohesive soils and heavy recreational use. Upstream portion of site has not degraded significantly since 2016 inspection. Small section (20 feet) along downstream end of site continues to show signs of minor erosion. Fewer rodent burrows were observed in the steep upper and middle bank as compared to 2016. Downstream reach has been repaired by the Army Corps of Engineers under the Sacramento River Bank Protection Program.	1-3 fps	2-4 fps	Adjacent to Equestrian Trail and foot path.	Repair of the site will need to integrate recreational use. Due to the challenges with repairs at RM 10.0 (see 2006 report), vegetation is not likely to be successful due to the intense recreational use. Cobbles with vegetation or other biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings) are a possible solution. The downstream reach has been repaired as part of the Sacramento River Bank Protection Project, also known as the Sac Bank Program.
9.8L	1150 feet	2005	Erosion has historically occurred due to high pedestrian access / recreational use, however it does not appear to have progressed significantly since 2016 aside from the displacement of some of the larger rocks that delineate the pedestrian access ramp. The upstream reach has been repaired by the Army Corps of Engineers under the Sacramento River Bank Protection Program.	4-6 fps	5-7 fps	65 feet to levee maintenance road	The upstream reach has been repaired as part of the Sacramento River Bank Protection Project, also known as the Sac Bank Program. The downstream reach was previously repaired and appears to be holding up relatively well.
8.8R	280 feet	2005	Undercut, vertical bank sloughing into river, 100 foot berm to levee. Vegetative cover is similar to 2016. Undercutting along vertical banks does not extend below water level.	3-5 fps	4-6 fps	Adjacent to Equestrian Trail ; 60 feet to Bike Trail.	Armor bank at and below low flow shoreline with rock and treat upper bank with biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings). Cross section survey was performed by MBK in March 2013 to monitor erosion and degradation of bank.
7.5R	820 feet	2005	No visible progression of erosion compared to 2016 field inspection. Undercut, vertical bank sloughing into river, 150 foot berm to levee. Vegetative cover is similar to 2016.	3-6 fps	5-6 fps	40 feet to Equestrian Trail; 80 feet to Bike Trail.	Restore slope and armor bank.
2.7L	700 feet	2006	Site has been partially repaired by the Army Corps of Engineers under the Sacramento River Bank Protection Program. Repair efforts do not appear to encompass all areas experiencing erosion, specifically the upstream end of the site.	1-3 fps	2-4 fps	Private property, limited public access.	Extend the repair efforts further upstream to include the erosion near the existing floodwall (approximately 350 feet).
Sac River 60.3L	330 feet	2006	Site is north of the old water intake facility. Streambank above waterline is over steepened with poorly vegetated bank and non-cohesive soils. Erosion historically has migrated toward the access road on the bench. The District has historically performed minor maintenance in the area to address erosion at the top of the slope. Most trees along levee slope have exposed roots. The large tree on the upper slope that caught fire and fell towards the river in 2013 is no longer on the bank, but the void from the root wad remains on the upper bank. Vegetative cover along the lower bank observed in 2016 is no longer present.	>3 fps	>3 fps	Bike trail at top of bank. High recreational use.	Fill with vegetation or biotechnical measures such as brush mattress, willow waddles or brush boxes (all supplemented with plantings). Site (including void created by uprooted portion of tree) should continue to be monitored and maintained, especially during and after rainfall.
Sac River 60.1L	100 feet	2006	Site is between the old water intake facility and the new intake facility. Site was repaired in October 2011. Repaired levee appears to be in good condition.	>3 fps	>3 fps	Bike trail at top of bank. High recreational use.	In October 2011, a riprap bench was established at the waterline to protect the bank from wind generated waves and boat wakes. Fill material was placed above the riprap to repair the eroded embankment. The site was hydroseeded in an effort to minimize future erosion. Willows were planted above the riprap in 2013. Repair efforts have been successful and levee appears to be in good condition.

