SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER CONSERVATION DISTRICT
P. O. BOX 1810
STOCKTON, CALIFORNIA, 95201
TELEPHONE (209) 468-3000
FAX NO. (209) 468-2999

KRIS BALAJI
DIRECTOR OF PUBLIC WORKS

ADVISORY WATER COMMISSION

July 17, 2019, 1:00 p.m.

Public Health Conference Room, 1601 E. Hazelton Avenue, Stockton, California

AGENDA

I. **Roll Call**

II. **Approve Minutes for the Meeting of June 19, 2019**

III. **Discussion/Action Items:**

A. Discussion and possible action to recommend preliminary approval of the Engineer's Report and the initiation of proceedings for the formation of a Special Assessment District of the San Joaquin County Flood Control and Water Conservation District to the San Joaquin County Board of Supervisors for Flood Conveyance and Levee Maintenance Services of Zone 9 Project Levees and Channels (reference Attachments III.A.1 & III.A.2) – Kim Floyd, Kim Floyd Communications and Seth Wurzel, Larsen Wurzel & Associates

B. Integrated Regional Water Management Governance MOU Development, comments and possible action to recommend the MOU for approval to the San Joaquin County Board of Supervisors. (reference Attachment III.B) – Katie Cole, Woodard & Curran

C. SJAFCA Update – Chris Elias

D. Standing Updates – Glenn Prasad

1. Sacramento – San Joaquin Delta
2. Sustainable Groundwater Management Act – SGMA
3. Flood Management and Water Resources Activities

IV. **Informational Items (reference Attachments IV.A, IV.B, IV.C):**

A. July 1, 2019 – California Ag Today, "Friant Water Blueprint Focused on Counties South of Delta"

B. July 2, 2019 – Maven's Notebook, "Metropolitan Bay Delta Committee: Update on Governor's water resilience portfolio and Delta conveyance planning efforts"

C. July 1, 2019 – California Water Research, "DWR rushes to complete geotechnical drilling in WaterFix project alignment"

V. **Public Comment:** *Please limit comments to three minutes.*

(Continued on next page)

ADVISORY WATER COMMISSION

July 17, 2019, 1:00 p.m.

AGENDA

(Continued)

VI. **Commissioners' Comments:**

VII. **Adjournment:**

Next Regular Meeting
August 21, 2019, 1:00 p.m.
Public Health Conference Room

Commission may make recommendations to the Board of Supervisors on any listed item.

If you need disability-related modification or accommodation in order to participate in this meeting, please contact the Water Resources Staff at (209) 468-3089 at least 48 hours prior to the start of the meeting. Any materials related to items on this agenda distributed to the Commissioners less than 72 hours before the public meeting are available for public inspection at Public Works Dept. Offices located at the following address: 1810 East Hazelton Ave., Stockton, CA 95205. These materials are also available at http://www.sjwater.org. Upon request these materials may be made available in an alternative format to persons with disabilities.

REPORT FOR THE MEETING OF
THE ADVISORY WATER COMMISSION OF THE SAN JOAQUIN COUNTY
FLOOD CONTROL AND WATER CONSERVATION DISTRICT
June 19, 2019

The regular meeting of the Advisory Water Commission of the San Joaquin County Flood Control and Water Conservation District was held on Wednesday, June 19, 2019, beginning at 1:00 p.m., at Public Health Services, 1601 E. Hazelton Avenue, Stockton, California.

I. Roll Call

Present were Commissioners Nomellini, Torres-O'Callaghan, Winn, Herrick, Holbrook, Hartmann, Meyers, Neudeck; Alternates Reyna-Hiestand, Valente; Interim Secretary Prasad, Alternate Vice Chair Henneberry-Schermesser and Chairman McGurk.

Others present are listed on the Attendance Sheet. The Commission had a quorum.

II. Approval of Minutes for the April 17, 2019 Meeting

Motion and second to approve the minutes of April 17, 2019.

Unanimously approved.

SCHEDULED ITEMS

Mr. Tom McGurk, Chairman of the Advisory Water Commission (AWC), led the agenda. Commission called agenda items out of order as Mr. Andy Chesley had not yet arrived. Agenda items presented in the following order: III.C, III.B, III.A, III.D, III.E

III. Discussion / Action Items:

A. Presentation on Local Sales Tax Measure Development Insights – Andy Chesley, SJCOG

Commission introduced Andy Chesley, from the San Joaquin Council of Governments (SJCOG) to discuss Local Sales Tax Measure Development Insights. Mr. Chesley passed out copies of his presentation to the Commission for review and for following along his presentation. Mr. Chesley discussed his experience in SJCOG's taking transportation sales tax measures to the voters of San Joaquin County on two separate occasions (Measure K). Mr. Chesley provided details of the requirements, processes and procedures required to bring a tax measure to the voters; the media coverage component and the need to gather supporters as a means to reach the public and promote the project. Mr. Chesley also discussed polling the voters prior to the sales tax increase and proposed projects and explained how important polling and public education are for gaging and gaining support.

B. Discussion on Flood Conveyance and Levee Maintenance Assessment District – Seth Wurzel, Larsen Wurzel & Associates and Kim Floyd, Kim Floyd Communications

Chairman McGurk introduced Kim Floyd of Kim Floyd Communications to discuss the proposed assessment for flood conveyance and levee maintenance services of Zone 9 project levees and

channels, within the San Joaquin County Flood Control and Water Conservation District. Ms. Floyd discussed the preliminary assessment details provided at the February 20, 2019 meeting and advised that the Board of Supervisor's approval is the next phase of the assessment planning. Ms. Floyd reviewed the project and non-project channels and levee areas that are maintained by the County's Channel Maintenance Division and funded by the Zone 9 assessment as well as what the budget needs are for future project levee and channel maintenance, repairs, replacement and rehabilitation to reduce flood risk and damage. It was explained that a budget shortfall of 1.8 Million dollars was projected and the proposed solution is this new assessment, overlaying the current assessment.

Ms. Floyd turned the presentation over to Seth Wurzel.

Commissioner Neudeck asked a question regarding the budget and the inclusion of project and non-project maintenance. Seth Wurzel replied that the 6.2 million dollar budget covers both project and non-project channel and levee maintenance; however, the proposed assessment is to fund the shortfall needed for project levees and channels. Commissioner Neudeck questioned why there is a separation of the project and non-project levees and channels. Mr. Wurzel explained that because the funding is solely for project levees and channels, the approach for apportioning benefit is based solely on project levees and channels. Mr. Wurzel referenced the levee breach analysis for purposes of apportioning relative benefit from levee OMRRR (*Operations, Maintenance, Repair, and Rehabilitation & Replacement)* and drainage benefits. Jim Stone also explained the current Zone 9 funding lacked sufficient resources to comply with the regulatory requirements of project levees and channels. Fritz Buchman added that there is a lack of property rights to some of the non-project levees and channels. It was also noted that with sufficient funding for project levees and channels from this proposed assessment, that the existing funding from the Zone 9 assessment would be available to support more maintenance activities on non-project levees and channels.

Commissioner Neudeck addressed his concern for how this is presented and explained to the property owners. Ms. Floyd and Mr. Wurzel both addressed the issue as being part of the proposed public outreach approach.

Commissioner Hartmann expressed concern with Brookside paying an additional assessment when they already pay to maintain their levees. Commissioner Hartmann noted that the areas outside of Brookside benefit from the levee maintenance performed by the reclamation district but those properties do not pay. He suggested an in-kind benefit or reimbursement for what they are providing the County. It was explained that this is a new benefit assessment, separate from what is already being collected by Zone 9 and that all properties that benefit from services provided would be assessed.

Mr. Wurzel continued his review of the assessment analysis presentation, detailing the projected assessment rates based on parcel and land use type.

Commissioner Neudeck questioned the presentation of this assessment to the public and how it would be explained; response was that the appropriate outreach would address this. Mr. Wurzel spoke specifically about Smith Canal parcels and what the proposed assessment would be in addition to their current assessment rates. Commissioner Neudeck asked about an outreach session for Smith Canal prior to general outreach. Ms. Floyd advised of previous outreach meetings and explanations.

Question from Tom Flinn regarding the graphing and detailed maps for presentations. It was advised that additional mapping could be generated and provided.

Commissioner Neudeck asked a question regarding the boundaries on the map included within the presentation. Mr. Wurzel explained that the boundary of all benefiting parcels extends outside of the County but the proposed assessment would only be levied within the County because the Flood Control District cannot levy assessment outside of the County. Mr. Wurzel explained however, that the benefits apportioned to parcels outside of the County are not made up (subsidized by) on parcels within the County.

Question from Mary Elizabeth-Sierra Group, regarding the slides and the assessment rates shown and how the proportional increase is not the same. Mr. Wurzel explained the proposed assessment rates shown on the slides that show overlap with existing assessments do not demonstrate the proportionality of proposed assessment. Further, the amounts shown as averages were only for comparison purposes. Ms. Floyd explained that when we provide assessment rates in the future that will be shown based upon a typical parcel. Mary Elizabeth addressed concerns about the public response to seeing those proposed rates that do not appear to be fairly assessed.

Ms. Floyd explained that they are working to gather information and concerns to be able to best present this to the public. Ms. Floyd further explained the online assessment calculator they are going to have so that property can look up their proposed assessment online. Kris Balaji expressed importance of having someone at the outreach meetings with a computer to assist the public with using the assessment calculator to find their proposed assessment rate. Ms. Floyd also advised there will be a hotline for property owners without computer access, they can call in and she can help them figure out their proposed assessment. It was reiterated that public outreach presentations would include information and data to facilitate public awareness and understanding.

Ms. Floyd concluded her presentation with the timeline for moving forward with the proposed assessment: public review of the draft Engineer's Report in July to include presentations to the AWC and the SJAFCA Board; then Board approval for public outreach and the balloting process following in September. Ms. Floyd asked for items requested for next meeting, maps, key points, etc.

C. Discussion on Integrated Regional Water Management Governance MOU Development – Katie Cole, Woodard Curran

Chairman McGurk introduced Katie Cole, representative from Woodard Curran, for a presentation on the draft MOU for IRWM Governance and its development. Ms. Cole distributed copies of the Draft MOU to Commission Members for review; discussed the draft MOU and the details from April's meeting; reviewed the presentation slides; reviewed the IRWM roadmap, detailing what IRWM is and what we are trying to accomplish; addressed staff direction and recommendations; and how to organize ourselves as a water management group.

Further discussion was had on the flexibility of the group, allowing for more agencies to join in or leave the group. It was discussed that a Coordinating Committee would handle requests from an agency to join or leave the group.

Ms. Cole spoke further on the Financing portion of the draft MOU, discussing grant and state programs and the need to get the plan updated in order to be eligible for funding. Ms. Cole discussed the County paying the initial upfront costs to get in compliance and to be eligible for grant and state funding and application processing, adding that agencies with projects that they wish to have covered under the grant, will share a cost of those fees paid by the County.

Ms. Cole requested the Commission to review the draft MOU with their agencies and staff and to flag any areas of concern or comment. Comments directed to Glenn Prasad will be addressed at the next meeting.

Fritz Buchman questioned the emailing of the draft MOU to the AWC Board for review and response. Ms. Cole responded that it could, but to allow two weeks for comments and corrections in order to be finalized by July meeting. If more time needed, that is acceptable.

Commissioner Holbrook stated that there should be a signed sheet for agencies wishing to leave the group, similar to the sheet to join, ensuring vacating is confirmed.

Supervisor Winn commented on the lack of participation and commitment during major planning from the different agencies and the importance of this group on the future of water related issues and the challenges faced. He also expressed the need for more formality along with more participation.

D. SJAFCA Update – Chris Elias

Nothing to report from Chris Elias

E. Standing Updates

Standing Update 1 discussed briefly due to time, would go well beyond scheduled meeting end time.

1. Sacramento – San Joaquin Delta

   Commissioner Winn provided updates regarding the Governor's plan to proceed with the single tunnel. Commissioner Winn provided details of meetings he attended with other agencies and the Governor.

   Kris Balaji advised of letter sent to DWR regarding permitting needed for their geological investigation drilling. Discussion was had regarding drilling beginning that week and whether or not permitting is needed or not.

2. Sustainable Groundwater Management Act – SGMA (See Attached)

3. Flood Management and Water Resources Activities

   a. March 20, 2019 – California Central Valley Flood Control Association 2019 Flood Forum Presentations (See Attached)

IV. **Informational Items:**

A. **May 28, 2019 – Bay Area News Group article "Seeking more water, Silicon Valley eyes Central Valley Farmland"**

B. **February 18, 2019 – Ca Department of Fish & Wildlife: "Nutria Eradication Efforts Moving Ahead in Delta"**

C. **June 7, 2019 – Manteca Bulletin article – "Manteca used lowest amount of groundwater in 16 years during May"**

V. **Public Comment: Public comments, adopted by the Advisory Water Commission on January 17, 2018, will be limited to 3-minutes, unless extended to the discretion of the Chair.**

No Public Comments received.

VI. **Commissioner's Comments:**

No comments given.

Next Regular Meeting: July 17, 2019 at 1:00 p.m.
Public Health Conference Room

VII. **Adjournment:** 3:40 P.M.

MEMORANDUM OF UNDERSTANDING OF THE INTEGRATED WATER MANAGEMENT PLANNING COORDINATING COMMITTEE MEMBERS TO FORM A REGIONAL WATER MANAGEMENT GROUP

1 Purpose and Goals

The purpose of this Memorandum of Understanding (MOU) is form a coordinating committee (hereinafter referred to as the "Greater San Joaquin County Coordinating Committee" or "Coordinating Committee") of members that wish to participate in the integrated regional water management (IRWM) planning. The MOU hereby creates the Greater San Joaquin County Regional Water Coordinating Committee and sets forth the goals and the rules by which it will operate.

The goals of the Coordinating Committee are:

- To develop a comprehensive planning document to facilitate regional cooperation in providing water supply reliability, water recycling, water conservation, water quality improvement, stormwater capture and management, flood management, and environmental and habitat protection and improvement.
- To foster coordination, collaboration, and communication between Coordinating Committee organizations and interested stakeholders, to achieve greater efficiencies, enhance public services, and build public support for vital projects.
- To support the procurement of State and Federal grant funding.

2 Non-binding Nature

This MOU and participation in this MOU and IRWM efforts are non-binding; a member may withdraw from participation at any time.

3 Coordinating Committee Membership

Any organization with an interest in integrated regional water management planning may join the Greater San Joaquin County Coordinating Committee. Members could include but are not limited to such organizations as: water agencies, conservation groups, agriculture representatives, community action groups, businesses, tribal groups, and land use entities.

4 Coordinating Committee Representation

Each Coordinating Committee member that is an organization will identify their lead representative for the Coordinating Committee and will attend Coordinating Committee meetings to make decisions. Coordinating Committee members may choose to identify one (1) alternate but they are encouraged to have the primary representative attend the Coordinating Committee meetings for consistency.

5 Joining and Leaving

To join the Coordinating Committee, a prospective member must notify the Coordinating Committee at _____ of their intent to join, then sign this MOU. To discontinue their participation in the Coordinating Committee a member may do so at any time by notifying the Coordinating Committee and signing the Notice of Withdrawal, at which point they will no longer be a member of the Coordinating Committee.

6 Decision-Making

At its inaugural meeting, the Coordinating Committee will prepare a decision-making charter outlining the process for making decisions. All signatories to the MOU will agree and adhere to the decision-making charter.

7 Financing

To be eligible for funding through many state programs, projects must be included in an Integrated Regional Water Management Plan (IRWMP) that conforms to the most recent Guidelines. San Joaquin County will provide the funding to update the GSJC IRWM Plan to conform to 2016 DWR IRWM Guidelines.

To expedite the grant application process, San Joaquin County shall provide initial funding for a consultant to develop grant applications. The total cost of the consultant and applications shall be shared by those entities with projects included in the grant applications. If an entity does not put forth a project for a grant application, that entity is not responsible for providing funding for that grant application.

SIGNATURE PAGE
MEMORANDUM OF UNDERSTANDING
GREATER SAN JOAQUIN COUNTY
INTEGRATED REGIONAL WATER MANAGEMENT REGION

_____

Date

_____

Organization

Primary Representative

Name: _____

Email: _____

Telephone: _____

Mailing Address: _____

Secondary Representative

Name: _____

Email: _____

Telephone: _____

Mailing Address: _____

SIGNATURE PAGE
NOTICE OF WITHDRAWAL FROM COORDINATING COMMITTEE
GREATER SAN JOAQUIN COUNTY
INTEGRATED REGIONAL WATER MANAGEMENT REGION

As a representative of my organization, I understand that in signing this page and submitting it to the Coordinating Committee, I am withdrawing my organization from participating in IRWM as a member of the Greater San Joaquin IRWM Region Coordinating Committee.

_____

Name & Title

_____

Organization

_____

Date

MEASURE K TRANSPORTATION SALES TAX IN SAN JOAQUIN COUNTY

HOW DID WE GET HERE?

1990 EFFORT

- IN 1990 THE SAN JOAQUIN COUNCIL OF GOVERNMENTS WITH THE COOPERATION OF THE THEN SIX CITIES AND THE BOARD OF SUPERVISORS BROUGHT TO THE VOTERS A MEASURE TO RAISE THE SALES TAX IN SAN JOAQUIN COUNTY BY ½% FOR TWENTY YEARS. IT PASSED WITH 61% OF THE VOTE, WHICH AT THE TIME WAS ENOUGH TO SECURE ITS PASSAGE. TODAY A SPECIAL SALES TAX LIKE THIS REQUIRES AT TWO THIRDS MAJORITY VOTE.
- IMPLEMENTATION BEGAN IMMEDIATELY OVER THE NEXT SIXTEEN YEARS WHEN WE WENT BACK TO THE VOTERS FOR A RENEWAL

2006 RENEWAL EFFORT

- BUILDING ON 1990 EFFORT
- PROCEDURE
- LINING UP THE SUPPORTERS
- FINDING OUT WHAT THE VOTERS WILL SUPPORT
- KEEPING THE GANG FROM FIGHTING
- THE EDUCATION PROCESS

BUILDING ON 1990 EFFORT

- ALL PROJECTS HAD SIGNAGE
- ANNUAL REPORTS
- NEWS COVERAGE
- MONUMENTS (CAPITAL PROJECTS

PROCEDURE

- WE HAVE GENERIC LEGISLATION FOR TRANSPORTATION SALES TAX MEASURES
- REQUIRES AN EXPENDITURE PLAN BE DEVELOPED
- MUST HAVE AN AGREEMENT WITH THE BOARD OF EQUALIZATION
- MUST BE APPROVED BY MAJORITY OF CITIES REPRESENTING MAJORITY OF POPULATION
- MUST BE PLACED ON THE BALLOT BY THE BOARD OF SUPERVISORS

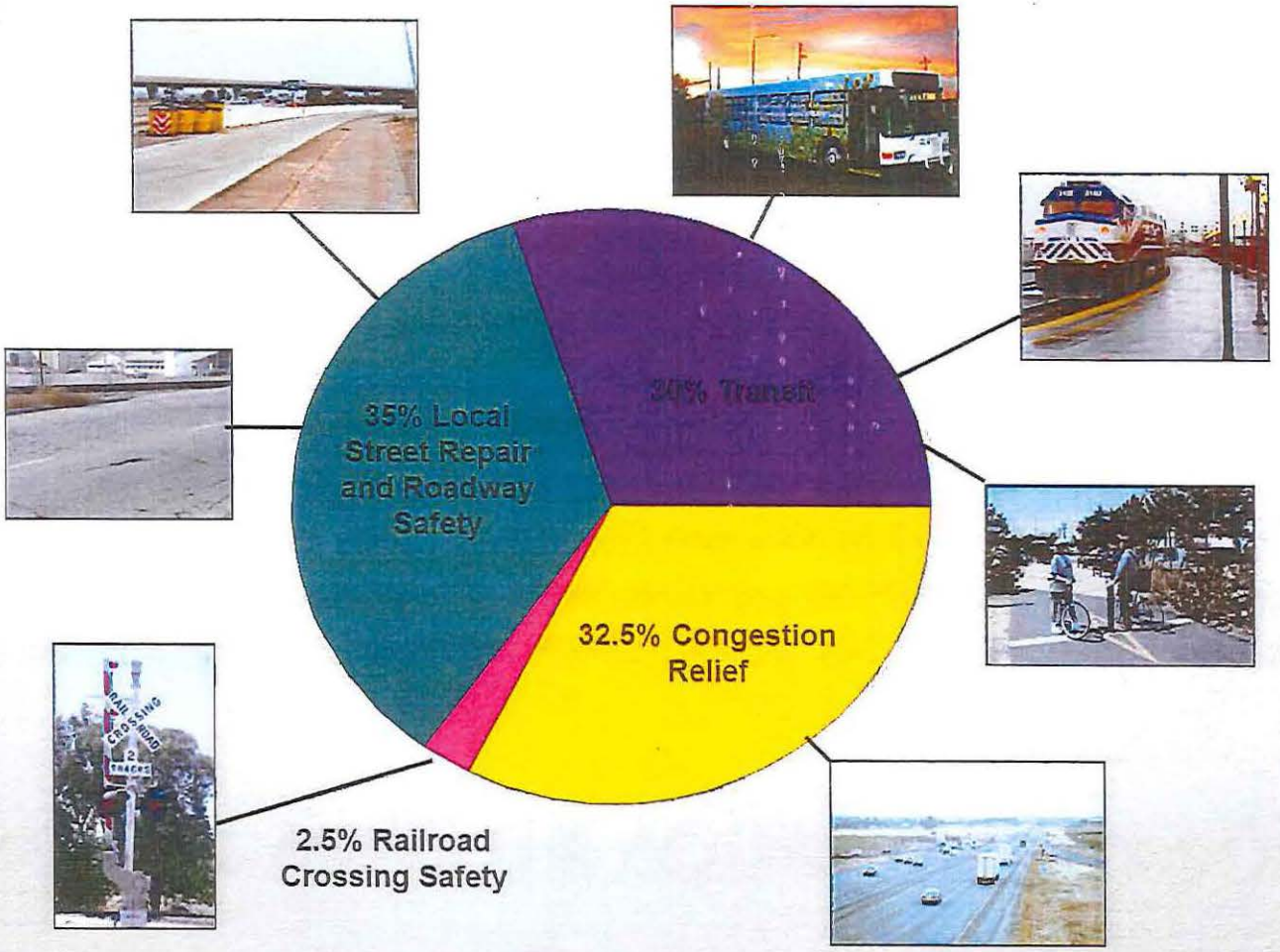
LINING UP THE SUPPORTERS

- SUPPORTERS:
  - BUSINESS COMMUNITY
  - BUILDING INDUSTRY
  - TRADE UNIONS
  - ENVIRONMENTALISTS
  - PUBLIC AGENCIES

MAYBE AS IMPORTANT IS TO NOT HAVE CERTAIN GROUPS OPPOSED

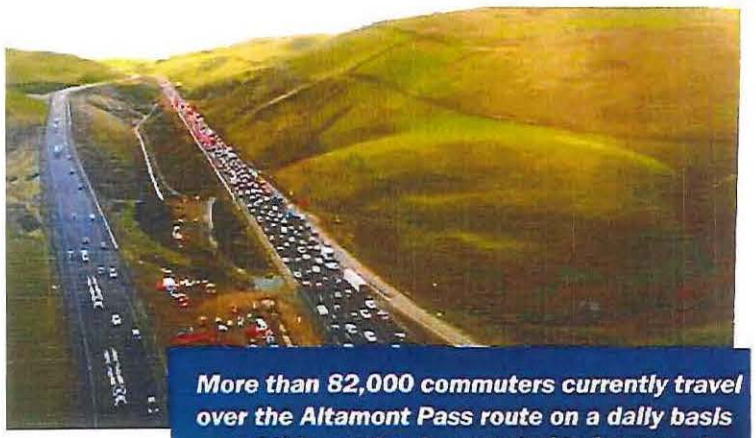
FINDING OUT WHAT THE VOTERS WILL SUPPORT

- DO A GOOD POLL
- UNDERSTAND THAT THE FIRST QUESTION WILL BE SOMETHING LIKE "DO YOU SUPPORT A HALF CENT SALES TAX TO IMPROVE NEEDED TRANSPORTATION PROJECTS IN SAN JOAQUIN COUNTY?" THE ANSWER YOU GET TO THAT WILL TELL YOU A LOT ABOUT WHETHER YOU WILL BE SUCCESSFUL
- MORE IMPORTANT THAN THE AMOUNT OF SUPPORT ON PARTICULAR PROJECTS IS THE AMOUNT OF OPPOSITION. IN A TWO THIRDS VOTE YOU CAN NOT HAVE PROJECTS THAT GENERATE OPPOSITION
- DO NOT HAVE A PUBLIC AGENCY PAY FOR AND POSSESS THE POLL
- LISTEN TO THE POLL. THE BIGGEST MISTAKE MADE IN PREPARING EXPENDITURE PLANS IS TO DISMISS POLLING RESULTS


35% Local Street Repair and Roadway Safety
30% Transit
32.5% Congestion Relief
2.5% Railroad Crossing Safety
RAIL ROAD CROSSING
2 TRACKS

THE EDUCATION PROCESS

- PUBLIC AGENCIES CAN AND MUST EDUCATE THE PUBLIC ON THE MEASURE
- WE DID THIS BEFORE THE "CAMPAIGN" SEASON
- THE "CAMPAIGN" CAN SAY "VOTE YES ON MEASURE K" NOT THE PUBLIC AGENCIES
- DO NOT THINK THAT EDUCATION TURNS PEOPLE FROM OPPONENTS TO SUPPORTERS
- DO NOT OVERTHINK THIS. BE DIRECT.
- WE DID A RENEWAL IN 2006 WHICH IS MORE STRAIGHTFORWARD THAN A BRAND NEW EFFORT.
- MEASURE K PASSED WITH 78% OF THE VOTE IN NOVEMBER OF 2006



More than 82,000 commuters currently travel over the Altamont Pass route on a daily basis – and this number is expected to increase by up to 75 percent from 2016 by 2040.

KEEPING THE GANG FROM FIGHTING

- FOR US PUBLIC WORKS DEPARTMENTS, TRANSIT PROVIDERS AND PLANNING DEPARTMENTS HAVE TO WORK TOGETHER.
- DISAGREEMENT FEEDS OPPOSITION
- FOR US THE DISTRIBUTION OF LOCAL ROADS AND STREETS FUNDS BETWEEN THE COUNTY AND THE CITIES WAS CRUCIAL
- ESSENTIAL TO HAVE A PROCESS AND A FORUM WHERE THESE ISSUES CAN BE WORKED OUT WITHOUT RANCOR AND WITHOUT PUBLIC EXPOSURE

2019 ADVISORY WATER COMMISSION ROSTER, ROLL CALL & VOTE SHEET

(5 members necessary for quorum)

AGENCY	REP Commissione	TERM	ALT Alternate	TERM	JAN 16	FEB 20	MAR 20	APR 17	MAY 15	JUN 19	JUL 17	AUG 21	SEP 18	OCT 16	NOV 20	DEC 18
CDWA	Nomellini, Dante J.	12/10/19	Nomellini, John Dante, Jr.	12/10/19	X	X	meeting Cancelled Flood Forum	x	meeting Cancelled	X						
CSJWCD	Roberts, Reid	12/11/18	Thompson, Grant	12/11/18		X										
City of Escalon	Murken, Walter	02/24/20	Alves, Edward B.	02/24/20												
City of Lathrop	Torres-O'Callahan, Jenniefer	12/12/22	Lazard, Diane	12/12/22		X		x		X						
City of Lodi	Swimley, Jr., Charlie	02/21/21	Richle, Andrew	02/21/21	X	X		x								
City of Manteca	Breitenbucher, David	03/13/23	Houghton, Mark	03/13/23		X										
City of Ripon	de Graaf, Daniel	06/27/21	Uecker, Dean	06/27/21		X		x								
City of Stockton	Andrade, Jesús	03/13/19	Wright, Dan	03/13/19		X										
City of Tracy	Sharma, Kuldeep	01/16/23	Reyna-Hiestand, Stephanie	01/16/23	X	X		x		X						
NSJWCD	Starr, Charlie	12/10/19	Valente, Joe	12/11/19	X	X		x		X						
OID	Doornenbal, Herman	01/26/16	~~Alpers, Jack~~ Deceased	~~01/26/16~~												
BOS	Sup. Winn, Chuck	01/01/23	Sup. Miller, Kathy	01/01/20	X	X		x		X						
SDWA	Herrick, John	01/25/20	VACANT		X	X		x		X						
SSJID	Holbrook, John	01/17/21	~~Kuil, Dale~~ Deceased	~~01/17/21~~	X	X		x		X						
S/W County	Weisenberger, David	09/26/18	VACANT													
WID	Christensen, Anders	12/12/22	~~Heberle, Doug~~ No Longe	~~12/12/18~~	X	X										
Enviro/Fish/Wildlife Org	Salazar Jr., Joe	03/13/19	N/A													
Urban Flood Control RD	Hartmann, George	08/19/19	N/A		X	X		x		X						
Urban Flood Control RD	Meyers, Drew	08/19/19	N/A		X	X		x		X						
General Bus Com	VACANT		N/A													
Bldg & Constr Industry	Neudeck, Christopher	08/19/19	N/A		X	X		x		X						
Interim SECRETARY	~~Prasad, Glenn~~ ~~Nakagawa, Brandon~~	N/A	N/A		X	X		x		X						
VICE CHAIR At-Large Rep	AT LARGE REP Wells-Brown, Terry	01/16/23	AT-LARGE ALT Annette Henneberry Schermesser (late to roll call)	01/16/23	X	X		x		X						
CHAIRMAN	SEWD McGurk, Thomas	12/10/19	~~SEWD~~ Sanguinetti, Paul	12/10/19	X	X		x		X						
STOP HERE ON ROLL CALL																
CA Water Service Co	Freeman, John (Ex-officio)	PERM														

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT

ADVISORY WATER COMMISSION

MEETING OF June 19, 2019

ATTENDANCE SHEET

NAME	SIGNATURE	AFFILIATION	E-MAIL ADDRESS	PHONE
Nomellini, Dante		CVWA		
Nomellini, Dante Jr				
Roberts, Reid				
Thompson, Grant				
Murken, Walter				
Alves, Edward				
Torres-O'Callahan, Jennifer		Lathrop		
Lazard, Diane				
Swimley, Charlie Jr				
Richle, Andrew				
Breitenbucher, David				
Houghton, Mark				
De Graaf, Daniel				
Uecker, Dean				
Andrade, Jesus				
Wright, Dan				
Sharma, Kuldeep				
Reyna-Hiestand Stephanie		City of Tracy		
Starr, Charlie				
Valente, Joe		NSJWCA	jcvalente@sbcglobal.net	
Doornenbal, Herman				
Sup. Winn, Chuck				
Sup. Miller, Kathy				
Herrick, John				
Holbrook, John		SSJID	jholbrook@ssjid.com	2099864789

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT

ADVISORY WATER COMMISSION

MEETING OF June 19, 2019

ATTENDANCE SHEET

NAME	SIGNATURE	AFFILIATION	E-MAIL ADDRESS	PHONE
Weisenberger, David				
Christensen, Anders				
Salazar, Joe Jr				
Hartman, George	Present (JS)			
Meyers, Drew				
Neudeck, Christopher		BLDG	CNEUDECKE KSNINC.COM	946 0268
Wells-Brown, Terry				
Henneberry Schermesser, Annette		AWC-ACT		
McGurk, Thomas	Present (JS)			
Sanguinetti, Paul				
Freeman, John				
GLENN PRASAD		SJC.	gprasad@sjgov.org	
Fritz Buchman		SJC		

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER
CONSERVATION DISTRICT

ADVISORY WATER COMMISSION

MEETING OF June 19, 2019

ATTENDANCE SHEET

NAME	AFFILIATION	E-MAIL ADDRESS	PHONE
Mary Elizabeth	Sierra Club	mebeth@outlook.com	
Danny Trejo	City of Stockton	Danny.Trejo@stocktonca.gov	(209)937-8782
Mel Lytle	COS		
Brandon Nakagawa	SSJID		
Chris Elias	SJAFCA	Chris.elias@stocktonca.gov	209 937 8556
MEGAN PORTER	KLEINFELDER	mporter@kleinfelder.com	805-550-0679
TOM MCGURK	SEWD		
Drew Meyers	RD's		
Jane Wagner-Tyack	LWVSJC/County Cons		
Katie Cole	Woodard & Curran	kcole@woodardcurran.com	
Will Price	At Large	Same	
Seth Wurzel	LWA	SETH@LAGUNAWURZEL.COM	
Alicia Connelly	San Joaquin County		
Kristy Smith	SJC		

ATTACHMENT
III. A.1

SAN JOAQUIN COUNTY

Greatness grows here.

Public Works San Joaquin County Working for YOU

San Joaquin County Flood Control and Water Conservation District

Flood Conveyance and Levee Maintenance Assessment District

July 17, 2019

Today's Presentation

- **Staff Recommendation**
- **Review of Services**
- **Current Funding Sources and Needs**
- **Proposed Benefit Assessment**
- **Process and Timing**

Staff Recommendation

- **Recommend BOS initiate proceedings for the formation of a Special Benefit Assessment District of the San Joaquin County Flood Control and Water Conservation District for Flood Conveyance and Levee Maintenance services of Zone 9 project levees and channels**

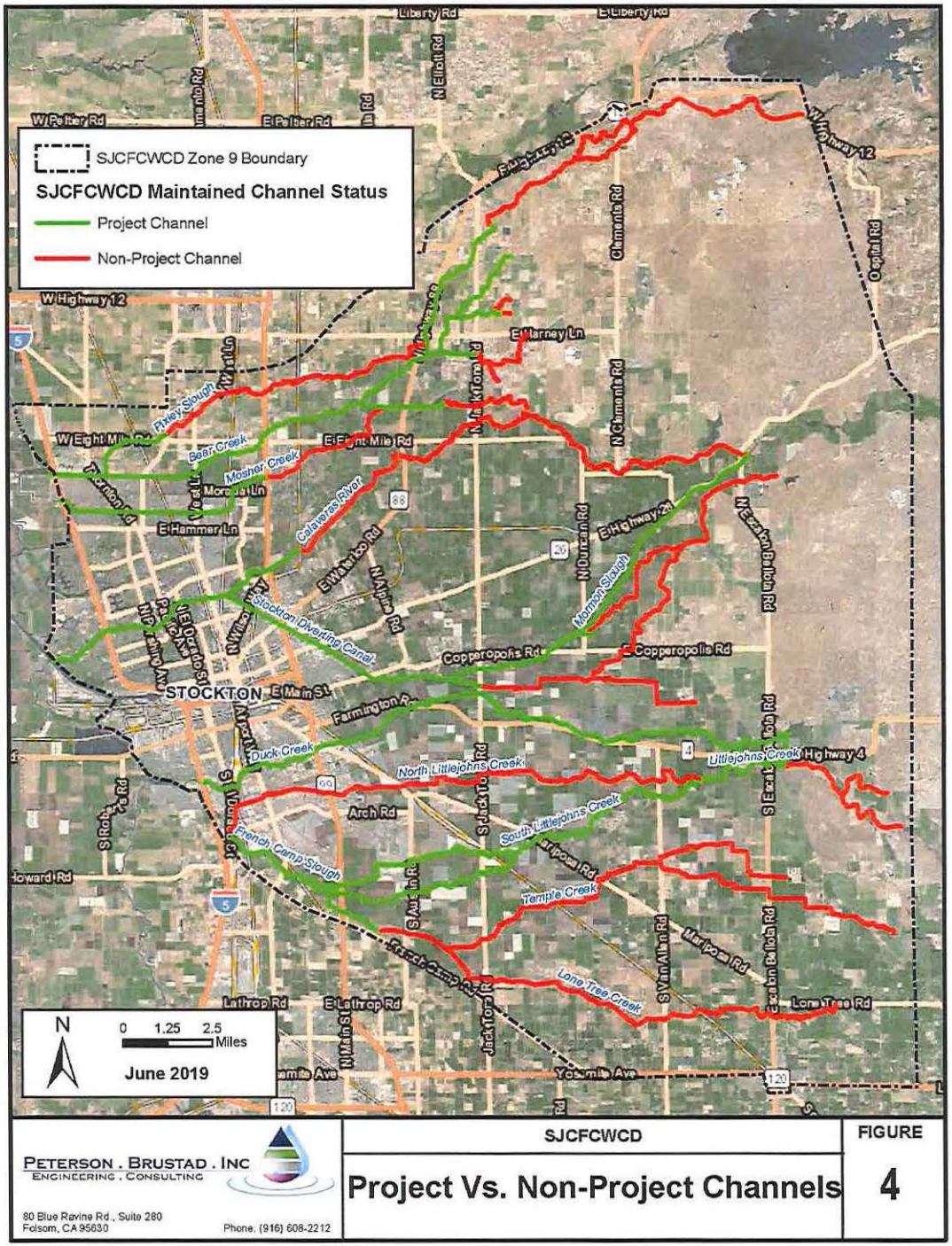
Approach for new Assessment District

- **Approach**
  - Evaluation of flood conveyance through project channels (Channel Maintenance Benefit)
  - Evaluation of avoided flooding from project levees (Levee Maintenance Benefit), and
  - Evaluation of additional funding required to maintain Zone 9 project levees and channels
- **Flood Control and Levee Maintenance (Flood CALM) Assessment District**

Services

- **Flood Conveyance**

  All channel operation and maintenance activities associated with the conveyance and discharge of runoff water through Zone 9 project channels maintained by SJCFCWCD

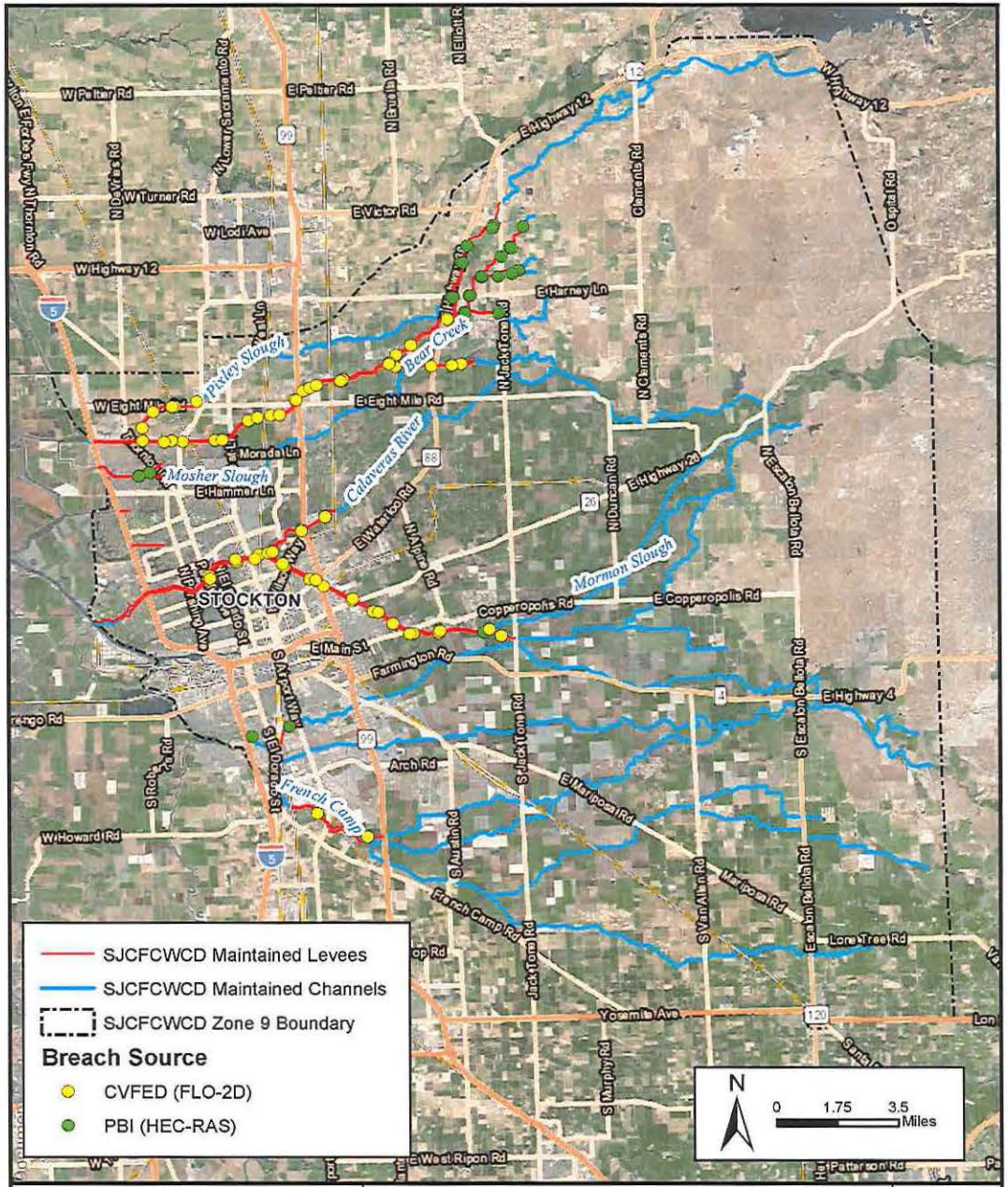


SAN JOAQUIN COUNTY

Services

- **Levee Maintenance**

  All levee operation and maintenance services required to ensure that the design level of flood protection is maintained over time for Zone 9 project levees maintained by SJCFCWCD