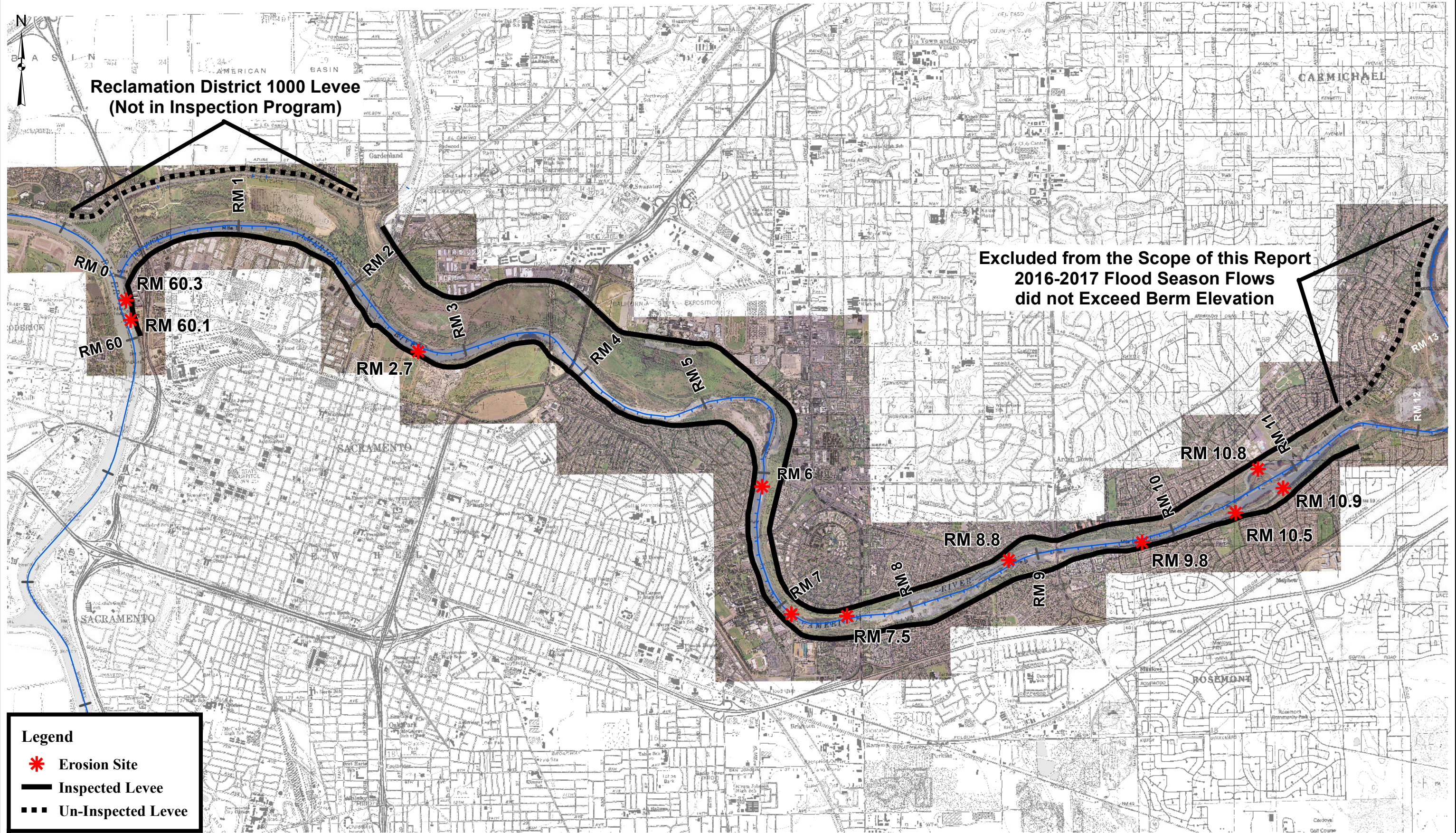
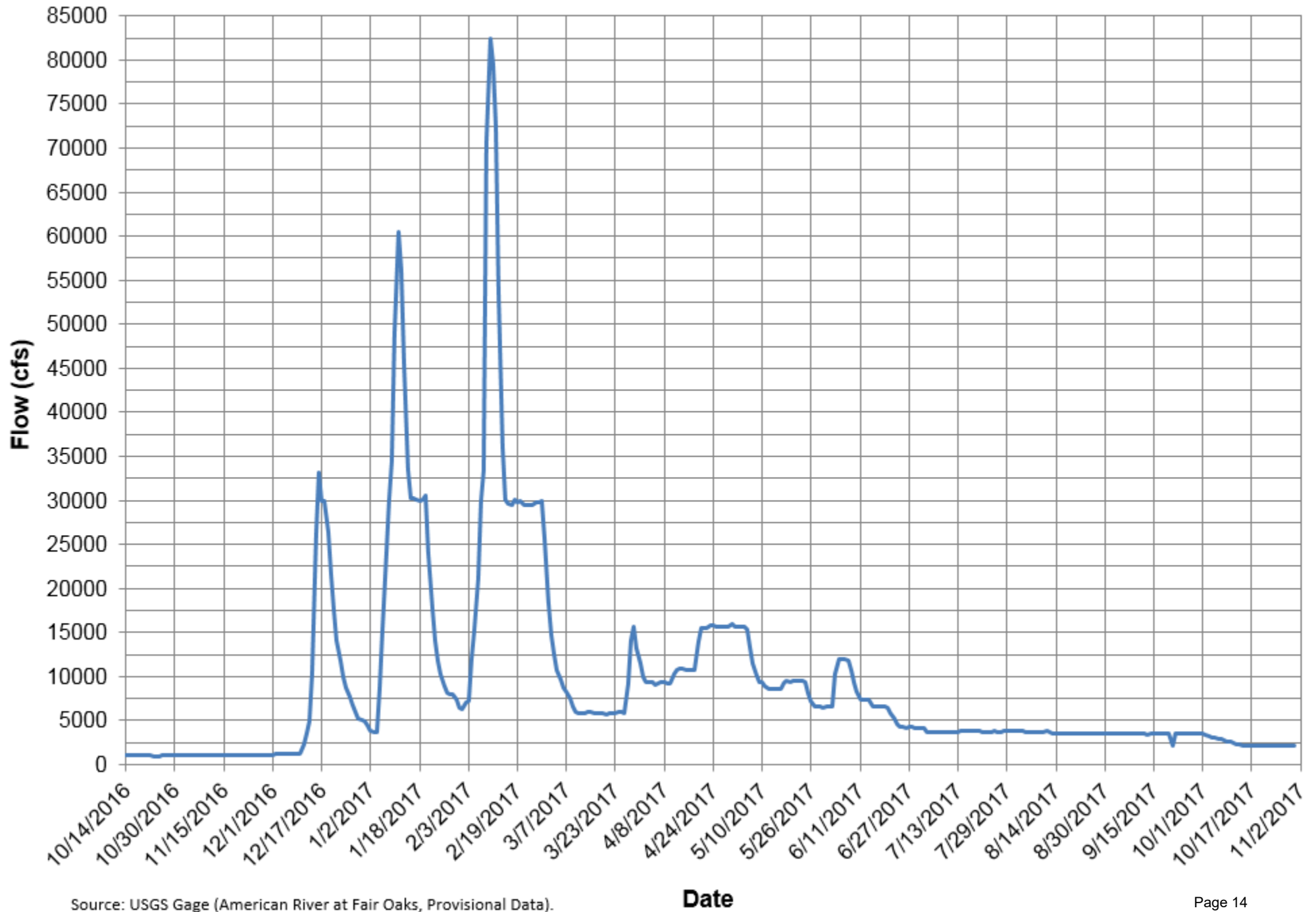