PETERSON . BRUSTAD . INC
ENGINEERING . CONSULTING

80 Blue Ravine Rd., Suite 280
Folsom, CA 95630
Phone: (916) 608-2212

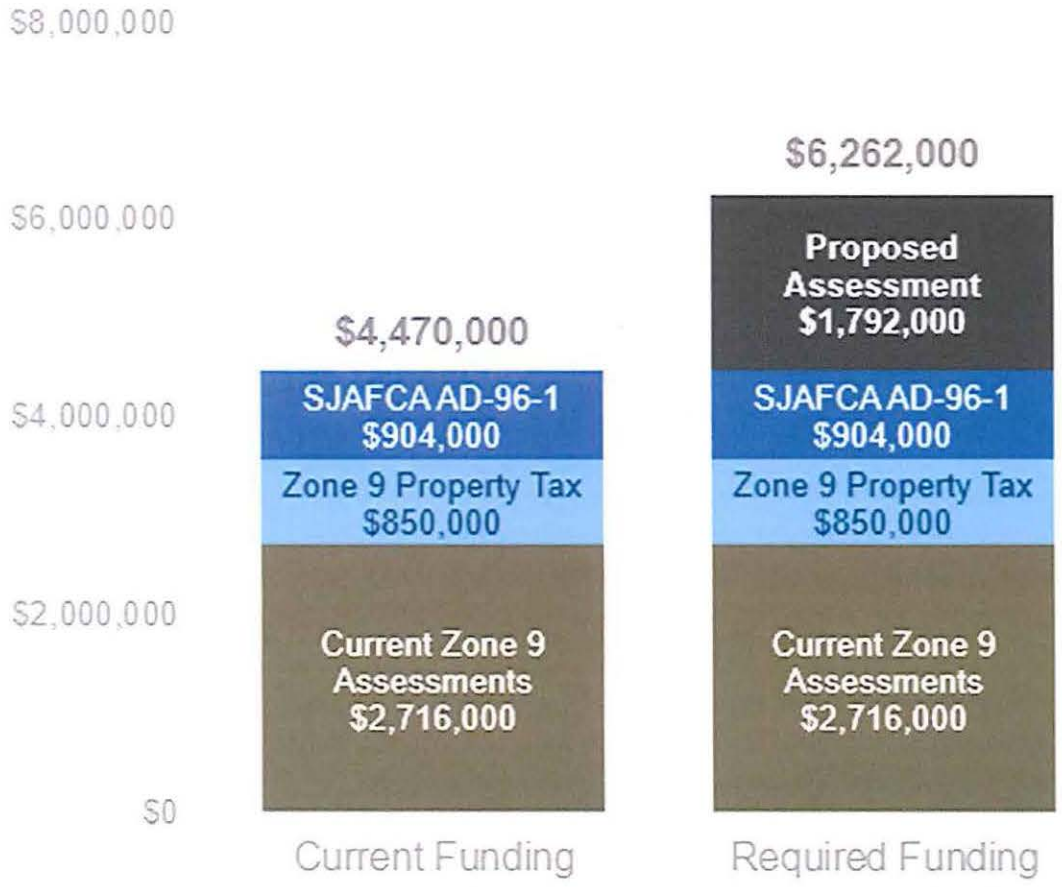
SJCFCWCD

Levee Reaches & Breach Locations

FIGURE **2**

SAN JOAQUIN COUNTY

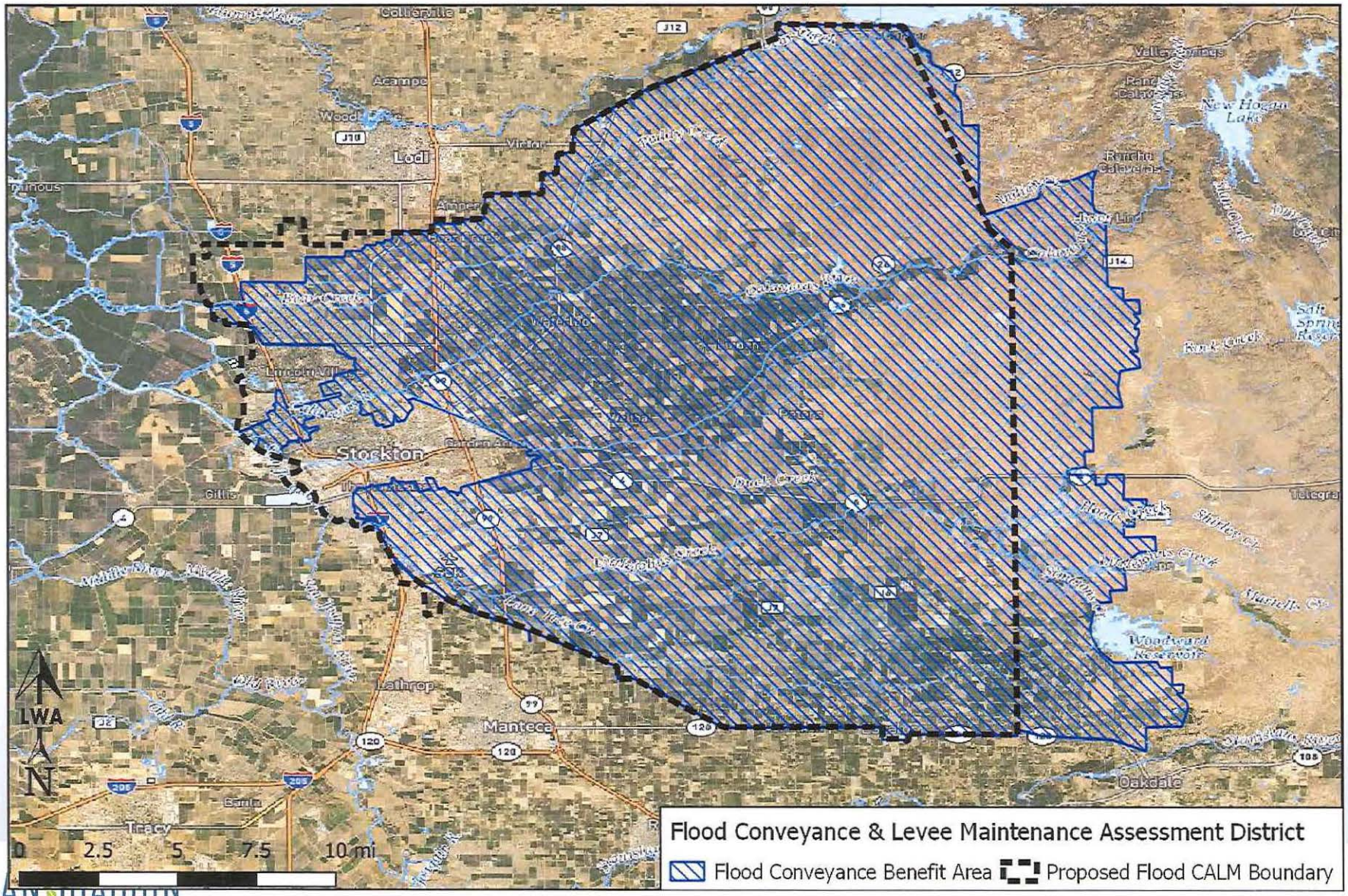
Additional Funding Need



Categories	Annual Budget
O&M	$5,734,000
Engineering	$70,000
State & Fed Coordination	$305,000
Admin. & Compliance	$65,000
Legal & Insurance Burden	$88,000
Subtotal Budget	**$6,262,000**
Current Zone 9	($2,716,000)
Property Taxes	($850,000)
SJAFCA AD 96-1	($904,000)
Subtotal Revenues	**($4,470,000)**
Flood CALM Budget	**$1,792,000**

SAN JOAQUIN COUNTY

Proposed Flood CALM Boundary



SAN JOAQUIN COUNTY

Assessment Methodology / Engineer's Report

- **Levee O&M Benefit**
  - Benefit based on avoided damages to:
    - *Land & Structures*
- **Flood Conveyance Benefit**
  - Benefit based on:
    - *Runoff (Runoff Coefficient & Parcel Size)*
    - *Relative length and effort to maintain the channel conveying flood water*
- **Benefit apportioned based on property characteristics (includes location)**

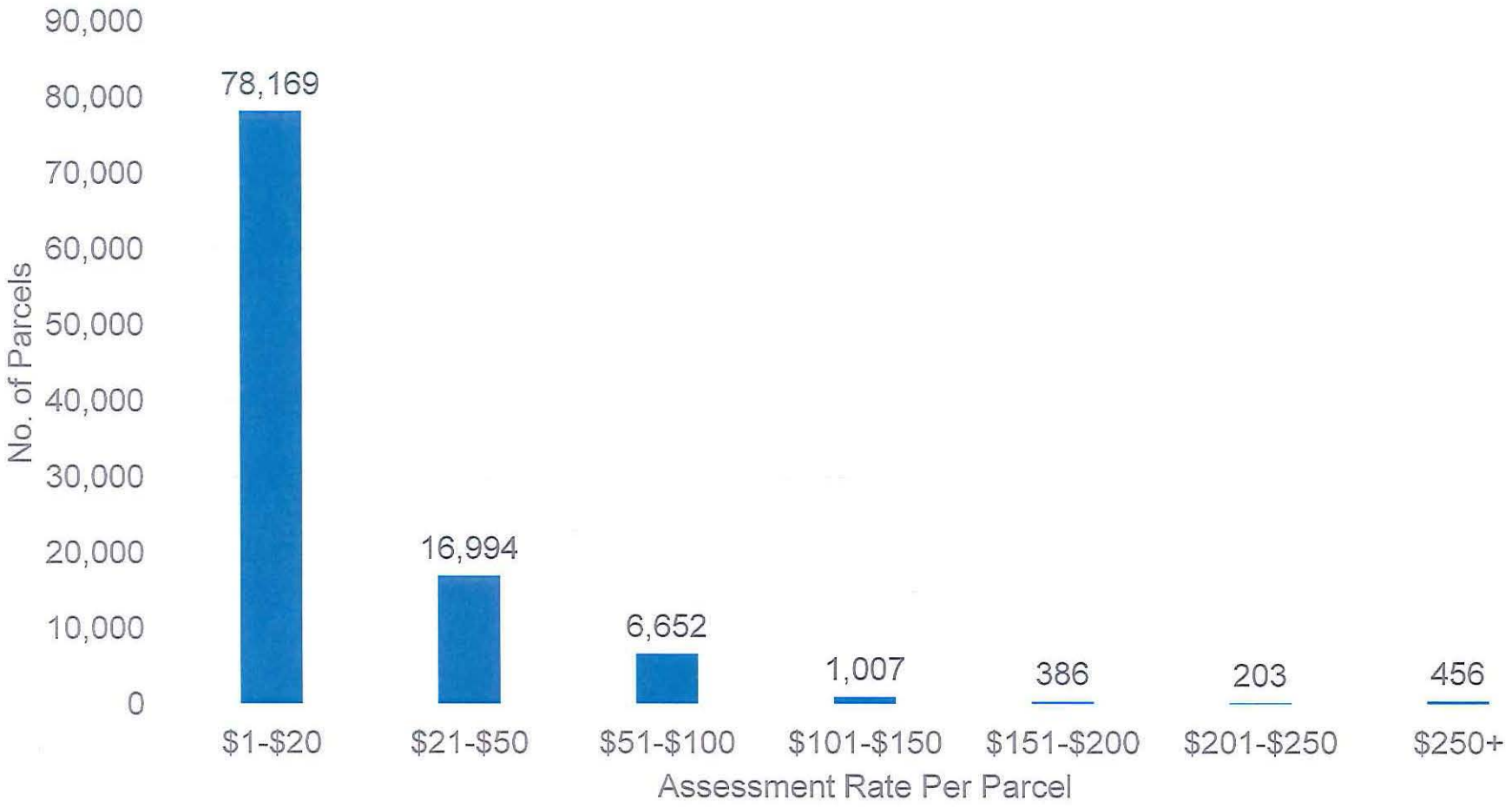
Benefit Apportionment & Assessment Rate

- **Cost to provide special benefits is equal to the budget for Flood CALM**
  - Total Budget of $1,792,000

- **Cost is apportioned to Total Benefit Units**
  - Total Benefits Units = (Levee O&M Benefits x Equalization Factor) + Flood Conveyance Benefits
  - Equalization Factor between Levee O&M and Flood Conveyance
    - Benefits need to reflect relative level of benefit and effort between Levee O&M and Conveyance. County has determined a **3:1 ratio between Levee O&M and Flood Conveyance services.**
    - Also need to adjust for difference in the magnitude of benefit units between Levee and Flood Conveyance

Proposed Benefit Assessment – Rate Distribution

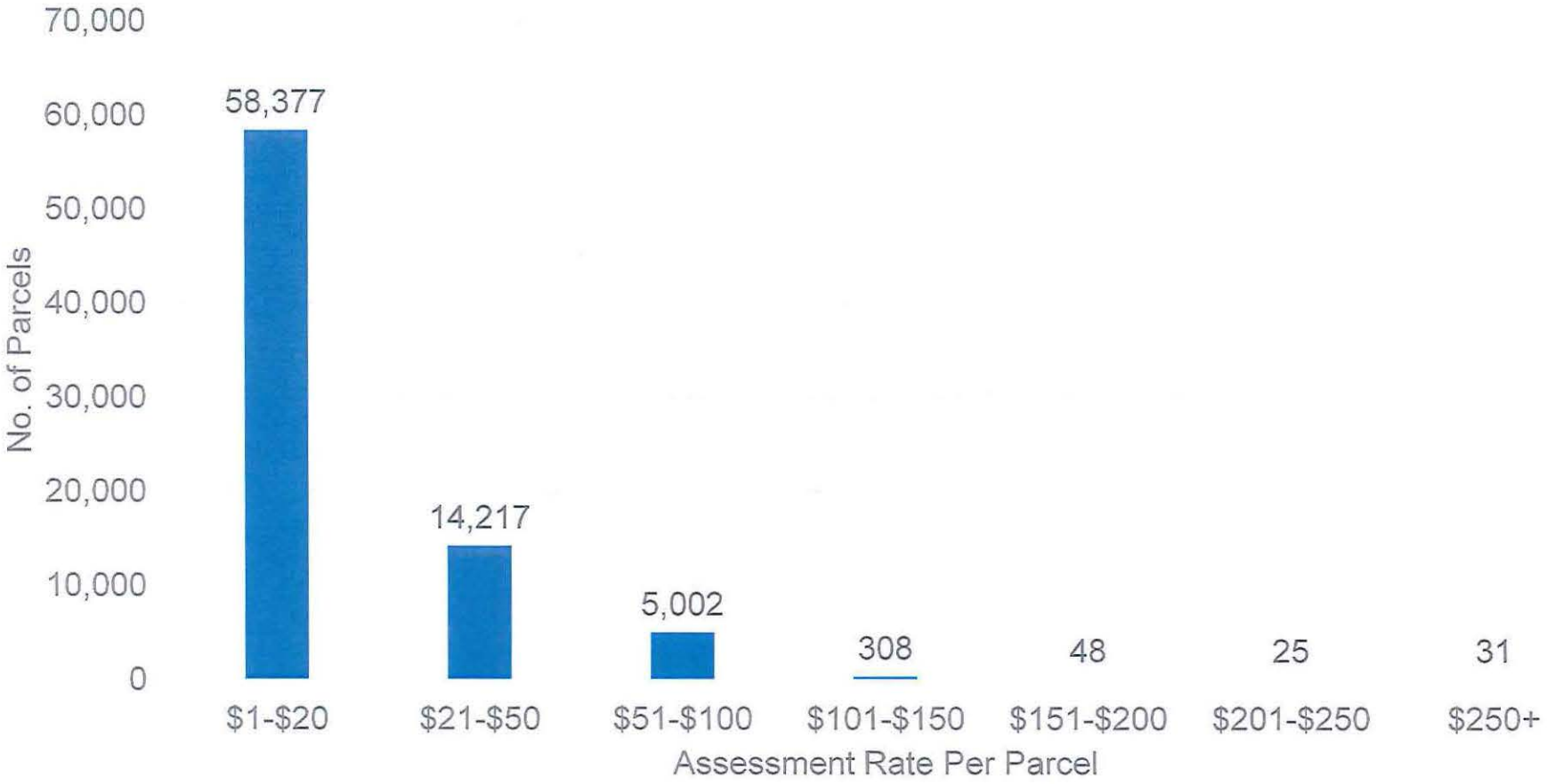
All Land Uses / All Parcels



SAN JOAQUIN COUNTY

Proposed Benefit Assessment – Rate Distribution

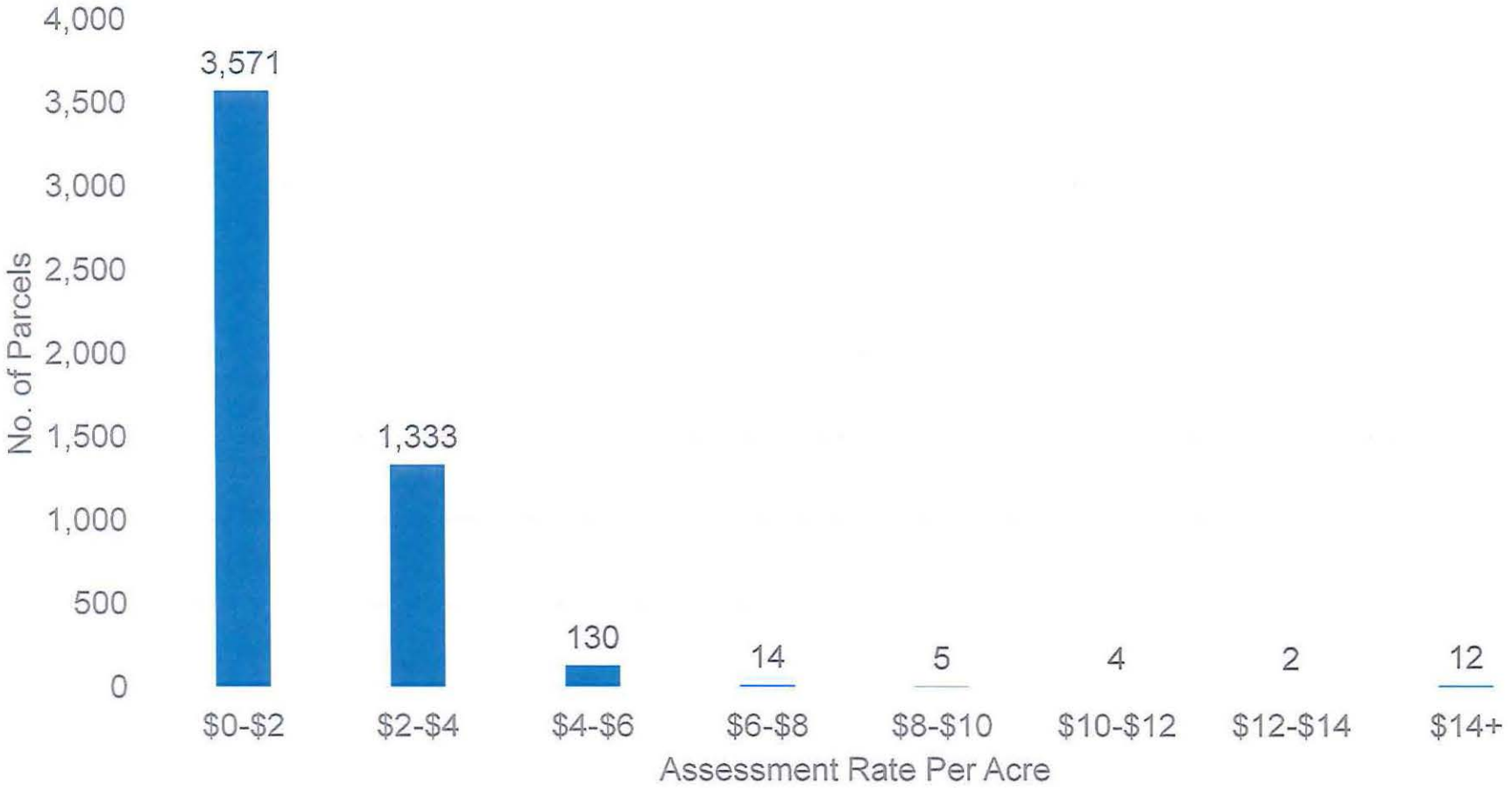
Single Family Residential Parcels



SAN JOAQUIN COUNTY

Proposed Benefit Assessment – Rate Distribution

Agricultural Uses - Rate per Acre



SAN JOAQUIN COUNTY

Assessment District Formation Process

- **Process starts with County BOS adoption of a Resolution of Intention (ROI) on September 10, 2019**
- **ROI does the following:**
  - Approves the boundary map of proposed assessment district
  - Preliminarily approves the Engineer's Report
    - Upon adoption of the ROI – the current Public Review Draft Engineer's Report will be the "Preliminary Engineer's Report"
  - Sets the date / time / location of a Public Hearing not less than 45 days after the mailing of notices and ballots
    - Proposed date: November 19, 2019 at the Regular Meeting of the Board of Supervisors
  - Directs the mailing of Notices of the Hearing and Ballots to all record owners of property subject to the proposed assessment

Assessment District Formation Process

- **Proposition 218 Procedures**
  - Resolution approving Proposition 218 Procedures covering:
    - Noticing (mailed, posted, published), balloting proceeding process, ballot tabulation, hearing process, and other topics requiring clarification and policy input
- **Public Outreach**
  - Prior to and during the balloting period:
    - Direct mail (newsletter and postcard)
    - Targeted social media-based outreach
    - Public Workshops (6)
    - Small group meetings/presentations
    - Hotline
    - Website/Assessment look up tool

Assessment District Formation Process

- **Balloting Proceeding Process**
  - Ballot package will be mailed to property owners.
  - Package will include ballot, ballot information guide, and postage paid security envelope for return
  - Ballot will identify the parcel(s) and the proposed assessment(s)
  - To be considered valid, ballot returns must have:
    - Answer to ballot question ("Yes" or "No")
    - Signature of property owner of record, or authorized representative
    - Must be returned and received by the District prior to the close of public hearing.
    - Ballots can be delivered by hand but must be enclosed in the security envelope.

Assessment District Formation Process

- **Public Hearing / Tabulation**
  - Concludes public outreach and balloting process.
  - Only returned valid ballots (marked "Yes" or "No" and signed) will be tabulated. Votes will be weighted in proportion to the financial obligation of the parcel(s) indicated.
  - Tabulation will take place (likely the day following the hearing) at a location accessible to the public during business hour until complete.
  - If the "Yes" votes outweigh the "No" votes, then the District can proceed with the assessment district formation and levy process, otherwise the process stops.
- **Formation**
  - The District would be formed by Resolution of the District and assessments would commence being levied in FY 2020/21

Schedule

Advisory Water Commission Presentation (Request Recommendation to BOS)	July 17
SJAFCA Board Informational Briefing	July 18
BOS Meeting (Approval of Preliminary ER, Set Public Hearing, Call for Balloting)	September 10
Outreach / Ballot Production & Mailing	September 11 – October 4
Outreach / Balloting Period	October 4 – November 19
BOS Public Hearing / Call for Tabulation	November 19
Ballot Tabulation	November 19 - 26
Report to BOS / Potential Action	December 10

Questions?

ATTACHMENT
III. A.2

San Joaquin County Flood Control and Water Conservation District

Flood Conveyance & Levee Maintenance Assessment District

PUBLIC REVIEW
DRAFT ENGINEER'S REPORT

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
San Joaquin County
Working for YOU

San Joaquin County Flood Control & Water Conservation District

Date: June 28, 2019

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1. INTRODUCTION

Background

The San Joaquin County Flood Control and Water Conservation District (SJCFCWCD) was formed in 1956 to construct, operate, maintain and plan flood control, water supply, drainage, and groundwater recharge projects. On December 19, 1961, the San Joaquin County Board of Supervisors created Flood Control Zone No. 9 (Zone 9) to provide for maintenance of existing channels, levees and associated structures. SJCFCWCD Zone 9 currently maintains 119 miles of "project" channels and 112 miles of "project" levees in accordance with agreements with the U.S. Army Corps of Engineers (USACE) and the California Department of Water Resources (DWR). Also, Zone 9 contains approximately 152 miles of non-project channels, and 3 miles of non-project levees which SJCFCWCD maintains as resources allow. Zone 9 is currently funded by a combination of property assessments and a small allocation of property taxes. The property assessments that currently provide funding include the Zone 9 Flood Control Benefit Assessment established in 1988 and an assessment levied by the San Joaquin Area Flood Control Agency (SJAFCA) established in 1996.

SJAFCA was formed as a Joint Powers Authority (JPA) in 1995 between the City of Stockton, San Joaquin County, and SJCFCWCD with the goal of restoring a 100-Year level of flood protection to the greater Stockton metropolitan area. In February 1995 the Federal Emergency Management Agency (FEMA) had issued preliminary Flood Insurance Rate Maps (FIRMs) which placed the majority of the greater Stockton metropolitan area within a Special Flood Hazard Area (SFHA). To prevent the SFHA designation from becoming effective, the JPA parties recognized that a coordinated regional effort was needed. SJAFCA was formed to plan, design and construct a suite of projects which became known collectively as the Flood Protection Restoration Project (FPRP). The FPRP consists of flood wall and levee improvements along 40 miles of existing levees, 12 miles of new levees, modifications to 24 bridges, and the construction of two major detention basins and pump station. To fund the construction of the FPRP as well as to provide for its long-term operation and maintenance, SJAFCA formed an assessment district (AD 96-1) in 1996. The completed FPRP is operated and maintained by SJCFCWCD on behalf of SJAFCA using funds generated by AD 96-1.

Due to changes in State and Federal policies after significant flood damage in hurricanes Katrina, Sandy, and other major storms, State and Federal levee maintenance requirements have become more stringent. To keep pace with these requirements, more demands have been placed upon levee maintenance efforts, which has in turn resulted in increased operations and maintenance costs. The current funding streams for Zone 9 levee and channel maintenance described above have not been sufficient to provide for increased maintenance efforts, and both SJAFCA and Zone 9 have relied upon their reserve funds to maintain the project levees and channels. Further, the non-project channels and levees are receiving very little maintenance, the maintenance backlog increases every year, and there are insufficient reserves to support repair, rehabilitation, or replacement of the facilities. In addition, support from SJAFCA is needed by SJCFCWCD to ensure that obligations associated with the FPRP are properly complied with and flood protection levels are maintained from a regulatory perspective consistent with the increasingly stringent requirements. To address these needs, SJAFCA and SJCFCWCD jointly investigated a strategy for generating additional revenue. The result of this coordinated effort is the proposed assessment described further within this Engineer's Report.

Purpose of Engineer's Report

This Engineer's Report describes, in detail, the methodology for levying an assessment upon parcels that receive special benefit from the Flood Conveyance & Levee Maintenance (Flood CALM) services provided by SJCFCWCD. As further described within this report, the assessment is intended to, in combination with the Zone 9 Flood Control Benefit Assessment and SJAFCA's AD 96-1 Assessment, provide SJCFCWCD with sufficient funding to provide the annual O&M services necessary to maintain the levee and channel systems, as well as establish a reserve to support routine repairs, rehabilitation, and replacement of the infrastructure.

Report Organization

This report is divided into six sections plus sections of Tables and Figures as well as four appendices, all described further below.

1. Introduction - Provides the background and purpose of this Engineer's Report.

2. Authority and Process - Outlines the authorization and process for imposing the proposed special assessment.

3. Proposed Services and Funding Plan - Describes the funding plan for Flood Conveyance and Levee Maintenance services.

4. Assessment Methodology - Details the methodology for levying an assessment that is proportional to the special benefits received by each parcel assessed.

5. Assessment Administration - Describes how the assessment would be administered on an annual basis.

6. Conclusions - Provides the special benefit findings and certification by the Assessment Engineer.

All Tables and Figures referenced in the report are included after Section 6.

Appendix A provides the list of the County Assessor's use codes and identifies the assignment of Land Use Categories for use in the assessment methodology.

Appendix B provides a technical memorandum prepared by PBI that details the methodology for the analysis for flood plain modeling and runoff.

Appendix C provides a technical memorandum prepared by PBI that addresses the methodology used to determine equivalency factors for channel maintenance.

Appendix D provides the list of the parcels with reference to their assessor's parcel subject to the Flood CALM assessment as well as a schedule of the proposed assessments for FY 2019/20 (the initial maximum annual assessment roll for assessment balloting purposes).

2. AUTHORITY AND PROCESS

The Flood Conveyance & Levee Maintenance Assessment (Flood CALM or Proposed Assessment) would be imposed by SJCFCWCD pursuant to the authority of Government Code §54703 – 54719, the Benefit Assessment Act of 1982 (1982 Act), and consistent with the requirements of Article XIIID of the California Constitution[1] (Proposition 218), Government Code §53750 et. seq. also known as the Proposition 218 Omnibus Implementation Act, and San Joaquin County Ordinance Code Section F-3033.5. Specifically, Government Code §54710(a) of the 1982 Act authorizes SJCFCWCD to levy an assessment to finance the maintenance and operation costs for levees and conveyance services. Furthermore, under Government Code §54710.5, the assessment may include the cost of installation and improvement of the facilities providing the levee and conveyance services. As further detailed in **Table 1** (Page 22), the Proposed Assessment will fund a portion of the annual cost of levee operations and maintenance, and the annual cost of channel maintenance, as well as create a reserve for routine repairs, rehabilitation, and replacement of the levee and channel facilities

Under Government Code §54711, the assessment must meet the following requirements:

1. The amount of the assessment imposed on any parcel must be related to the benefit received by the parcel;
2. The aggregate amount of the assessment cannot exceed the annual cost of providing the service; and
3. The revenue derived from the assessment must only be used for the services identified as the basis for assessment.

In addition, all special benefit assessments must also comply with Proposition 218 and the Proposition 218 Omnibus Implementation Act. These requirements outline the process for imposing the Assessment, including the requirement that this Engineer's Report document the special benefits conferred by the service provided, the process for imposing the Assessment, and property owner approval through a balloting process.

This Engineer's Report has been prepared to:

1. Contain the information required pursuant to Government Code §54716(a), including;
    a. a description of the services proposed to be financed through the revenue derived from the Assessment;
    b. a description of each lot or parcel of property to be subject to the Assessment;
    c. the amount of the Proposed Assessment for each lot or parcel;
    d. the basis of the Assessment; and,
    e. the schedule of the Assessment;
2. Determine the special benefits received from the services provided by SJCFCWCD by benefiting properties; and,

[1] Article XIIID of the California Constitution is the portion of the California constitution added by Proposition 218 that addresses the requirements of benefit assessments and is applicable here.

3. Assign a method of apportioning the Proposed Assessment to benefiting parcels.

Following submittal of this report to the San Joaquin County Board of Supervisors (Board) acting as the governing body of the SJCFCWCD for preliminary approval, the Board may, by resolution, call for an assessment ballot proceeding and public hearing on the establishment of the Proposed Assessment.

If the Board approves such a resolution, the Public Works Department will initiate the notice, protest, and hearing procedure required by Government Code §54716 and Article XIIID. A notice and assessment ballot will be mailed to property owners within the Proposed Assessment boundary. Such notice will include a description of the services to be funded by the Proposed Assessment, the total Proposed Assessment amount and Proposed Assessment amount for each parcel owned, the duration of the Assessment, an explanation of the method of voting on the Assessment, and the name and telephone number of the person designated by the Board to answer inquiries regarding the Proposed Assessment and protest hearing process. Each notice will also specify the date, time, and place of the public hearing and a summary of the ballot return procedures. Finally, each notice will include a ballot upon which the property owner can mark his or her approval or disapproval of the Proposed Assessment, as well as affix his or her signature, and a postage prepaid security envelope in which to return the ballot.

The balloting and notice period will extend for a minimum of 45 days. On the last day of the balloting period, the public hearing will be held for the purpose of receiving public testimony regarding the Proposed Assessment. At the public hearing, property owners will have the opportunity to provide testimony to the Board regarding the Proposed Assessment. Property owners will have the opportunity to submit their ballots at the public hearing, however, in order to be included within the tabulation, all ballots must be submitted prior to hearing's close. At the public hearing, and at any time prior to it, property owners may also revise previously submitted ballots.

If the votes received in favor of the Assessment, weighted by the proportional financial obligation of the properties for which the ballots are submitted, outweigh the votes received opposing the Assessment, then the Board may continue with the process of imposing the Proposed Assessment and its future levy. If the assessments are so confirmed and approved by the Board, the Assessment roll will be submitted in future years to the San Joaquin County Auditor Controller for inclusion on the secured property tax rolls pursuant to the procedures of San Joaquin County Ordinance Code §F-3030 – F-3038. The SJCFCWCD may directly bill the property owner for the Assessment pursuant to Government Code §54718. As outlined in Government Code §53739, the Board may levy the Assessment in future years without conducting a new ballot proceeding so long as the Assessment is within the stated inflation-adjusted Assessment Rate authorized by the original balloting proceeding.

3. PROPOSED SERVICES AND FUNDING PLAN

Services Funded by the Proposed Assessment

The services to be funded by the Proposed Assessment within the assessment boundaries include: (1) all levee operation and maintenance services that are required to ensure that the design level of flood protection is maintained over time for Project levees maintained by SJCFCWCD (Levee O&M); and (2) all channel operation and maintenance activities associated with the conveyance and discharge of runoff water through Project channels maintained by SJCFCWCD (Flood Conveyance). "Project" levees are those facilities that are part of the State Plan of Flood Control as defined by 2010 State Plan of Flood Control Descriptive Document.[2] "Project" channels are those channels shown on **Figure 4** within **Appendix C**.[3]

The specific Levee O&M Service activities may include, but are not limited to, levee inspections and evaluations, removal of debris that restricts flow or damages the system, vegetation removal and control, rodent control, levee patrols during warning and flood stages, resurfacing of levee roads when required to keep them passable for patrolling and maintenance purposes, replacing erosion protection materials as needed, flood fighting, and repair of the embankment to ensure levee integrity. In addition, Levee O&M services also includes all activities associated with maintaining the current level of flood protection received by benefiting properties. These activities include compliance with any existing permits and obtaining new permits, enforcing permitting or removal of any encroachments on the levee systems, coordination with State and Federal floodplain regulators and policy makers, as well as coordination and reporting activities that ensure compliance with FEMA, DWR and USACE standards. SJCFCWCD may utilize the services of SJAFCA or other contractors to support these additional Levee O&M services.

The Flood Conveyance Services may include, but are not limited to, channel maintenance, pump station operations and maintenance, pipes, gates, control structures, and detention basin maintenance for facilities maintained by SJCFCWCD. In addition to the on-going performance of these services, the proposed assessment will also provide adequate reserves to support routine repair, rehabilitation, and replacement of facilities in order to ensure an adequate level of service over the duration of the Assessment. Collectively, these services are herein referred to as "District O&M Services".

Annual Budget for Services

The annual budget for District O&M Services have been estimated by the County's Public Works Department, in coordination with SJAFCA, and provided to the Assessment Engineer. The budget represents the current expectation of costs based partially on historical expenses and partially on anticipated changes over the life of the assessment. It should be noted that this budget was developed for the purpose of determining the annual revenue required for this proposed assessment based on the increased costs the District has experienced associated with performing O&M of Project levees and channels. Future annual budgets approved by the Board may vary from year to year according to actual anticipated expenses and revenues.

[2] State Plan of Flood Control Descriptive Document, Central Valley Flood Management Planning Program, November 2010.

[3] Reference ***Assessment Boundary*** with ***Section 4. Assessment Methodology***.

Table 1 (Page 22) provides a summary of the estimated Fiscal Year (FY) 2020/21 budget. Again, this budget takes into consideration the required level of O&M services associated with Project levees and channels that are currently unfunded with the available revenues described further below.

The required budget totals $6,262,000 for the following services: Operations and Maintenance, Ongoing Engineering support, State & Federal Coordination, Administration, Auditing & Compliance, and the Legal & Insurance burden associated with all services. The existing revenues available to support this projected budget total $4,470,000 and come from the following funding sources: The current Zone 9 Flood Control Benefit Assessment, Ad Valorem Property Taxes received by the District for Zone 9, and SJAFCA's AD 96-1 Assessment. The net difference, or shortfall, between the required budget and these other offsetting revenues totals $1,792,000. This shortfall is associated with the additional costs of providing the required level of District O&M Services for Project levees and channels.

The current Zone 9 Flood Control Benefit Assessment is utilized by the District to fund Non-Project and Project Levee and Channel O&M services within Zone 9. Ad Valorem Property Taxes, which represent a portion of the County's base 1% of net assessed value property taxes apportioned to Zone 9 of District, are also used to fund Non-Project and Project levee and channel O&M services. Finally, SJAFCA's AD 96-1 is an existing assessment for parcels with SJAFCA's service area to fund O&M the FPRP. Revenue from AD 96-1 collected by SJAFCA is then utilized to contract for services provided by the District on behalf of SJAFCA for the operations and maintenance of those Project levees improved as part of the FPRP.

The Proposed Assessment will be utilized to fund the unfunded increase in cost associated with Project Levee O&M and Flood Conveyance services. The proposed District budget reflects a comprehensive Budget for the operations and maintenance of Project and Non-Project related levees and channels, however, the increase in costs is solely associated with the increased cost of funding District O&M Services of Project channels and levees. The assessment revenues and property taxes described above are fully expended on Project channels and levees and emergency services for Non-Project facilities. Even with full expenditure of revenue on Project facilities, including depletion of reserve funding, essential maintenance for Project and non-Project facilities is currently being deferred until additional funding available. The Proposed Assessment is for the increased cost of District O&M Services performed on Project channel and levees which is represented by the difference between the budget for all services performed in Zone 9 by the District and available funding sources which is $1,792,000 ($6,262,000 - $4,470,000).

4. ASSESSMENT METHODOLOGY

General Discussion

Requirements of Proposition 218

To levy an assessment for a property related service such as flood control, Proposition 218 requires the local agency to:

- Separate the general benefits from the special benefits conferred on a parcel;
- Identify the parcels that have special benefits conferred on them by the facility and/or service;
- Calculate the proportionate special benefit for each parcel in relation to the entirety of the capital and/or O&M expenses being funded; and
- Ensure the assessment does not exceed the reasonable cost of the proportionate special benefit conferred on each parcel.

Special Benefits vs. General Benefits

Proposition 218 requires any local agency proposing to increase or impose a special assessment to "separate the general benefits from the special benefits conferred on a parcel." Cal. Const. art. XIIID §4. The rationale for separating special and general benefits is to ensure that property owners are not charged a special benefit assessment in order to pay for general benefits provided to the general public or to property outside the assessment district. Thus, a local agency carrying out a project that provides both special and general benefits may levy an assessment to pay for the special benefits but must acquire separate funding to pay for the general benefits.[4]

A special benefit is a particular and distinct benefit over and above the general benefits conferred on real property located in the District or to the public at large. The total cost of the services must be apportioned among the properties being assessed based on the proportionate special benefit the properties will receive.

Because flood control and conveyance work have an obvious indirect relationship to the provision of general benefits and may, upon first blush, appear to be general benefits, the issue of general benefits merits further discussion. For example, the facilities to be funded by the assessment will protect parks that are used by people regardless of whether they own property within the floodplain or not. But this indirect relationship does not mean that these activities will themselves provide any general benefits. Rather, they will provide special benefits to all parcels within the floodplain, including special benefits to public parcels (such as parks) that are themselves used in the provision of general benefits.

More to the point, the public at large will be paying for the special benefits provided to this public property, and specially benefited property owners' assessments will not be used to subsidize general benefits provided to the public at large or to property outside the district. All property that is specially benefited will be assessed, including schools, parks and other parcels used in the provision of general benefits. Assessing agencies are required by law to assess and levy the assessment on all specially benefited property, including

[4] *Silicon Valley Taxpayers' Assn., Inc. v. Santa Clara County Open Space Authority*, (2008) 44 Cal. 4th 431, 450.

publicly owned property, within the assessment district.[5] Thus, the general public will pay for the provision of flood control and conveyance services because the assessed public agencies within the assessment district will use general taxes or public revenue to pay their assessments.

In this instance, the District O&M Services provide a special benefit only to those properties located within the boundaries by virtue of preventing flood waters due to lack of drainage or an uncontrolled flood from water collecting on or flowing over the parcel and causing damages as a result of inundation. Specifically, all parcels within the boundaries of this assessment district receive a special benefit from these services.

The special benefit provided to each parcel varies based on the relative avoided damage from flooding and the relative channel maintenance required to convey drainage from the parcel. The relative avoided flood damages are based on an uncontrolled flood resulting from a breach along the maintained levee system. The avoided flood damages are a function of parcel size, land use and the depth of flooding from each breach scenario, and the length of levee represented by each breach. The relative channel maintenance is proportional to the relative flood conveyance and runoff for the parcel based on its size and land use, and the length and size of channel required to convey the runoff through the District's system.

Avoided flood damages to a parcel and conveyance service are a special benefit and not a general benefit. As noted above, special benefits are those "particular and distinct over and above general benefits conferred on real property located in the district or to the public at large." Cal. Const. art. XIIID §2(i). Because the flood control services and conveyance facilities protect a particular, identifiable set of parcels (including any appurtenant facilities or improvements) from damage due to inundation, the benefits are provided directly to those parcels, and to none other. By contrast, general benefits provided to the public at large are discussed in terms of general enhanced property values, provision of general public services such as police and fire protection, and recreational opportunities that are available to people regardless of the location of their property. *See e.g.*, Cal. Const. art. XIIID §§2(i), 6(2)(b)(5); *Silicon Valley Taxpayers*, 44 Cal. 4th 431. 450–56.

Assessment Boundary

The proposed assessment boundary encompasses all properties that receive a special benefit from the District's O&M Services. Properties receiving special benefit from maintenance of Project levees were identified in the flood breach analyses prepared by Peterson Brustad, Inc. (PBI), a hydraulic engineering firm retained by SJCFCWCD. Properties receiving special benefit from maintenance of Project channels were identified through an evaluation of the SJCFCWCD watershed in the analysis of channel maintenance benefits also prepared by PBI. These two analyses are incorporated into this Engineer's Report by reference and attached as Appendices to this report (**Appendix B** and **Appendix C** respectively). The majority of properties that received special benefit from the District's Levee O&M and Flood Conveyance Services are located in San Joaquin County. However, some of the properties receiving special benefit are located in Calaveras and Stanislaus Counties, which are outside SJCFCWCD's authority to levy an assessment. While special benefits are apportioned to these properties, the boundary of the proposed assessment is limited to the jurisdictional

[5] Reference Cal. Const. art. XIIID §4(a) with respect to the requirement to assess and *Manteca Unified School District v. Reclamation District No. 17 (2017) 10 Cal.App.5th 730* with respect to the requirement to levy.

boundary of the District which is the same as the boundary of San Joaquin County. A map of the Proposed Assessment boundary is shown in **Figure 1** (Page 38).

Assessment Apportionment Methodology

The methodology for apportioning the Proposed Assessment to each parcel in the District is based first on quantifying the special benefits received, in terms of benefit units, by each parcel in the District from the District's O&M Services and then second, determining each parcels proportionate share of total special benefits received, again in terms of benefits units, and finally allocating the Proposed Assessment, in terms of dollars to each parcel based upon its proportionate share of total benefit units. Through this approach, each parcel's share of the total Proposed Assessment would be equivalent to its proportionate share of special benefits received from the Service, thus meeting the requirement of Proposition 218.

As described above, the District's O&M Services consist of Levee O&M and Flood Conveyance. The special benefit conveyed to a parcel from Levee O&M Services (in terms of Levee Benefit Units) is based on the flood damage reduction received by the parcel due to the decreased likelihood of deep flooding caused by a levee failure. The special benefit conveyed to a parcel from Flood Conveyance (in terms of Conveyance Benefit Units) is based on the length and type of channel required to convey the runoff through the District's system, and the relative quantity of runoff contributed to the system.

Based on information provided by the County's Public Works Department which included an analysis of operations and maintenance expenditures based on activity types over a period of 5-years, the level of effort required to perform Levee O&M Services versus Flood Conveyance Services is, on average, a ratio of 3:1. While the level of effort varies from year to year, it is reasonable to expect that based on the long term analysis of past activities, the relative level of effort between Levee O&M activities versus Flood Conveyance activities will be similar into the future. Both services are required to control and convey floodwater through the system. Both services are required to maintain to a regulatory standard for federal assistance under Public Law 84-99. Therefore, the engineer has determined that based on the relative effort between these services, the services provide a 3:1 ratio of special benefits to parcels benefiting from Levee O&M and Flood Conveyance services.

The methodology for calculating Levee O&M Benefit Units for each parcel utilizes the following property characteristics:

1. The size (acreage) of each parcel;
2. The Land Use Category assigned to each parcel;
3. The average structure size (square footage) per acre for each Land Use Category;
4. The Relative Land Damage Rate per acre;
5. The Structure Damage Rate per square foot;
6. The depth of flooding from each breach scenario affecting the parcel; and
7. Length of levee represented by each breach scenario.

The methodology for calculating Conveyance Benefit Unit for each parcel utilizes the following property characteristics:

1. The size (acreage) of each parcel.
2. The Land Use Category assigned to each parcel;
3. The Relative Runoff Factor assigned to each Land Use Category;
4. The Length of each type of channel downstream of the parcel; and
5. The Relative Maintenance Factor assigned to each type of channel.

As described above, the special benefit ratio associated with Levee O&M Services and Flood Conveyance Services is 3:1. However, the rates and factors for calculating LBU's and CBU's are not the same, which results in a large order of magnitude difference between the quantity of LBU's versus CBU's. Therefore, a Benefit Equalization Factor is utilized to ensure that a 3:1 ratio of LBU's versus CBU's is maintained when calculating the Total Special Benefits units provided by Levee O&M and Flood Conveyance Services.

The assessment is apportioned to each property based on the following formula:

$$TBU = LBU \times BEF + CBU$$

Where:

TBU = Total Benefit Units

LBU = Levee O&M Benefit Units

CBU = Conveyance Benefit Units

BEF = Benefit Equalization Factor

Hydraulic Analyses Performed to Support the Assessment Methodology

Levee Breach Analysis

In order to determine the avoided flood damages, PBI utilized an existing levee breach analysis that evaluated 89 different breach scenarios along the SJCFCWD Project levees.[6] The resulting floodplain from each breach was overlaid on the San Joaquin County Geographic Information System (GIS) parcel shapefile to determine the average flood depth and area of flooding for each individual parcel for each breach scenario. The resulting flood depth was used as one of the inputs to the USACE Depth-Damage functions to calculate avoided flood damage. PBI also identified the length of levee represented by each breach in order to apportion avoided flood damages across the entire levee system.