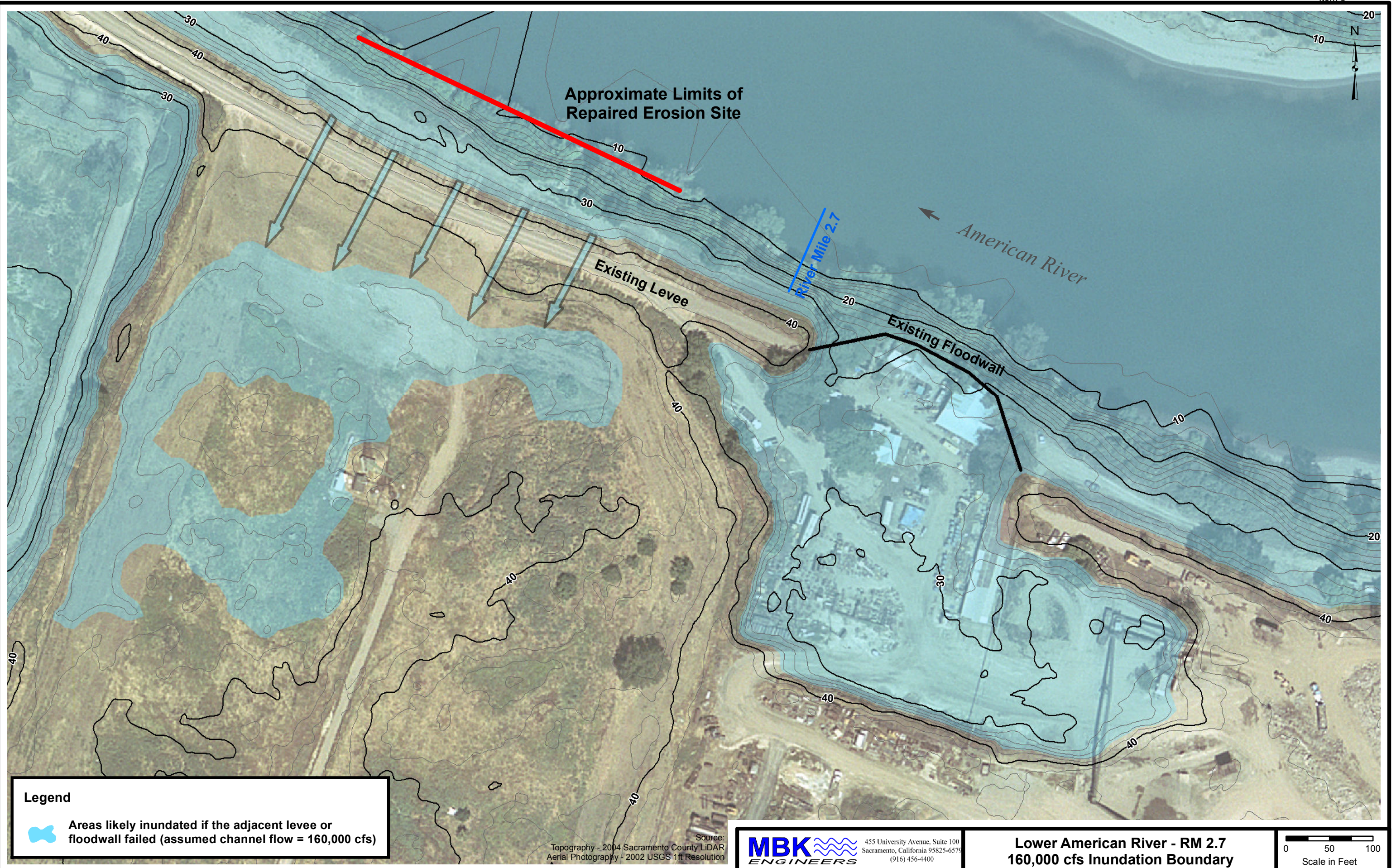