Accounting for Uncertainty in the Breach Analysis Results

In order to account for the uncertainty associated with the hydraulic modeling assumptions and the accuracy of underlying LiDAR data used to generate the floodplains from each breach scenario, all flood depths were rounded down to the nearest foot. In addition, to account for the affects that any variation within an individual parcel would have on shallow flooding, avoided flood damages were excluded for parcels with a rounded flood depth of zero feet.

[6] Reference Appendix B: Flood CALM Assessment District Floodplain Analysis, June 26, 2019

The hydraulic model used a standardized approach of calculating the overland conveyance of the floodwaters from the levee breach on a 250-foot square (1.4 acres) grid pattern and reporting the average depth for each grid block. Based on this grid block size, multiple parcels may reside within a single grid block, or a single parcel may span multiple grid blocks. Therefore, for parcels that are partially flooded along the boundary of the floodplain from the levee breach, the level of accuracy for the area of flooding for these parcels is uncertain. In order to account for this uncertainty, flood damages were also excluded for parcels along the fringe of the floodplain that were less than 90% flooded.

Levee Protection Zone

All parcels within the Levee Protection Zone (LPZ) shown in **Figure 2** (Page 39), receive benefit from maintenance of the Project levees. Therefore, a minimum flood damage benefit was determined for all parcels and was applied to parcels that are not flooded by any of the levee breach scenarios. This minimum benefit calculation is further described on Page 13.

Flood Conveyance ("Rolling Ball") Analysis

The relative level of effort required to maintain Project channels utilized to convey floodwater away from a parcel through the system is one of the factors used to assess and apportion special benefit. In order to determine the relative level of effort for channel maintenance of the various Project channels, PBI performed an analysis to determine the length of Project channels downstream of each parcel, PBI evaluated each sub-basin within the SJCFCWCD watershed to determine the most direct route that flood waters from a parcel (i.e. the direct path a ball would roll through the channel system e.g. a Rolling Ball Analysis)[7]. All parcels within each sub-basin we assigned the same direct route through the channel system.

As the direct routes from each sub-basin converge, the size of the channel increases from smaller tributaries to the major channels in the system. PBI then evaluated each segment of channel to determine the approximate capacity and whether levees were present. Three categories of channel ("Major," "Moderate" and "Minor") were created based on the capacity of the channel. As a result of the Rolling Ball Analysis, each parcel is associated with the total length of channel for each capacity category and presence of levees.

Property Characteristics

The following property characteristics were developed for apportioning benefit. A summary of the property characteristics data is provided in **Table 2** (Page 23).

Land Use Categories

Multiple land use codes are used by the San Joaquin County Assessor to categorize the properties within the boundaries. Each land use code was evaluated and assigned to a generalized Land Use Category (e.g.: Agricultural, Single-Family Residential, Commercial, etc.) for the purpose of identifying characteristics of each category for use in apportioning special benefit (**Appendix A**). A random sample of parcels for each County land use code was analyzed by reviewing aerial photographs to ensure that it had been assigned to the appropriate Land Use Category. The Land Use Categories are generally described as follows:

[7] Reference Appendix C: Analysis of Flood CALM Channel Maintenance Benefits, June 26, 2019

Agricultural land was characterized as large productive or unproductive land outside the urban area. No differentiation was made to differentiate between the crop types or use for livestock grazing.

Blended parcels are large parcels with multiple land uses present. The characteristics of these parcels are typically unique and require dedicated apportionment factors that are weighted by the portion (percent) of the parcel associated with each land use. An example would be a single large lot zoned as commercial that is half developed for a commercial use and the other half is vacant.

Commercial is characterized by properties with office, retail or public service buildings. This Land Use Category includes hotels, shopping centers, restaurants, offices, hospitals, etc.

Industrial is characterized by manufacturing, storage and processing facilities. This Land Use Category includes warehouses, manufacturing, processing, distribution, and public utilities.

Mobile Home Park is exclusively properties designed specifically for multiple mobile home structures. This category also includes individual parcels with Mobile Home Residential structures.

Multi-Family Residential is characterized as four or more dwelling units on a parcel. This Land Use Category includes apartments, condominiums, and townhouses.

Open Space is characterized by properties with limited hardscape, without structures, that have been developed for their ultimate use. This Land Use Category includes parks, sports fields, bike paths, common areas, etc.

Open Space Developed is characterized by properties that do not have a structure, however, are generally ready to be built on. This Land Use Category includes parcels in developed areas that have been prepared for construction, parcels that are generically described as "vacant", and parcels that are entirely used as a parking lot.

Rural Residential are large lots with a Single-Family Residential structure outside the urban areas with limited amount of hardscape.

School properties are characterized as educational campuses, but do not include conversion of other land use categories for education activities (i.e. a commercial parcel utilized by a trade school). School properties can be public or private.

Single-Family Residential properties are characterized by three or fewer single-family dwelling structures on a parcel. This Land Use Category includes land with duplex and triplex buildings as they generally have the same physical characteristics as other single-family residences.

Parcel Size

The size of the parcel is used to appropriately apportion the special benefit from both Levee O&M and Flood Conveyance Services. Parcel data was obtained from San Joaquin County Assessor's data acquired through ParcelQuest. Parcel data was also obtained from the San Joaquin County Community Development

Department GIS group shapefiles. Where any significant discrepancy existed between the two sources, satellite imagery was used to measure and identify the more reliable source.

Average Structure Size per Land Use Type

Structure sizes were obtained from San Joaquin County Assessor's data acquired through ParcelQuest. The average structure size was calculated by summing the total square footage from all parcels for each land use and dividing by the total acres of all parcels with structures for each land use. **Table 3** (Page 24) summarizes the number of parcels, total parcel acreage and total structure square-footage of the parcels used to determine the average structure size associated with each Land Use Category.

Levee O&M Benefit Units

Levee O&M Benefit Units (LBU) are equal to the avoided flood damage to a parcel as a result of the Levee O&M Services provided by SJCFCWCD. For the purpose of this assessment, flood damages were quantified for land damages and structure damages based on the depth from each of the breach scenarios.

The LBU for each property is calculated using the following formula:

LBU = Total [Weighted Flood Damage] for all Breach Scenarios

Where, for each Breach Scenario:

Weighted Flood Damage = [Avoided Flood Damage] x [Representative Levee Length]

Avoided Flood Damage = [Levee Breach Damage]

Levee Breach Damage = [Land Damage] + [Structure Damage]

Land Damage = [Parcel Size] x [Relative Land Damage Rate per Acre$_{\text{by land use}}$]

Structure Damage = [Average Structure Size] x [Parcel Size] x [Structure Damage Rate$_{\text{by structure type}}$]

Minimum LBU within LPZ

For parcels within the LPZ shown in **Figure 2** (Page 39) that are not flooded by any of the levee breach scenarios, the LBU is calculated as follows:

LBU = [1,000 ft of Levee] x [Parcel Size] x [Relative Land Damage Rate]

Relative Land Damage Rate per Acre

The Relative Land Damage Rate per Acre represents the relative damage to site improvements (e.g. landscaping, utilities, etc.) that occurs as a result of inundation and deposition of sediment carried in the floodwater. The Relative Land Damage Rate per Acre was determined by assigning a Relative Land Value per Acre to each land use category and applying a 10% damage factor to the Relative Land Value per Acre. **Table 4** (Page 25) summarizes the Relative Land Damage Rate for each Land Use Category.

Structure Damage Rate

The Structure Damage Rate is calculated based on the methodology used in the US Army Corps of Engineers Flood Damage Analysis (FDA) program. The FDA program assigns a Structure Replacement Value according to type of structure and estimates the percent structure damage based on the depth of flooding. **Table 5** (Page 26) summarizes the Structure Replacement Value and the Depth-Damage function for each Land Use Category.

Flood Conveyance Benefit Units

Flood Conveyance Benefit Units (CBU) represent the relative level of effort required to maintain the Project channel(s) downstream of each parcel and the quantity of runoff contributed to the system by each parcel. It is important to note that not all parcels within the assessment boundary receive Flood Conveyance Benefit because they either do not flow into the maintained Project channels or their runoff is impounded upstream of the channel system. In addition, there are parcels located in Calaveras and Stanislaus Counties where runoff ultimately flows into the Project channel system. These parcels are apportioned Flood Conveyance Benefits even though a direct levy cannot be placed on these parcels to collect the assessment. This ensures that special benefits received by parcel outside the assessment boundaries are not made up by parcels within the assessment boundary. Funding for these special benefits received outside the assessment boundary are made up by SJCFCWCD from other funding sources. **Figure 1** (Page 38) shows the area receiving Flood Conveyance services within the assessment boundary.

The CBU for each parcel is calculated using the following formula:

CBU = [Total Relative Channel Maintenance] x [Relative Quantity of Floodwater Runoff]

For each Channel Maintenance Category assigned to a parcel:

Relative Channel Maintenance = [Length of Channel] x [Relative Maintenance Factor]

For each parcel:

Total Relative Channel Maintenance = Sum of the Relative Channel Maintenance for all categories.

Relative Quantity of Floodwater Runoff = [Runoff Coefficient$_{\text{by land use type}}$] x [Parcel Size]

Relative Maintenance Factor

The relative level of maintenance required to maintain each category of channel is a function of the width of maintained channel and whether levees are present. For each channel category analyzed in the Rolling Ball Analysis, a Relative Maintenance Factor was determined to represent the relative width of the maintained channel, channel accessibility and additional maintenance effort required for leveed channels. **Table 6** (Page 27) summarizes the relative Channel Maintenance Factors associated with each channel category.

Runoff Coefficient

To properly apportion benefit based on the relative quantity of runoff from each property, each Land Use Category was assigned a Runoff Coefficient to compare the relative quantity of runoff per acre between Land

Use Categories. The Runoff Coefficient is a function of the percent impervious cover over a parcel of a given land use type. Therefore, Land Use Categories with higher Runoff Coefficients (e.g., Commercial) receive a relatively greater benefit because a greater quantity of runoff is generated per acre than those with lower Runoff Coefficients (e.g., Open Space). **Table 7** (Page 28) summarizes the relative Runoff Coefficients assigned by the assessment engineer to each Land Use Category.

As previously described, a Blended Land Use Category was assigned to larger parcels over which multiple land uses were apparent. For these parcels, a unique Runoff Coefficient was calculated to reflect a weighted average Runoff Coefficient based on the area of each land use within the parcel.

For large properties greater than 40 acres, the quantity of runoff per acre significantly reduces due to natural retention and infiltration on the parcel. To account for this, the first 40 acres utilizes the Runoff Coefficient for the Land Use Category. The *remaining* acreage utilizes the Large Lot Runoff Coefficient.

Benefit Equalization Factor

As described above, the rates and factors for calculating the benefit associated with LBU's and CBU's are not the same, which results in a large order of magnitude difference between the quantity LBU's versus CBU's. Therefore, a Benefit Equalization Factor (BEF) is utilized to ensure that a 3:1 ratio of LBU's versus CBU's is maintained when calculating the Total Special Benefits units provided by Levee O&M and Flood Conveyance Services.

The Benefit Equalization Factor is a unitless multiplier calculated using the following equation:

$$\textbf{BEF} = \textbf{[Total CBU]} \div \textbf{[Total LBU]} \times \textbf{3}$$

The BEF is a constant factor for all parcels equal to $\mathbf{6.40 \times 10^{-9}}$.

The Total Benefit Units (TBU's) which, as noted previously is the sum of the LBU's and CBU's is shown on **Table 8** (Page 29). **Table 8** also summarizes the LBU's and CBU's by Land Use Category.

Special Benefit Assessment Calculation

To determine the proposed assessment for an individual parcel, the amount of Total Benefit Units (TBU) for the parcel is calculated and multiplied by the assessment rate per TBU. The proposed assessment rate per TBU is equal to the required annual budget (see **Table 1**) divided by the total quantity of TBU (reference **Table 9**, Page 30). All factors required to calculate each Parcel's TBU have been described above and can found in the provided tables and appendices. The proposed assessment rate per TBU is **$2.028** / TBU.

Example Parcel Assessment

Using the proposed parcel assessment equation and supporting CBU, LBU and BEF equations as well as parcel attributes including parcel size, average structure size, relative land damage rate per acre, structure damage rate per square foot, relative maintenance factor, relative runoff coefficient, and length of channel and finally the proposed assessment rate, an individual parcel's assessment can be calculated.

Assessments are rounded down to the closest multiple of $0.02 as required by the San Joaquin County Assessor's office for submission of the special assessment roll for collection on County Property Tax Bills.

The following list of steps are taken to calculate a parcel's assessment:

Step 1 – Determine the Parcel Size, Land Use, Breach Name, Representative Levee Length.

Step 2 – Using **Table 3**, determine the Average Structure Size.

Step 3 – Using **Table 4**, determine the Relative Land Damage Rate per Acre.

Step 4 – Using **Table 5**, Structure Damage Rate per Square Foot.

Step 5 – Calculate the Parcel **LBU** using **Equation 1.**

Step 6 – Using **Table 6**, determine the Relative Maintenance Factor.

Step 7 – Using **Table 7**, determine the Relative Runoff Coefficient.

Step 8 – Using **Appendix C**, determine the Length of Channel.

Step 9 – Calculate the Parcel **CBU** using **Equation 2.**

Step 10 – Calculate the Parcel **TBU** using **Equation 3.**

Step 11 – Calculate the parcel assessment using **Equation 4.**

Step 12 – Round down to the closest multiple of $0.02. Raise up to $2 if it is less than the minimum[8]

A detailed example parcel assessment calculation is included in **Table 12** (Page 33).

Summary of Assessments

A detailed listing by Assessor's parcel number of the assessments is included in **Appendix D.** The proposed assessments are summarized by Land Use Category in **Table 10** (Page 31).

Special Considerations

Public Parcels

Consistent with the requirements of Proposition 218, all publicly owned parcels are assessed proportionately based upon the special benefits they receive from services provided by the proposed assessment. That is, public parcels are treated the same as privately owned parcels for assessment calculation purposes. To calculate assessments for these parcels, a land use category was assigned to each public parcel based on its current use.

[8] Reference Minimum Assessment Amount described further on Page 21.

Multiple Use Parcels

A property that is determined to have multiple uses but is classified under a single use code by the San Joaquin County Assessor that is not consistent with the multiple uses may be eligible to have its assessment calculated as if it were two or more parcels ("sub-parcels") with varying structure and land uses types for the purpose of apportioning benefit. The assessments of the sub-parcels would then be combined to represent a single assessment for the purpose of assessment balloting, direct billing and/or submission of the roll to the San Joaquin County Auditor for collection on the secured property tax roll.

Minimum Assessment Amount

The minimum annual assessment will be $2.00 per parcel to reflect the cost to administer the Assessment Roll, which is within the limits of CA Water Code § 51335.5. All annual assessments calculated to be less than $2.00 will be raised to the $2.00 minimum. If the additional revenue collected by the District due to the minimum assessment exceeds the cost to administer the O&M Assessment Roll, the funds will be added to the reserve fund for the District's O&M Services.

Updating the Assessment Roll

Assessment recalculation trigger mechanisms checked on an annual basis accommodate changes within the District over time. These changes can result from the development activity such as recordation of subdivision maps, zoning changes, conditional use permits, and lot splits. Placement of a structure on an undeveloped parcel or other changes may trigger a recalculation of the assessment if there is a change in the land use category.

It is recognized that when compiling data for the tens of thousands of parcels within the assessment boundary, the data[9] used to derive individual parcel characteristics may not be accurate and may not precisely fit the intent of the Assessment Engineer thus leading to errors and/or circumstances that result in inaccurate assessment calculations. Where such circumstances are discovered, either by the persons administering the assessment district or by the owners of the properties affected, San Joaquin County staff shall review such circumstances and determine if corrections or adjustments are appropriate. Any such corrections or adjustments are to be consistent with the concept, intent, and parameters of the methodology for the assessment as set forth within this Engineer's Report. Unless such proposed changes are appealed to the San Joaquin County Department of Public Works, they will be incorporated into the Assessment Roll.

[9] The Assessment Engineer has utilized data compiled from the San Joaquin County Assessor to determine the individual property characteristics used as the basis for apportioning special benefit. While the data from the San Joaquin County Assessor is assumed to be accurate, its primary purpose is for use by the San Joaquin County Assessor and is subject to the Assessor's standards for accuracy and update. As a result, the information may be inaccurate and not reflect the actual property characteristics of every parcel.

5. ASSESSMENT ADMINISTRATION

Schedule for Collection

If property owners approve the proposed assessment, SJCFCWCD intends to commence collection of the assessments in FY 2020/21. The assessment would be collected annually on the secured property tax rolls of San Joaquin County as described further below under "Duration of the Assessment" (Page 19).

The annual administrative expenses of the District would also be funded through the annual levy of assessments. Ongoing administrative expenses would include the annual calculation and preparation of the assessment roll, the actual costs of collecting the annual assessments and the costs of responding to inquiries including the review and processing of any appeals.

Appeals of Assessments Levied to Property

Any property owner who believes his or her property should be reclassified and the assessment adjusted may file a written appeal with the San Joaquin County Director of Public Works. Any such appeal is limited to correction of an assessment during the then-current fiscal year and future years.

All appeals must include a statement of reasons why the property should be reclassified and may include supporting evidence. On the filing of any such appeal, the Director of Public Works will direct staff to promptly review the appeal and any information provided by the property owner and may investigate and assemble additional evidence necessary to evaluate the appeal. If the Director of Public Works finds that the assessment should be modified, the appropriate changes will be made to the assessment roll for the following fiscal year. Any such changes approved after the assessment roll has been filed with the County for collection, will not result in a refund of the current or any prior year's assessments paid before the appeal was filed unless so directed by the Director of Public Works.

Impact of Appeals

The majority of the data being used to generate the assessment rates for specific parcels comes from the San Joaquin County Assessor. Because the main purpose of the Assessor in compiling this data is not to support this and other Special Benefit Assessment efforts but rather to determine Assessed Value for the purpose of administering the County's Secured Tax Roll, the Assessment Engineer has worked to refine the Assessor's data so it properly reflects the conditions present in the physical benefit area. However, throughout the formation period (and indeed even after the formation of the assessment), data errors and discrepancies with the San Joaquin County Assessor data may surface and require modification of the assessment calculation for various parcels. Changes in the data without a corresponding change in the rates established by this report will, by definition, change the total amount of assessments levied and collected in any one year. For example, if the data assumes the existence of a house that has since been destroyed and not been reconstructed, once the database is corrected the rates will generate a smaller total assessment. On the other hand, if the data assumes an empty lot where a house has since been constructed, once the database is corrected the rates will generate a larger total assessment. Due to the database being constantly refined (either through internal review or an external appeal process), it is infeasible to fine-tune the rates between the Preliminary Engineer's Report and the Final Engineer's Report. In addition, because changes to the database will either increase or decrease the total amount assessed, it is presumed that these amounts will roughly offset each other.

Therefore, although minor changes to the database will continue to be made during the formation period, the rates proposed in this Report are not being fine-tuned, even though that will result in a total assessment which may be slightly less than or slightly more than the amount determined for the development of this report.

Duration of the Assessment

If approved by property owners in an assessment ballot proceeding conducted pursuant to Article XIIID Section 4 of the State Constitution and Government Code § 53750, *et. seq.*, and subsequently approved by the San Joaquin County Board of Supervisors acting as the Governing Board of the SJCFCWCD, the assessment can be levied annually commencing FY 2020/21. The Director of Public Works will establish the assessment rate each year and while the assessment is only effective for that year, the assessment may be continued each year without another ballot proceeding with approval of the San Joaquin County Board of Supervisors pursuant to the procedures outlined within Chapter 3 of the Flood Control Benefit Assessment Ordinance. On-going annual assessments cannot be increased without property owner approval, except for the annual escalation as described below.

Annual Escalation of the Assessments

In order to ensure that SJCFCWCD can provide the needed services over time, it is important to allow for an increase of the assessment over time subject to the rising costs of labor, supplies, and materials. The Assessment Engineer has determined that an appropriate escalation factor is a factor that is reflective of rising labor costs. Therefore, beginning in FY 2021/22, the maximum authorized assessment may be subject to an annual inflationary escalator pursuant to Government Code § 53739 (b) and San Joaquin County Ordinance Section F-3040 based on the annual change in the Consumer Price Index February to February CPI-U for San Francisco-Oakland-Hayward all Items, with Base Period 1982-84 = 100, published by the U.S. Department of Labor, Bureau of Labor Statistics, subject to a minimum of zero percent and a maximum of 4% in any given year. The adjustment to the maximum authorized assessment would be applied to the prior year's annual assessment established by the Department of Public Works.

6. CONCLUSIONS

It is concluded that the proposed assessments do not exceed the reasonable cost of the proportional special benefit conferred on each property assessed.

Scott L. Brown, P.E.

TABLES

Table 1
Flood Conveyance & Levee Maintenance Assessment
Estimated District O&M Services Budget - FY 2020/21

Budget Item / Category	Annual Budget	Notes
Operations & Maintenance	$5,734,000	[1]
Ongoing Engineering Support	$70,000	
State & Federal Coordination (Certifications, Policy & Funding)	$305,000	
Administration, Auditing & Compliance	$65,000	
Legal & Insurance Burden on Services	$88,000	
Subtotal Annual Services Budget	**$6,262,000**	
Current Zone 9 Assessment (Code 56901)	($2,716,000)	
Zone 9 Ad Valorem Tax Apportionment	($850,000)	
SJAFCA AD 96-1 (Code 57594)	($904,000)	
Total Current Funding Sources	**($4,470,000)**	
Net Budget for Drainage CALM Assessment	**$1,792,000**	

[1] Includes Labor, Equipment, Supplies, Materials, Repair & Replacement for Equipment and Mitigation.

Source: San Joaquin County Public Works Dept. and SJAFCA

Table 2
Flood Conveyance & Levee Maintenance Assessment
Summary of Property Characteristics

Land Use Category	Parcel Count	Total Acres
Agricultural	5,071	237,674
Blend	43	2,576
Commercial	4,197	4,288
Industrial	1,099	3,814
Mobile Home	174	468
Multi-Family Residential	5,230	1,280
Open Space	2,298	13,379
Open Space - Developed	3,588	4,152
Rural Residential	3,968	14,110
School	191	2,043
Single-Family Residential	78,008	15,322
Total	**103,867**	**299,106**

Source: Parcel Quest, San Joaquin County GIS and PBI

Table 3
Flood Conveyance & Levee Maintenance Assessment
Average Structure Size per Acre

Land Use Category	Parcel Count	Total Acres	Total Structure Sq. Ft.	Average Structure Sq. Ft/Acre
Agricultural	N/A	N/A	N/A	N/A
Blend	N/A	N/A	N/A	N/A
Commercial	2,111	2,368	22,891,978	9,700
Industrial	824	3,714	44,461,758	12,000
Mobile Home	159	430	389,329	900
Multi-Family Residential	2,177	1,160	18,352,226	15,800
Open Space	N/A	N/A	N/A	N/A
Open Space - Developed	N/A	N/A	N/A	N/A
Rural Residential	4,076	14,388	19,191,740	1,300
School	34	200	469,896	2,400
Single-Family Residential	84,303	16,262	154,599,299	9,500

Source: Parcel Quest, San Joaquin County GIS and PBI

Table 4
Flood Conveyance & Levee Maintenance Assessment
Relative Land Damage Rate

Land Use Category	Relative Land Value per Acre A	Relative Land Damage Per Acre B = A X 10%
Agricultural [1]	$25,000	$2,500
Commercial	$70,000	$7,000
Industrial	$70,000	$7,000
Mobile Home	$50,000	$5,000
Multi-Family Residential	$70,000	$7,000
Open Space	$10,000	$1,000
Open Space - Developed	$40,000	$4,000
Rural Residential	$25,000	$2,500
Single-Family Residential	$50,000	$5,000
School	$41,000	$4,100

Notes: [1] Includes Crop Damage

Source: Larsen Wurzel & Associates, Inc.

Table 5
Flood Conveyance & Levee Maintenance Assessment
Structure Replacement Value and Depth Damage

Land Use		Structure Replacement Value	Percent Damaged															
Depth			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Agricultural	[1]	$111.67	0.0%	23.3%	32.1%	40.1%	47.1%	53.2%	58.6%	63.2%	67.2%	70.5%	73.2%	75.4%	77.2%	78.5%	79.5%	80.2%
Commercial	[2]	$85.56	0.0%	21.7%	30.2%	31.2%	32.4%	32.4%	39.8%	42.8%	51.7%	53.1%	54.1%	61.8%	64.8%	64.8%	65.5%	86.1%
Industrial	[4]	$54.51	0.0%	21.7%	30.2%	31.2%	32.4%	32.4%	39.8%	42.8%	51.7%	53.1%	54.1%	61.8%	64.8%	64.8%	65.5%	86.1%
Mobile Home	[5]	$45.85	0.0%	44.7%	45.7%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%	96.5%
Multi-Family Residential	[6]	$84.40	0.0%	23.3%	32.1%	40.1%	47.1%	53.2%	58.6%	63.2%	67.2%	70.5%	73.2%	75.4%	77.2%	78.5%	79.5%	80.2%
Open Space		$0.00	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Open Space - Developed		$0.00	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rural Residential	[7]	$111.67	0.0%	23.3%	32.1%	40.1%	47.1%	53.2%	58.6%	63.2%	67.2%	70.5%	73.2%	75.4%	77.2%	78.5%	79.5%	80.2%
Single-Family Residential	[8]	$111.67	0.0%	23.3%	32.1%	40.1%	47.1%	53.2%	58.6%	63.2%	67.2%	70.5%	73.2%	75.4%	77.2%	78.5%	79.5%	80.2%
School	[3]	$144.46	0.0%	21.7%	30.2%	31.2%	32.4%	32.4%	39.8%	42.8%	51.7%	53.1%	54.1%	61.8%	64.8%	64.8%	65.5%	86.1%

[1] Source: Table B-33 - Good Status for Single Family Residential

[2] Source: Table B-9 - Good Status for Commercial Retail

[3] Source: Table B-29 Good Status for Public and Private Schools

[4] Source: Table B-21 - Good Status for Industrial Light

[5] Source: Table B-25 - Good Status for Mobile Home

[6] Source: Table B-26 - Good Status Construction Class and Quality for Multi-Family Residential

[7] Source: Table B-33 - Good Status for Single Family Residential

[8] Source: Table B-33 - Good Status for Single Family Residential

Source: Table C-1 2012 CVFPP HEC-FDA Structure and Damage Functions - CVFPP Attachment 8F Flood Damage Analysis

Table 6
Flood Conveyance & Levee Maintenance Assessment
Relative Channel Maintenance Factors

Channel Type	Depth (Ft.) A	Top Width (Ft.) B	Size Factor C = SQRT(A^2 + (B/2)^2)	Accessibility Factor D	Relative Factor E = C*D	Channel Maintenance Factor F = E / 174.69
Major-Leveed	12	150	151.91	1.15	174.69	1.00
Major-Unleveed	25	120	130.00	1.00	130.00	0.75
Moderate-Leveed	10	120	121.66	1.15	139.90	0.80
Moderate-Unleveed	10	100	101.98	1.00	101.98	0.60
Minor-Unleveed	5	40	41.23	1.00	41.23	0.25

Source: Analysis of Channel Maintenance Benefits, PBI (Appendix C)

Table 7
Flood Conveyance & Levee Maintenance Assessment
Relative Runoff Coefficients

Land Use Category	Runoff Coefficient	Large Lot Runoff Coefficient
Agricultural	0.10	0.025
Commercial	0.70	
Industrial	0.70	
Mobile Home	0.35	
Multi-Family Residential	0.70	
Open Space	0.25	0.025
Open Space - Developed	0.70	0.025
Rural Residential	0.10	0.025
School	0.50	
Single-Family Residential	0.35	

Source: Larsen Wurzel & Associates, Inc.

Table 8
Flood Conveyance & Levee Maintenance Assessment
Summary of Levee Benefit Units and Flood Conveyance Benefit Units

Land Use Category	Levee Benefit Units (LBU)	Conveyance Benefit Units (CBU)
Agricultural	1,182,896,262,956	161,060
Blended	617,621,756,132	3,150
Commercial	7,420,942,976,504	5,904
Industrial	2,852,951,330,232	6,609
Mobile Home	75,289,176,943	840
Multi-Family Residential	9,724,061,459,485	1,303
Open Space	197,556,970,049	10,900
Open Space - Developed	253,557,304,022	6,409
Rural Residential	578,871,263,950	11,306
School	1,950,448,996,414	2,831
Single-Family Residential	78,710,552,622,741	10,601
Total	**103,564,750,119,427**	**220,913**
BEF (Applied to LBU's)	**6.40E-09**	
Adjusted Units	**662,738**	**220,913**
Total Benefit Units (TBU)	**883,651**	

Source: As calculated by Larsen Wurzel & Associates, Inc.

Table 9
Flood Conveyance & Levee Maintenance Assessment
Proposed Assessment Rate Calculation

Annual Budget A Table 1	Total Benefit Units B Table 8	Proposed Assessment Rate C = A /B
$1,792,000	883,651	$2.028

Table 10
Flood Conveyance & Levee Maintenance Assessment
Summary of Proposed Assessments by Land Use Category

Land Use Category	Proposed Assessment	Levee Assessment Portion	Drainage Conveyance Asssessment Portion
Agricultural	$294,720	$15,382	$279,338
Blended	$14,403	$8,015	$6,388
Commercial	$111,307	$98,742	$12,565
Industrial	$51,010	$37,519	$13,491
Mobile Home	$2,824	$1,087	$1,737
Multi-Family Residential	$135,809	$131,731	$4,079
Open Space	$27,326	$4,152	$23,175
Open Space - Developed	$20,636	$6,378	$14,259
Rural Residential	$31,731	$7,650	$24,080
School	$31,093	$25,344	$5,749
Single-Family Residential	$1,101,162	$1,055,618	$45,543
Total	**$1,822,021**	**$1,391,616**	**$430,405**

Table 11
Flood Conveyance & Levee Maintenance Assessment
Representative Breach Length

Breach name	Breach Length (FT)	Breach name	Breach Length (FT)
Brc L10	12,441	Mhc R1	12,853
Brc L11	2,591	Mns L1	4,675
Brc L12	5,809	Mns L2	7,232
Brc L13	2,702	Mns R1	4,286
Brc L14	6,802	Mns R2	8,048
Brc L2	14,561	Mpc L1	2,538
Brc L3	4,910	Mpc L2	5,103
Brc L4	6,726	Mpc R1	7,249
Brc L5	3,337	Pca L1	4,679
Brc L6	4,374	Pdc L1	2,506
Brc L7	2,238	Pdc L2	4,042
Brc L8	5,037	Pdc L3	11,523
Brc L9	8,655	Pdc R1	2,460
Brc R1	7,397	Pdc R3	4,291
Brc R10	4,586	Pdc R4	4,742
Brc R11	8,198	Pdc R6	6,962
Brc R12	3,129	Pxs L1	8,429
Brc R13	5,997	Pxs L2	4,718
Brc R14	6,277	Pxs R1	2,046
Brc R3	10,649	Pxs R2	6,493
Brc R4	6,321	Pxs R3	4,783
Brc R5	3,600	Sbc L1	3,598
Brc R6	5,832	Sbc R1	3,703
Brc R7	5,651	Sdc L1	3,743
Brc R8	1,847	Sdc L2	4,299
Brc R9	7,824	Sdc L3	2,314
Csr L1	16,803	Sdc L4	4,846
Csr L2	9,423	Sdc L5	3,583
Csr L3	13,915	Sdc L6	3,522
Csr R1	20,493	Sdc L7	3,035
Csr R2	5,298	Sdc R3	14,864
Csr R3	5,183	Sdc R4	4,332
Csr R4	7,749	Sdc R5	6,200
Csr R5	5,778	Spc L1	4,226
Fcs L1	14,994	Spc L2	3,574
Fcs R1	16,829	Spc R1	1,931
Lmh L1	10,437	Spc R2	5,196
Lmh R1	10,213	Wrs L1	4,580
Mhc L2	6,976	Wrs R1	1,374

Table 12
Assessment Parcel Equations and Example Calculation

Equation 1: Levee Benefit Units

$$Total\ LBU = LBU\ per\ breach\ for\ all\ breaches\ that\ affect\ the\ parcel$$

$$\mathbf{LBU} = Representative\ Levee\ Length\ [1] \times \{(Parcel\ Size\ [2] \times Relative\ Land\ Damage\ Per\ Acre\ [3]) + (Average\ Structure\ Size\ per\ acre\ [4] \times Parcel\ Size\ [2] \times Structure\ Replacement\ Value\ [5] \times Depth\ Damage\ [5])\}$$

[1] Table 11; Parcels within the levee protection zone without flood depths utilized a levee length of 1,000 and only received land damage benefit.
[2] Assessor's Data
[3] Table 4
[4] Table 3
[5] Table 5

Equation 2: Flood Conveyance Benefit Units

$$\boldsymbol{CBU = Sum\ for\ each\ channel\ type}\ \{(Length\ of\ Channel\ [6] \times Relative\ Maintenance\ Factor\ [7]) \times (Runoff\ Coefficient\ [8] \times Parcel\ Size\ [2])\}$$

[2] Assessor's Data
[6] Appendix C
[7] Table 6
[8] Table 7. Agricultural, Open Space, Open Space – Developed, and Rural Residential parcels greater than 40 acres utilized the large lot coefficient beyond 40 acres.

Equation 3: Total Benefit Units

$$\boldsymbol{TBU} = (\boldsymbol{LBU} \times \boldsymbol{BEF}\ [9]) + \boldsymbol{CBU}$$

[9] $\boldsymbol{BEF} = 6.40 \times 10e-9$

Equation 4: Proposed Parcel Assessment

$$\textbf{Calculated Parcel Assessment} = \boldsymbol{Parcel\ TBU} \times \boldsymbol{Assessment\ Rate\ per\ TBU}\ [10]$$

[10] **Assessment Rate per TBU** = $2.028

Example Assessment Calculations

The following examples illustrate the application of the assessment equation to determine the annual assessment for several hypothetical properties.

Example 1

Consider a 0.16-acre single-family residential property the following property characteristics.

Breach	Depth (ft)
Csr L3	8
Csr R1	1

LBU Calculation

Land Use Category – Single-Family

From Table 11, Representative Levee Length: Csr L3- 13,915 ft and Csr R1- 20,493 ft

LBU Calculation:

From **Table 3**, Average Structure Size – 9,500 sqft per acre

From **Table 4**, the Relative Damage per Acre - $5,000 per acre

From **Table 5**, the Structure Damage Replacement Value - $111.67 per square foot; Depth Damage for 8 ft – 67.2% and for 1 ft – 23.3%

$$\boldsymbol{LBU\ (Csr\ L3)} = 13{,}915\ ft\ x\ \{(0.16\ acres\ x\ \$5{,}000\ per\ acre) + (9{,}500\ sqft\ per\ acre\ x\ 0.16\ acres\ x\ \$111.67\ x\ 67.2\%)\} = 1{,}598{,}335{,}410$$

$$\boldsymbol{LBU\ (Csr\ R1)} = 20{,}493\ ft\ x\ \{(0.16\ acres\ x\ \$5{,}000\ per\ acre) + (9{,}500\ sqft\ per\ acre\ x\ 0.16\ acres\ x\ \$111.67\ x\ 23.3.\%)\} = 826{,}873{,}024$$

$$\textbf{Total LBU} = 1{,}598{,}335{,}410 + 826{,}873{,}024 = 2{,}425{,}208{,}434$$

CBU Calculation

Channel Characteristic	Length (Miles)	Relative Maintenance Factor	Runoff Coefficient	Parcel Acres	CBU
		Table 6	Table 7		
Moderate - Leveed	6.5	0.80	0.35	0.16	0.2912
Moderate - Unleveed	14.3	0.60	0.35	0.16	0.4805
				Total CBU	0.7717

Assessment Calculation

$$\boldsymbol{TBU} = (2{,}425{,}208{,}434\ x\ 6.40\ x\ 10e-9) + 0.7717 = 16.2912$$

$$[\boldsymbol{Calculated\ Assessment}] = [16.2912] * [\$2.0279] = \$33.04$$

$$[\boldsymbol{Proposed\ Assessment}] = \$\mathbf{33.04}$$

Example 2

Assume a 5-acre commercial property the following property characteristics:

Breach	Depth (ft)
Brc L2	3
Brc L3	4

LBU Calculation

Land Use Category - Commercial

From Table 11, Representative Levee Length: Brc L2 - 14,561 ft and Brc L3 - 4,910 ft

LBU Calculation:

From **Table 3**, Average Structure Size - 9,700 sqft per acre

From **Table 4**, the Relative Damage per Acre - $7,000 per acre

From **Table 5**, the Structure Damage Replacement Value - $85.56 per square foot; Depth Damage for 3 ft - 31.2% and for 4 ft - 32.4%

$$\boldsymbol{LBU\ (Brc\ L2)} = 14{,}561\ ft\ x\ \{(5.00\ acres\ x\ \$7{,}000\ per\ acre) + (9{,}700\ sqft\ per\ acre\ x\ 5.00\ acres\ x\ \$85.56\ x\ 31.2\%)\} = 19{,}361{,}673{,}169$$

$$\boldsymbol{LBU\ (Brc\ L3)} = 4{,}910\ ft\ x\ \{(5.00\ acres\ x\ \$7{,}000\ per\ acre) + (9{,}700\ sqft\ per\ acre\ x\ 5.00\ acres\ x\ \$85.56\ x\ 32.4\%)\} = 6{,}773{,}295{,}114.40$$

$$\textbf{Total LBU} = 19{,}361{,}673{,}169 + 6{,}773{,}295{,}114 = 26{,}134968{,}283$$

CBU Calculation

Channel Characteristic	Length (Miles)	Relative Maintenance Factor	Runoff Coefficient	Parcel Acres	CBU
		Table 6	Table 7		
Moderate - Unleveed	5.6	0.80	0.70	5.00	15.7
Major - Leveed	2.8	1.00	0.70	5.00	9.8
				Total CBU	25.5

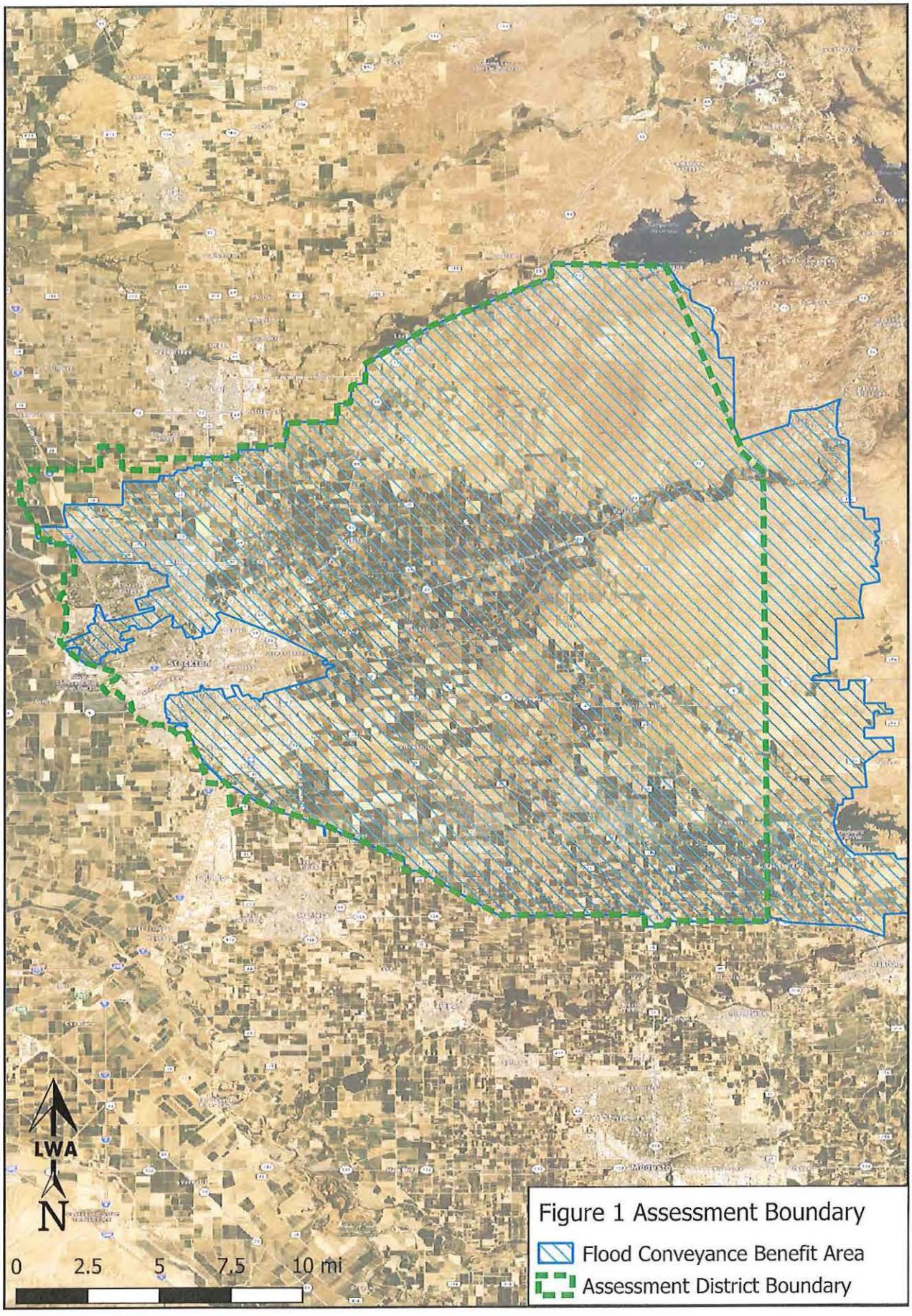
Assessment Calculation

$$\boldsymbol{TBU} = (26{,}134{,}968{,}283\ x\ 6.40\ x\ 10e-9) + 25.5 = 192.7246$$

$$[\boldsymbol{Calculated\ Assessment}] = [192.7246] * [\$2.028] = \mathbf{\$390.84}$$

$$[\boldsymbol{Proposed\ Assessment}] = \mathbf{\$390.84}$$

FIGURES


LWA
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2.5
5
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10 mi
Figure 1 Assessment Boundary
Flood Conveyance Benefit Area
Assessment District Boundary