Figure 2 - Mean Daily Flows on the American River



Source: USGS Gage (American River at Fair Oaks, Provisional Data).



Legend

 Areas likely inundated if the adjacent levee or floodwall failed (assumed channel flow = 160,000 cfs)

Source:
 Topography - 2004 Sacramento County LiDAR
 Aerial Photography - 2002 USGS 1ft Resolution

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**Lower American River - RM 2.7
 160,000 cfs Inundation Boundary**

0 50 100
 Scale in Feet

Appendix A

Photos



Photograph 1 – LAR RM 10.9L (1)



Photograph 2 – LAR RM 10.9L (2)



Photograph 3 – LAR RM 10.9L (3)



Photograph 4 – LAR RM 10.9L (4)



Photograph 5 – LAR RM 10.8R



Photograph 6 – LAR RM 10.5L (1)



Photograph 7 – LAR RM 10.5L (2)



Photograph 8 – LAR RM 10.5L (3)



Photograph 9 – LAR RM 10.5L (4)



Photograph 10 – LAR RM 10.5L (5)



Photograph 11 – LAR RM 9.8L (1)



Photograph 12 – LAR RM 9.8L (2)



Photograph 13 – LAR RM 9.8L (3)



Photograph 14 – LAR RM 8.8R (1)



Photograph 15 – LAR RM 8.8R (2)



Photograph 16 - LAR RM 7.5R (1)



Photograph 17 - LAR RM 7.5R (2)



Photograph 18 - LAR RM 7.5R (3)



Photograph 19 - LAR RM 7.5R (4)



Photograph 20 - AR RM 3.7R (1)



Photograph 21 - AR RM 3.4R (1)



Photograph 22 - LAR RM 2.7L (1), upstream of repair site



Photograph 23 - LAR RM 2.7L (2), repair site



Photograph 24 - SR RM 60.3L (1)



Photograph 25 - SR RM 60.3L (2)



Photograph 26 - SR RM 60.3L (3)



Photograph 27 - SR RM 60.3L (4)



Photograph 28 - SR RM 60.1L (1)



Photograph 29 - SR RM 60.1L (2)



Photograph 30 - SR RM 60.1L (3)

Appendix B

Velocity Contours

**American River Flood Control District
Resolution 2018-07: Calling General Election**

Discussion

1. Board approved Resolution 2018-04 in March to hold election in 2018.
2. Since that time, Sacramento County Elections contacted us and requested we conform like all other agencies.
3. Sacramento County Elections has requested that all candidates work directly with their office.
 - a. Statement pickup and return
 - b. Paying fees
 - i. Sacramento County Elections will handle all over/under payments and refunds if necessary.