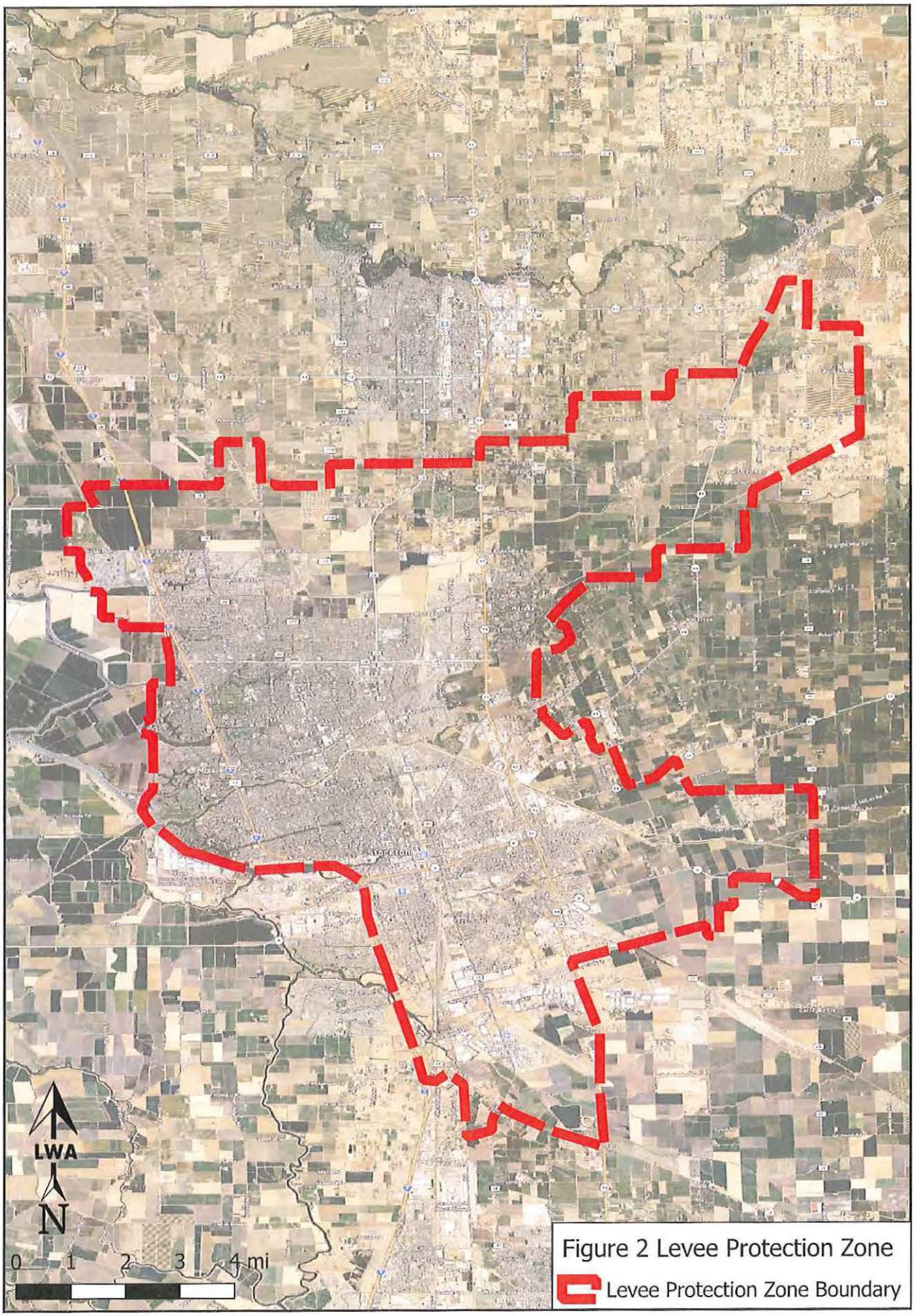
LWA
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Figure 2 Levee Protection Zone
Levee Protection Zone Boundary

Appendix A

San Joaquin County Use Codes

Appendix A
Flood Conveyance & Levee Maintenance Assessment
San Joaquin County Use Codes & Assessment Land Uses

Use Code	County Description	Assessment Land Use
1	Vacant Residential Lot – Development with Utilities	Open Space - Developed
2	Vacant Lot with PROB. W/C Precludes Building A RE	Open Space
3	Vacant Lot – Totally Unusable (incurable)	Open Space
4	Vacant Residential Lot with miscellaneous Residential IMPRS (garage)	Open Space - Developed
5	Vacant Residential Subdivision Site	Open Space
6	Vacant Residential Lot- Undeveloped	Open Space
7	Potential Residential Subdivision	Open Space
10	Single-Family Dwelling (SFD)	Single-Family Residential
11	Condominium Unit	Multi-Family Residential
12	Planned Unit Residential Development (PURD)	Single-Family Residential
13	Single-Family Residence with Secondary Residential Square Footage	Single-Family Residential
14	SFD with Secondary Use (i.e., barber shop)	Single-Family Residential
15	Zero Lot Line Residential	Single-Family Residential
16	Residential Lot with Mobile Home	Mobile Home
17	Single-Family with Common Wall (duet, halfplex, etc.)	Single-Family Residential
20	Vacant Lot (zoned for two units)	Open Space
21	One Duplex – One Building	Single-Family Residential
22	Two SFDs On Single Parcel	Multi-Family Residential
30	Vacant Lot Zoned for 3 or 4 Units	Open Space
31	Single Triplex – (3 units, 1 structure)	Single-Family Residential
32	Three Units - 2 or More Structures	Multi-Family Residential
34	Single Fourplex	Multi-Family Residential
35	Four Units, 2 or More Structures	Multi-Family Residential
40	Vacant Lots Zoned for Apartments	Open Space
41	5-10 Residential Units – Single Building	Multi-Family Residential
42	5-10 Residential Units – 2 or more Buildings	Multi-Family Residential
43	11-20 Residential Units – One Structure	Multi-Family Residential
44	11-20 Residential Units – 2 or more Buildings	Multi-Family Residential
45	21-40 Units	Multi-Family Residential
46	41-100 Units	Multi-Family Residential
47	Over 100 Units	Multi-Family Residential
48	High-Rise Apartments	Multi-Family Residential
50	Rural Residential – Vacant Homesite	Agricultural
51	Rural Residence – 1 Residence	Rural Residential
52	Rural Residential – 2 or more residences	Rural Residential
53	Rural Residential – Vacant – Development with Rural Residences. - with Miscellaneous Residences. IMPS;	Open Space - Developed
54	Only	Open Space
55	Labor Camp	Rural Residential

Use Code	County Description	Assessment Land Use
56	Rural Residential with Mobil Home	Mobile Home
59	Residential Care Home (6 units or less)	Multi-Family Residential
60	Motels Less Than 50 Units	Commercial
61	Motels Over 50 Units	Commercial
62	Motels less than 50 units with some kitchens	Commercial
63	Motels over 50 Units with some Kitchens	Commercial
64	Motels Less Than 50 Units with Shops	Commercial
65	Motels Over 50 Units with Shops	Commercial
68	Resort Motels – Cabins, Etc.	Commercial
70	Hotel without Restaurant	Commercial
71	Hotel with Restaurant	Commercial
78	Rooming House – Convent – Rectory, Etc.	Commercial
80	Common Areas – No Structures	Open Space
81	Common Areas – with Structures	Open Space - Developed
82	Common Areas – Roads and Streets	Open Space
90	Mobile Home Park	Mobile Home
91	Overnight Type Trailer Park	Open Space
92	Mobile Home Park with Overnight Facilities	Mobile Home
93	Resort Type Trailer Park	Mobile Home
94	Mobile Home Condominium Lot	Mobile Home
95	Mobile Home Appurtenances	Mobile Home
96	Mobile Home	Mobile Home
100	Vacant Commercial Land – Undeveloped	Open Space
101	Vacant Commercial Land with Utilities	Open Space - Developed
102	Vacant Commercial Land with Miscellaneous IMPS	Open Space - Developed
107	Potential Commercial Subdivision	Open Space
110	Single-Story	Commercial
111	Multiple-Story Stories	Commercial
112	Multiple Stores in one Building	Commercial
113	Store with Residential Unit or Units	Commercial
114	Store Condo	Commercial
120	1 store and 1 office	Commercial
121	Multiple Combination of Offices, Shops	Commercial
130	1-Story Department Store	Commercial
131	2-Story Department Store	Commercial
140	Grocery Store	Commercial
141	Supermarkets	Commercial
142	Convenience Store	Commercial
143	Convenience Store with Gas Sales	Commercial
144	Fruit Stand	Commercial
150	Regional Shopping Center	Commercial
151	Community Shopping Center	Commercial
152	Neighborhood Shopping Center	Commercial
153	Individual Parcel Within Regional Shopping	Commercial

Use Code	County Description	Assessment Land Use
154	Individual Parcel Within Community Center	Commercial
155	Individual Parcel within neighborhood Shopping	Commercial
156	Shopping Center Common Area	Commercial
170	1-Story Office Building	Commercial
171	2-Story Office Building	Commercial
172	3 or More Story Office Building	Commercial
173	Office Building with Residential Unit or Units	Commercial
180	Assisted Living Residence	Multi-Family Residential
181	Congregate Seniors Housing	Multi-Family Residential
182	Continuing Care Retirement Community	Multi-Family Residential
183	Skilled Nursing Facility	Multi-Family Residential
184	Specialty Home (Developmentally Disable)	Multi-Family Residential
190	Medical Offices	Commercial
191	Dental Offices	Commercial
192	Medical Dental Complex	Commercial
193	Veterinary Hospitals	Commercial
194	One-Story Office Condo	Commercial
195	Two-Story Office Condo	Commercial
196	Medical Office Condo	Commercial
197	Dental Office Condo	Commercial
200	Commercial Common Area – Non Shopping C	Commercial
201	Miscellaneous Multiple Uses – None Fully Dominant	Commercial
202	Commercial Use	Commercial
203	Animal Training Facility	Commercial
204	Day Care Center	Commercial
210	Restaurants	Commercial
211	Fast Food Restaurants	Commercial
212	Food Preparation – Take Out Only	Commercial
213	Cocktail Lounge – Bars	Commercial
214	Restaurant with Residential Unit or Units	Commercial
230	Walk-In Theaters	Commercial
231	Multiple Screen Theaters	Commercial
240	Banks	Commercial
250	Full Service Stations	Commercial
251	Self Service. Station (has no facilities)	Commercial
252	Service Station with Car Wash	Commercial
253	Truck Terminals	Commercial
254	Bulk Plants	Commercial
255	Self Service Station with Mini Mart	Commercial
256	Convenience Store (mini-mart) with gas station	Commercial
260	Auto Sales with Service Center	Commercial
261	Auto Sales without Service Center	Commercial
262	Used Car Lot	Commercial
263	Other Sales Centers (Trailers, mobile home	Commercial

Use Code	County Description	Assessment Land Use
270	Farm or CONTS. Machine Sales and Service	Commercial
271	Farm or CONTS. Machine Sales Only	Commercial
272	Farm or CONST. Machine Sales Only	Commercial
280	Auto and Truck Repairs and Accessories	Commercial
281	Specialty Shops (Tires, Brakes, Etc.)	Commercial
282	Car Wash	Commercial
283	Self Service Car Wash	Commercial
284	Laundry	Commercial
285	Auto Body Shop	Commercial
290	Retail Nursery	Commercial
291	Commercial/Wholesale Nursery	Commercial
300	Vacant Industrial Land Undeveloped	Open Space
301	Vacant Industrial Land – Developed With	Open Space - Developed
302	Vacant Industrial Land with Miscellaneous IMPS	Open Space - Developed
307	Potential Industrial Subdivision	Open Space
310	Light Manufacturing and Light Industrial	Industrial
311	Light Industrial and Warehousing	Industrial
312	Light Industrial Warehouse Multiple Tenants	Industrial
313	Industrial Condo	Industrial
314	Shop-Work Area with Small Office	Commercial
320	Warehousing – Active	Industrial
321	Warehousing – Inactive	Industrial
323	Warehousing – Yard	Industrial
324	Mini Storage Warehousing	Industrial
330	Lumber Mills	Industrial
331	Retail Lumber Yards	Industrial
332	Specialty Lumber Products (Mouldings, SA	Industrial
340	Packing Plants	Industrial
341	Cold Storage or Refrigerated Warehouse	Industrial
350	Fruit and Vegetable	Industrial
351	Meat Products	Industrial
352	Large Winery	Industrial
353	Small/Boutique Winery	Commercial
355	Other Food Processing	Industrial
360	Feed and Grain Mills	Industrial
361	Retail Feed and Grain Sales	Industrial
362	Stockyards	Industrial
363	AG Chemical Sales and/or Application	Industrial
370	Heavy Industry	Industrial
371	Shipyard	Industrial
380	Mineral Processing	Industrial
381	Sand and Gravel – Shale	Industrial
390	Industrial Common Area	Industrial
391	Miscellaneous Industrial Multiple Uses – None Full	Industrial

Use Code	County Description	Assessment Land Use
392	Industrial Use (doesn't reasonably fit any	Industrial
393	Airport (private	Commercial
400	Irrigated Orchard	Agricultural
401	Irrigated Orchard with Residence	Agricultural
420	Irrigated Vineyard	Agricultural
421	Irrigated Vineyard with Residence	Agricultural
450	Irrigated Row Crops	Agricultural
451	Irrigated Row Crops with Residence	Agricultural
460	Irrigated Pasture	Agricultural
461	Irrigated Pasture with Residence	Agricultural
462	Horse Ranch	Agricultural
463	Horse Ranch with Residence	Agricultural
470	Dairy	Agricultural
471	Dairy with Residence	Agricultural
480	Poultry Ranch	Agricultural
481	Poultry Ranch with Residence	Agricultural
490	Feed Lots	Agricultural
500	Dry Farm	Agricultural
501	Dry Farm with Residence	Agricultural
510	Dry Graze	Agricultural
511	Dry Graze with Residence	Agricultural
520	Non-Irrigated Vineyards	Agricultural
521	Non-Irrigated Vineyards with Residence	Agricultural
530	Specialty Farms	Agricultural
550	Tree Farm	Agricultural
551	Tree Farm (with or without residence)	Agricultural
590	Waste Lands	Open Space
591	Berms	Open Space
610	Swim Centers	Commercial
611	Recreational Centers	Commercial
612	Marina or Yachting Club	Commercial
613	Racquetball Club	Commercial
614	Tennis Club	Commercial
615	Private Campground or Resort	Commercial
620	Privately Owned Dance Halls	Commercial
630	Bowling Alleys	Commercial
631	Arcades and Amusement Centers	Commercial
632	Skating Rink	Commercial
640	Clubs, Lodge Halls	Commercial
650	Privately Owned Auditoriums and Stadiums	Commercial
660	18-Hole Public Golf Course	Open Space
661	9-Hole Public Golf Course	Open Space
662	Country Club	Open Space
664	Driving Range	Open Space

Use Code	County Description	Assessment Land Use
670	Privately Owned Race Tracks	Commercial
680	Non-Profit Organizations Camps (Boy Scouts, Etc.)	Commercial
690	Privately Owned Parks	Open Space
710	Church, Synagogue or Temple	Commercial
711	Other Church Property	Commercial
720	Private School	School
721	Parochial School	School
722	Special School	School
730	Private Colleges	School
740	Full Service Hospital	Commercial
742	Clinic	Commercial
760	Orphanages	Commercial
770	Cemeteries (non-profit)	Open Space
771	Mortuaries and Funeral Homes	Commercial
772	Cemetery Taxable (profit)	Open Space
810	SBE valued	Open Space - Developed
811	Utility Water Company	Open Space
812	Mutual Water Company	Open Space
813	Cable TV	Open Space
814	Radio and TV Broadcast Site	Open Space
815	Pipeline Right-Of-Way	Open Space
850	Right-Of-Way	Open Space
851	Private Road	Open Space - Developed
860	Well Site	Open Space
861	Tank Site	Open Space
862	Springs and Other Water Sources	Open Space
870	Rivers and Lakes	Open Space
890	Parking Lots – Fee	Open Space - Developed
891	Parking Lots – No Fee	Open Space - Developed
892	Parking Garages	Commercial
900	Vacant Federal Lands	Open Space
901	Federal Buildings	Commercial
902	Military Installation	Commercial
903	Miscellaneous Federal Property	Commercial
910	Vacant State Lands	Open Space
911	State Buildings	Commercial
912	State Shops & Yards	Commercial
913	State Parks and Other Recreational Facilities	Open Space - Developed
914	State Schools, Colleges	School
916	Miscellaneous State Property	Commercial
920	Vacant County Land	Open Space
921	County Buildings	Commercial
923	County Parks and Other Recreational Facilities	Open Space
924	County Hospitals	Commercial

Use Code	County Description	Assessment Land Use
925	Miscellaneous County Property	Commercial
930	Vacant City Lands	Open Space
931	City Buildings	Commercial
932	City Shops and Yard	Commercial
933	City Parks and Other Recreational Facilities	Open Space
934	Municipal Utility Prop. (reservoirs, sewer pipeline)	Open Space - Developed
935	Parking Lots – Garages	Open Space - Developed
936	Municipal Airports	Commercial
937	Miscellaneous City Property	Commercial
940	School District Properties	Commercial
941	Fire Districts	Commercial
942	Flood Control District Property	Open Space
943	Water District Property	Open Space
944	Miscellaneous District property	Open Space
950	Public Owned Land – Non- Taxable	Open Space
951	Public Owned Land – Taxable [Section 11]	Open Space
1000	Calaveras AG	Agricultural
1001	Stanislaus AG	Agricultural
1002	Blended	Blended

Source: 2012 CVFPP Attachment 8F Flood Damage Analysis

Appendix B

Flood CALM Assessment District Floodplain Analysis (Prepared by PBI)

PETERSON . BRUSTAD . INC .
ENGINEERING . CONSULTING

Flood CALM Assessment District Floodplain Analysis

Prepared for: San Joaquin County Flood Control and Water Conservation District

June 26, 2019

Prepared by: Michael Pantell, PE, CFM

Reviewed by: Mike Rossiter, PE, CFM and Dave Peterson, PE

Introduction

As part of the San Joaquin County Flood Control and Water Conservation District's (SJCFCWCD) Flood Control and Levee Maintenance (Flood CALM) Assessment District formation process to fund enhanced levee and channel maintenance, Peterson Brustad, Inc. (PBI) was asked by Larsen Wurzel & Associates (LWA) to assist with floodplain analyses that could be used as part of their proposed method for estimating the proportionate level of special benefit that each parcel within the proposed assessment receives from SJCFCWCD's maintenance activities. The floodplain analysis will be used to identify: which parcels could potentially be flooded from a SJCFCWCD-maintained stream, to what extent could they be flooded, what flood depths could they experience, and how many levee miles is each parcel relying on to protect it from flooding.

This Technical Memorandum (TM) outlines the data sources and methodology of PBI's floodplain analysis.

Baseline Data

To the extent available, existing analyses from the California Department of Water Resources (DWR) were used to estimate the floodplain depths and extents for this effort. As part of DWR's 2014 Task Order 306 (TO306), hydraulic models were developed for the Flood CALM study area and 62 levee breach scenarios were analyzed for levees in the area which were used as the baseline tools for this effort.

The primary resources used for the floodplain analysis include:

- DWR Central Valley Floodplain Evaluation and Delineation (CVFED) TO306 FLO2D model[1]
- The DWR's CVFED TO24 and 25 HEC-RAS v4.1 model[2]

[1] DWR. CVFED TO 306: Technical Memorandum- Hydraulic Analysis for 200-Year Floodplain Inundation Data in Technical Support of Local Communities, prepared by HDR, Inc., December 2014.
[2] DWR. CVFED Program for the Lower San Joaquin River: Task Orders 24 and 25, Technical Memorandum Lower San Joaquin River System HEC-RAS Model Development, prepared by HDR, Inc., February 2010.

- United States Army Corps of Engineers (USACE) Lower San Joaquin River Feasibility Study (LSJRFS)[1] hydrologic analysis

A 200-year flood was used for the analysis as this was the event DWR used as the basis for their breach analysis. This event is not what the system is designed for, rather it was used as a representative flood to identify parcels impacted by different stream reaches and the relative impact to each parcel.

Hydraulic Model Updates

PBI converted the existing DWR CVFED HEC-RAS v4.1 model to a 1D/2D HEC-RAS v5.0 model to further analyze overbank flooding and to perform additional levee breach scenarios in the area that was not covered by the previous DWR CVFED effort.

The 1D reaches from the DWR HEC-RAS 4.1 model were not altered when updating to the 1D/2D HEC-RAS 5.0 model. The modifications to the model included converting overbank areas to a 2D mesh using the following steps:

- Importing DWR's 1-meter resolution CVFED LiDAR ground elevation data[2] into the model
- Converting 1D storage areas to 2D gridded flow areas at 250ft x 250ft resolution
- Assigning Manning's n values for the overland 2D areas based on land use type. San Joaquin County zoning GIS data[3] was used to identify land use types in the floodplain. Guidance from the DWR CVFED FLO2D analysis was used in assigning n-values to the various land use types.

Analysis

The floodplain analysis for this study consisted of two types of scenarios:

- **Channel Overtopping:** No levee breaches occur, but channels and levees overtop once their capacity is reached
- **Levee Breach:** Scenario if a SJCFCWCD-maintained levee were to fail

Channel Overtopping Floodplain

The Channel Overtopping scenario analyzed assumed that no levee breaches occur, but channels and levees overtop once their capacity is reached. To perform a baseline floodplain analysis, a system-wide 1D/2D HEC-RAS 5.0 model was developed from the CVFED HEC-RAS 4.1 model.

---

[1] USACE Lower San Joaquin River Feasibility Study F3 Hydrology Appendix, prepared by PBI, July 2012.

[2] HDR Engineering, Inc., CVFED LiDAR Data, Task Order 20, "Secondary LiDAR Post Processing in Support of Hydraulic Model Development", June 2010.

[3] San Joaquin County. "Zoning.shp". GIS Shapefile Acquired July 2015.

This model was run with hydrology developed by USACE LSRFS to determine the floodplain. For the region that the CVFED HEC RAS 4.1 model did not cover (primarily the area south of the Mormon Slough system), CVFED's FLO2D results were used. Where the HEC-RAS model results overlapped with the FLO2D model results, the worse-case flooding scenario was used. Figure 1 provides an overview of the HEC-RAS 5.0 and FLO2D model extents.

Breach Floodplains

To determine the proportionate benefit provided to each parcel by the SJCFCWCD maintained levees, a breach floodplain analysis was conducted. The CVFED TO306 FLO2D modeling provided 62 breach scenarios throughout the study area with corresponding floodplains. These floodplains were used directly from DWR with no alterations required.

For areas of the SJCFCWCD maintained levees that did not have associated CVFED FLO2D breaches, new levee breaches were modeled using the 1D/2D HEC-RAS 5.0 model. Twenty-nine (29) additional breach locations were chosen to fully develop the floodplain within the study area.