**Resolution 2018-07
American River Flood Control District**

CALLING GENERAL DISTRICT ELECTION

WHEREAS, an election will be held within the American River Flood Control District on November 6, 2018, for the purpose of electing three (3) Trustees to the Board of Trustees; and

WHEREAS, a statewide general election will be held within the County of Sacramento on the same day; and

WHEREAS, Elections Code Section 10403 requires jurisdictions to file with the Board of Supervisors, and a copy with the Registrar of Voters, a resolution requesting consolidation with a statewide election:

NOW THEREFORE BE IT RESOLVED that the American River Flood Control District requests the Board of Supervisors of Sacramento County to consolidate the regularly scheduled General District Election with the statewide election to be held on November 6, 2018; and

BE IT FURTHER RESOLVED that each trustee shall be a registered voter of the district and shall have resided therein at least one year next preceding his appointment or election; and

BE IT FURTHER RESOLVED that any person desiring to be a candidate at any election for trustees shall also file a statement under oath that he is a registered voter within the district and that he will not withdraw his name before the election; and

BE IT FURTHER RESOLVED that the candidate is to pay for the publication of the candidate's statement, pursuant to Election Code Section 13307, such publication cost to be pre-paid by the candidate to Sacramento County Voter Registration and Elections; and

BE IT FURTHER RESOLVED that the number of words that a candidate may use in his or her candidate's statement shall be limited to 200 words; and

BE IT FURTHER RESOLVED that the American River Flood Control District agrees to reimburse the Registrar of Voters for actual costs accrued, such costs to be calculated by the method set forth in the County's current Election Cost Allocation Procedures.

BE IT FURTHER RESOLVED that in the case of a tie between multiple candidates, the Registrar of Voters will select the winner by lot.

PASSED AND UNANIMOUSLY ADOPTED this 11th day of May, 2018.

ATTEST:

President

Secretary

General Manager's Meeting Summary – Apr 2018

4/2: SAFCA Agency Staff meeting. I attended this meeting to coordinate on local flood control topics. Items of discussion included the Magpie Creek floodplain, Regional Water Quality Control Board meetings on human camp pollution in the waterways, City protocols for homeless camp clean-up, and an active erosion site in RD 1000.

4/13: American River Flood Control District Board of Trustees meeting. The Board met in regular session. The agenda items included the FY 2016-17 Audit and an OMRR&R Agreement with SAFCA for the North Sacramento Streams project.

4/16: SAFCA Agency Staff meeting. I attended this meeting to coordinate on local flood control topics. Items of discussion included the Water Quality Control Board stakeholder meeting on human camp pollution in the waterways, status of the Sacramento River Bank Protection Project, and LMA costs for homeless camp clean-up.

4/17: Lower American River Bank Protection Working Group. I attended this working group to continue discussions on the potential for bank and levee erosion along the Lower American River. The group heard briefings on a new digital terrain model of the Lower American River and plan formulation from the Technical and Resource Advisor Committee.

4/18: Review of High Hazard Encroachments. Superintendent Kawamura and I met with Pro Mitra from MBK Engineers to inspect specific sites requiring additional maintenance actions to comply with levee accreditation. Mr. Mitra was pleased to see all of the sites on the list have been corrected.

4/24: ARFCD 2018 Election Candidate Informational meeting. I met with candidate Rachelanne Vander Werf to answer her questions on the District and the role and activities of the General Manager.

4/25: CA Central Valley Flood Protection Board Coordination Committee meeting. I attended this meeting to hear a discussion on levee OMRR&R. Representatives from the U.S. Army Corps of Engineers and the Central Valley Flood Control Association (Scott Shapiro) briefed the group. The group also heard a briefing on Emergency Evacuation Planning from regional emergency managers.

4/30: SAFCA Agency Staff meeting. I attended this meeting to coordinate on local flood control topics. Items of discussion included the Panhandle Annex and maintenance costs associated with flood relief wells.