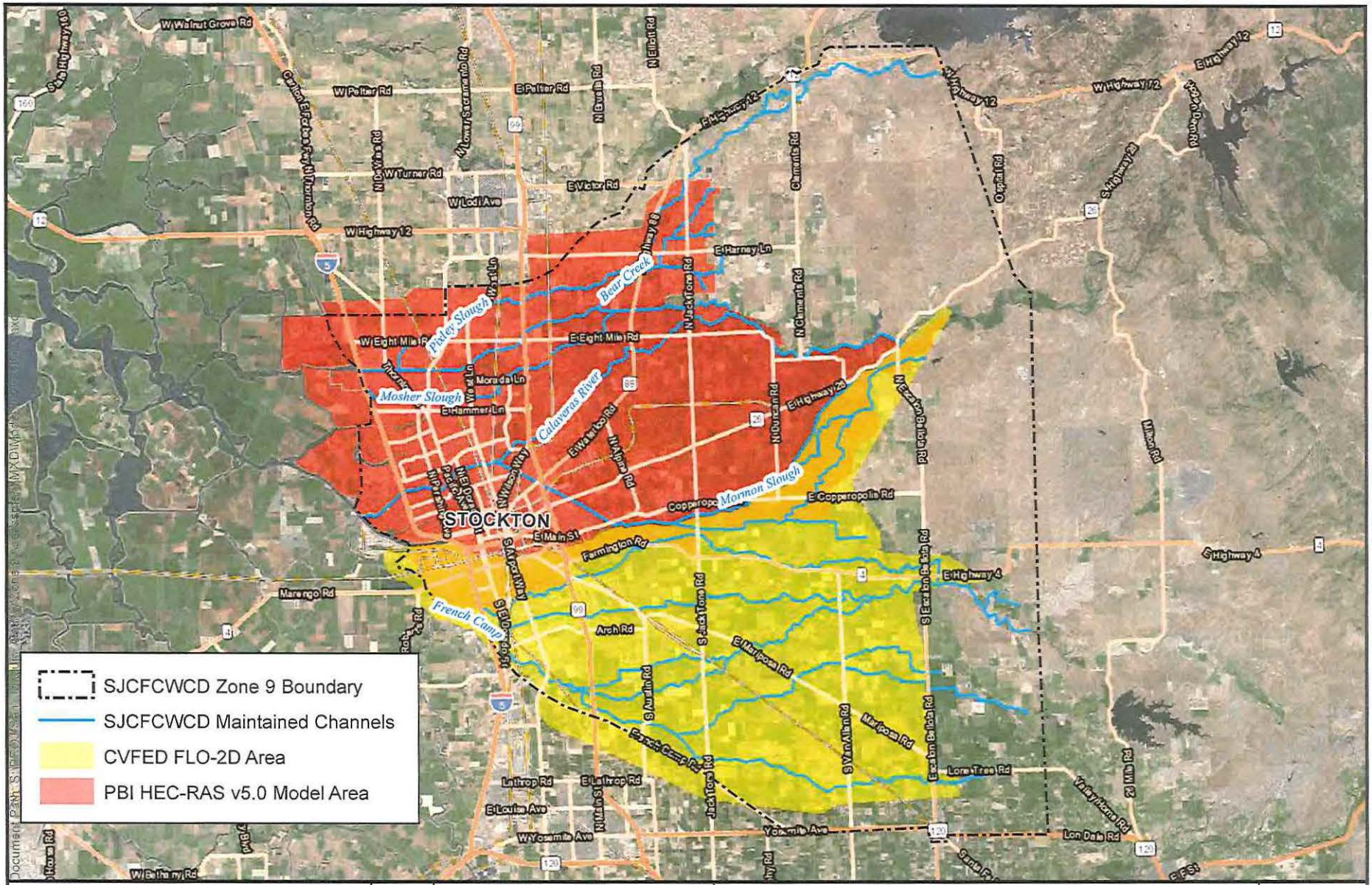
Breach parameters were set to match the parameters used in the CVFED analyses. Breach formation time was set to be instant, breach width set to be equal to 50 times the levee height, and breaches were set to erode to the elevation of the landside toe of the levee.

Figure 2 provides the breach locations and the associated levee reaches analyzed for the hydraulic analysis.

Parcel-Level Analysis

In order to determine the degree to which each flooding scenario affects each parcel in the study area, GIS shapefiles with parcel-level flooding statistics for each of the 92 scenarios modeled (1 overtopping scenario + 91 breach scenarios) were generated and are described in Attachment A. The parcel-level data includes calculations of average floodplain depth on the parcel, wetted area, and which breaches affected each parcel. From this data, the approximate number of levee miles that protect each parcel can also be determined.

Additionally, levee reaches (and the corresponding breach scenarios) were categorized by whether or not they were FEMA accredited, cost-shared with other public entities, and if they are USACE Project Levees.



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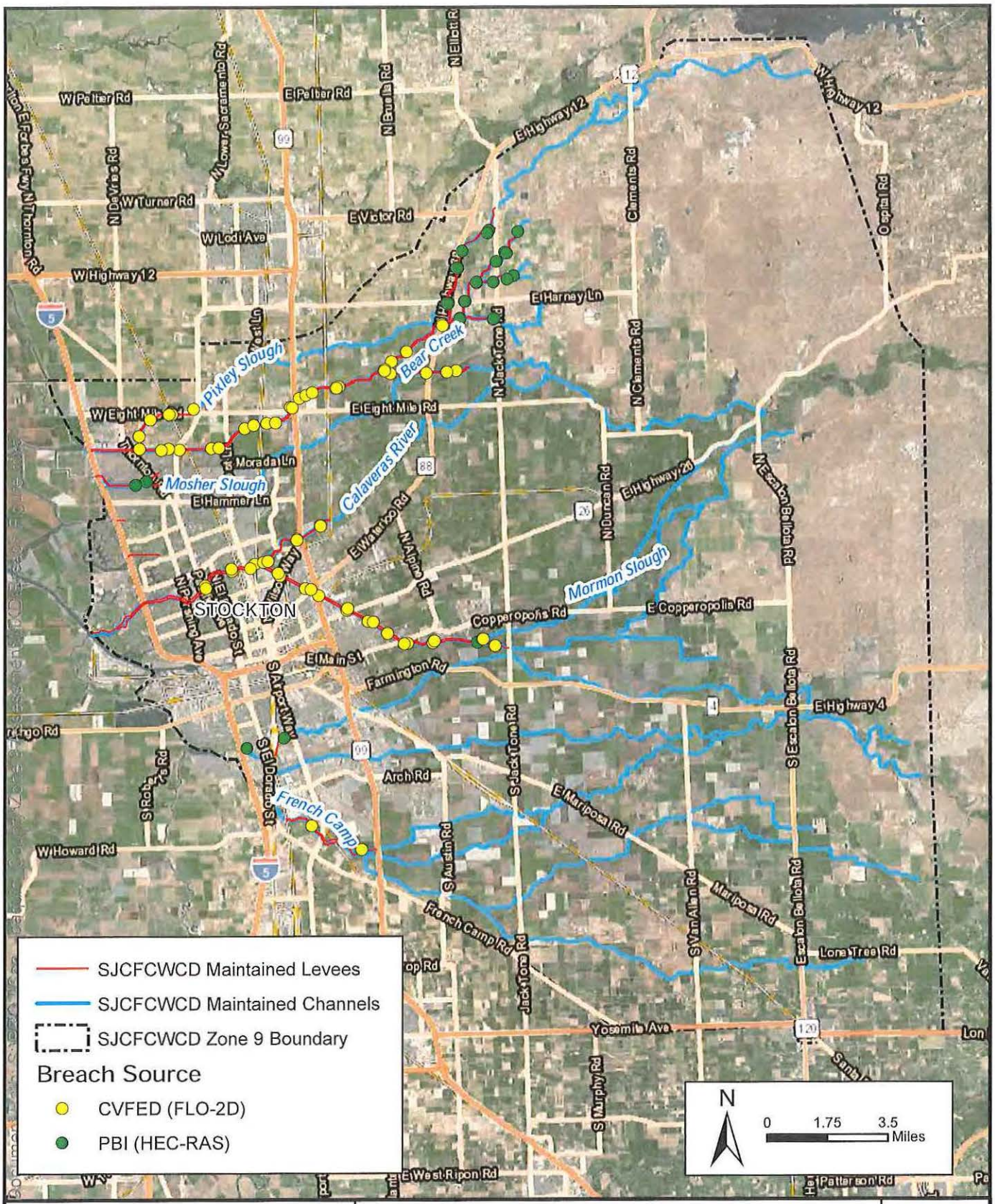
N

0 2.5 5 Miles

SJCFCWCD

Model Boundaries

FIGURE 1



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Levee Reaches & Breach Locations

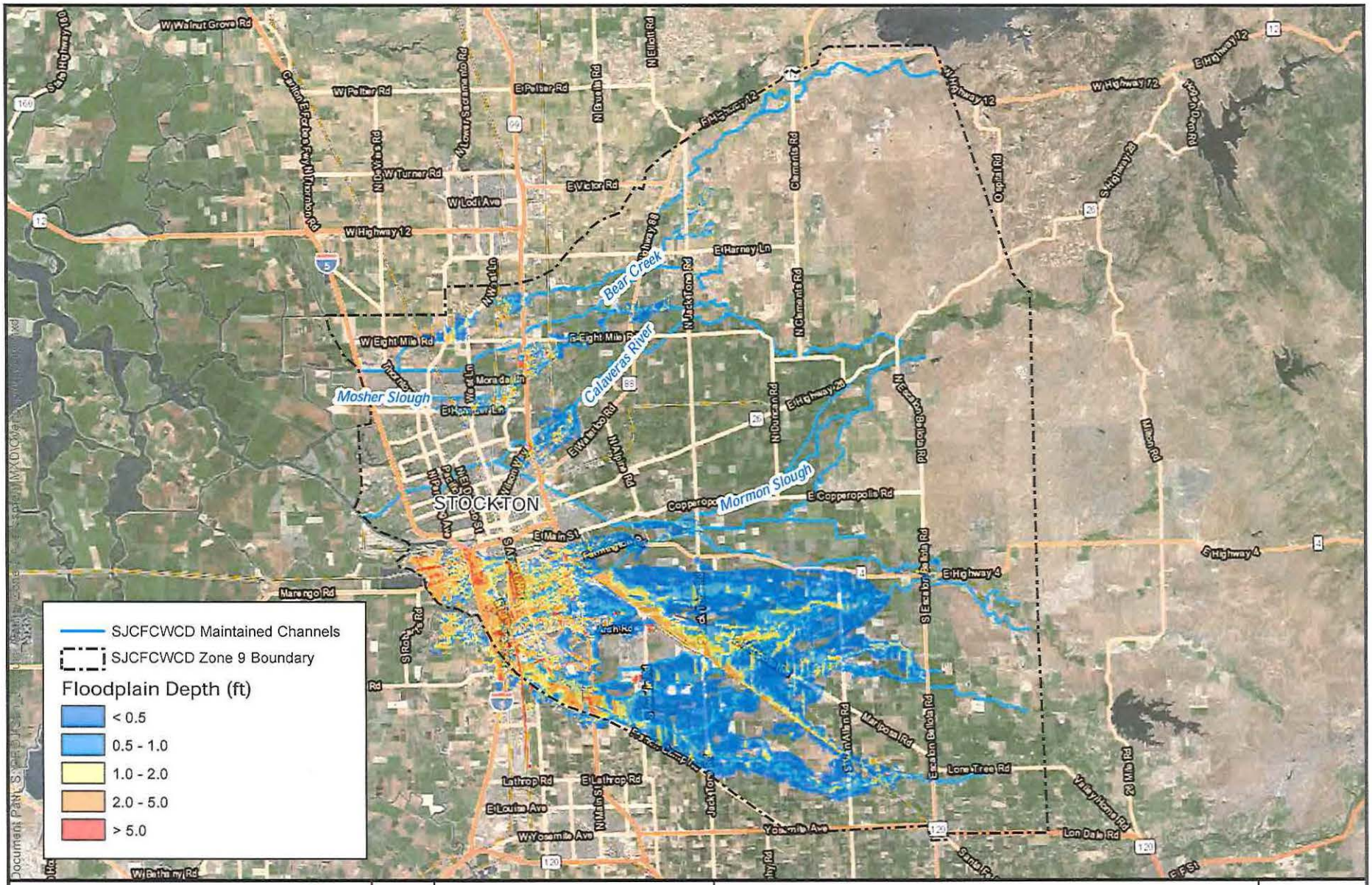
FIGURE

2

Results

The results of this analysis are reflected on two maps: an overtopping only floodplain (Figure 3), and a map reflecting both overtopping and a composite of the 91 individual levee breach scenarios (Figure 4).

A summary of parcel-level GIS information electronically transmitted to LWA and San Joaquin County is included in Attachment A.



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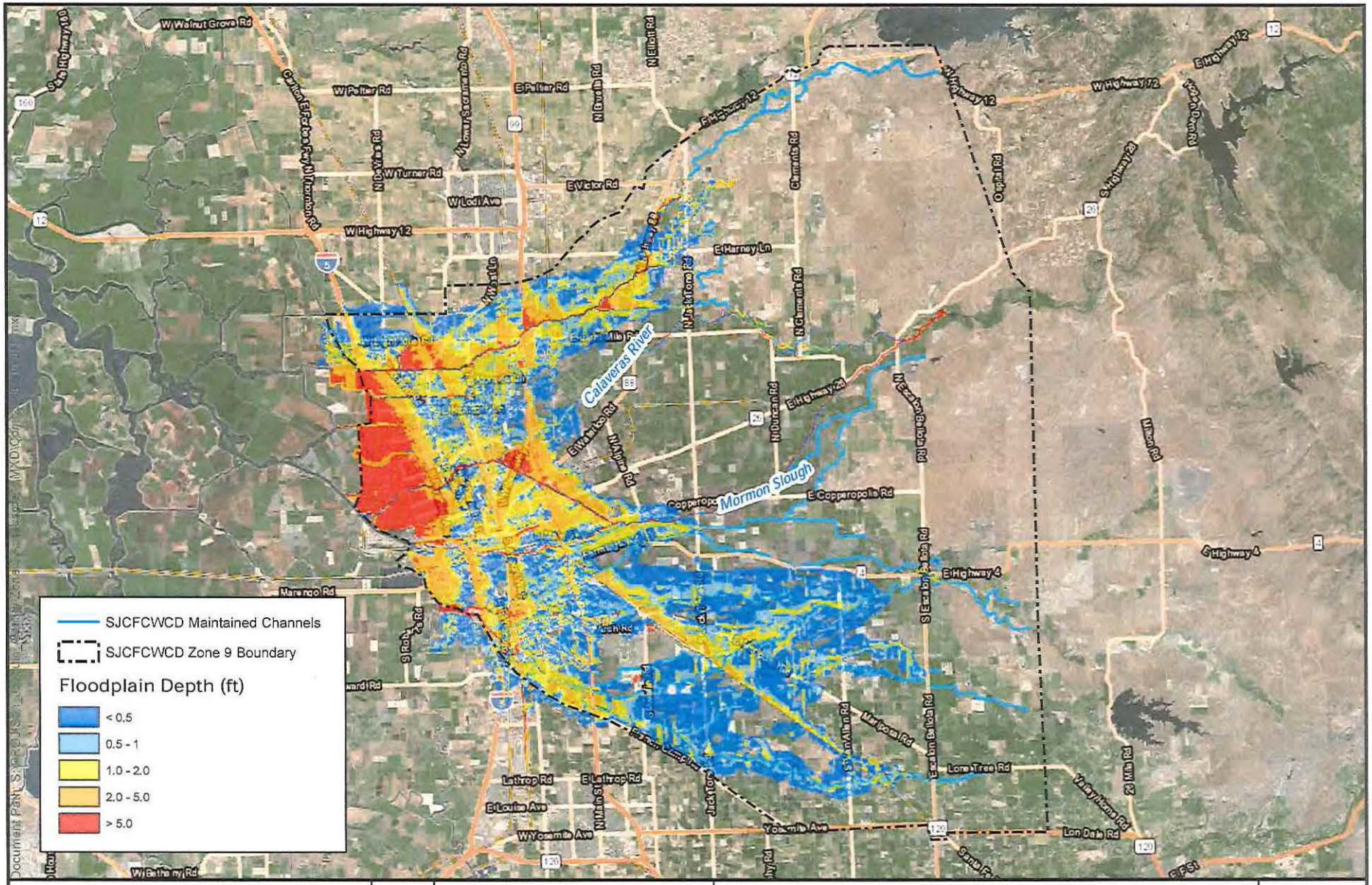
SJCFCWCD

Overtopping-Only Floodplain

FIGURE 3



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0 2.5 5 Miles

SJCFCWCD

Composite Floodplain
(Overtopping & Levee Breach Scenarios)

FIGURE

4

Attachment A

Metadata for GIS Deliverable of Flood CALM Floodplain Analyses

Assessment Reaches.shp:

Description: All of the levees in the study area were broken down into segments. Each levee segment is associated with a modeled levee breach (see Breach Location.shp).

Brch_Rch: Name of reach

Breach Location Final.shp:

Description: 93 levee breaches were modeled for this study. This shapefile shows location and name/ID of each breach. It also indicates whether or not the breach location is on a Project levee, a SJAFCA levee, or a FEMA-accredited levee.

River: River the breach is located on
Code Name: Name of the breach. Note: some breaches are grouped together from original source.
Project: Is the breach on a Project or non-Project levee?
SJAFCA: Is the breach on a levee cost shared with SJAFCA?
FEMA: Is the breach on a FEMA accredited levee?

Maintained Channels.shp:

Description: This shapefile shows the average depth of flooding on each parcel for a scenario where there are no levee breaches and channels have been maintained. Flooding is from overtopping of channel banks only. The average flood depth recorded is for the wetted area of the parcel only (zero depth/dry areas were not included in calculating the average depth of flooding). The shapefile also indicates how many acres of each parcel got wet.

APN_CHR: APN
Depth: Average flooding depth in feet
Area: Wetted Area in Acres (ie- how many acres of the parcel got water on it from this flooding scenario)

Parcel Breach Depth.shp:

Description: This shapefile shows the average depth of flooding on each parcel for each of the 91 levee breach scenarios that were run for this study. Levee breach locations were named according to the river that they are on and whether they're on the left bank or right bank levee. The average flood depth recorded is for the wetted area of the parcel only (zero depth/dry areas were not included in calculating the average depth of flooding).

The shapefile also indicates what watershed each parcel is located within, and if the parcel is within the current AD9 boundary.

The shapefile also has columns that show: What is the worst-case flood depth on each parcel for a breach of a Project Levee? Worst case flood depth on each parcel for a breach from a SJAFCA levee? From a FEMA-accredited levee? Etc.

Note: See the shapefile "Parcel Breach Area.shp" which indicates how many acres of the parcel got wet for each breach scenario.

APN_CHR: APN
Watershed: Watershed parcel is associated with. (eg- Bear Creek, Calaveras River, etc.)
AD9: is the parcel in the current AD9 boundary?
MNS_L1 through BRC_R14: The column headers are the name given to each breach location. of each breach. average depth of flooding (in feet) associated with each breach per the name of the field
Project: maximum flood depth (Ft) from breaches associated with project levees
NonProject: maximum flood depth (Ft) from breaches associated with Non-project levees
CostShared: maximum flood depth (Ft) from breaches associated with SJAFCA Cost Shared levees
NotShared: maximum flood depth (Ft) from breaches associated with non SJAFCA Cost Shared levees
FEMA: maximum flood depth (Ft) from breaches associated with FEMA accredited levees
NonFEMA: maximum flood depth (Ft) from breaches associated with NonFEMA accredited levees

Parcel Breach Area.shp:

Description: See description for the "Parcel Breach Depth.shp" shapefile. Everything is set up the same, except the values in this shapefile indicate how many acres of the parcel got wet for each breach scenario.

Appendix C

Analysis of Flood CALM Channel Maintenance Benefits (Prepared by PBI)

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Analysis of Flood CALM Channel Maintenance Benefits

Prepared for: San Joaquin County Flood Control and Water Conservation District

June 26, 2019

Prepared by: Michael Pantell, PE, CFM

Reviewed by: Mike Rossiter, PE, CFM and Dave Peterson, PE

Introduction

As part of the San Joaquin County Flood Control and Water Conservation District's (SJCFCWCD) Flood Control and Levee Maintenance (Flood CALM) Assessment District formation process to fund enhanced levee and channel maintenance, Peterson Brustad, Inc. (PBI) was asked by Larsen Wurzel & Associates (LWA) to assist with an analysis to estimate the proportional special benefit that each parcel within the proposed assessment district receives from enhanced channel maintenance. Runoff from each parcel in the proposed assessment district eventually enters a SJCFCWCD-maintained channel and drains to the Delta. As part of LWA's proposed method to estimate channel maintenance benefits, PBI estimated how many SJCFCWCD-maintained channel miles are used to drain runoff from each parcel to the Delta. This Technical Memorandum (TM) outlines PBI's methods and results for this analysis.

Analysis

To estimate the length of SJCFCWCD-maintained channels that each parcel utilizes for drainage, parcels were assigned a subbasin to identify where runoff from each property would enter the channel system. Hydrologic subbasins were delineated as part of the United States Army Corps of Engineers (USACE) Lower San Joaquin River Feasibility Study[1] and were used for this analysis. The length of channel from the point where each subbasin enters the channel to where the channel enters the Delta was measured using GIS. A measured channel length was calculated for each subbasin and was assigned to each parcel within that subbasin.

For stream systems that bifurcate or where multiple channel paths were possible, the shortest channel path was assumed for assigning channel lengths to subbasins and parcels. For parcels that overlapped multiple subbasins, the centroid of the parcel was used to determine which subbasin the parcel belonged to.

[1] USACE. *"Lower San Joaquin River Feasibility Study F3 Hydrology Appendix"*, prepared for SJAFCA by PBI, July 2012.

Figure 1 summarizes the calculated total channel lengths attributed to parcels within the study area. Note that some areas in the western part of the study area drain directly to the Delta and do not use channels maintained with SJCFCWCD funds for drainage. Some of the smaller interior drainage ditches that are maintained by SJCFCWCD were also excluded from the analysis. These areas were therefore were not included in the drainage benefit analysis.

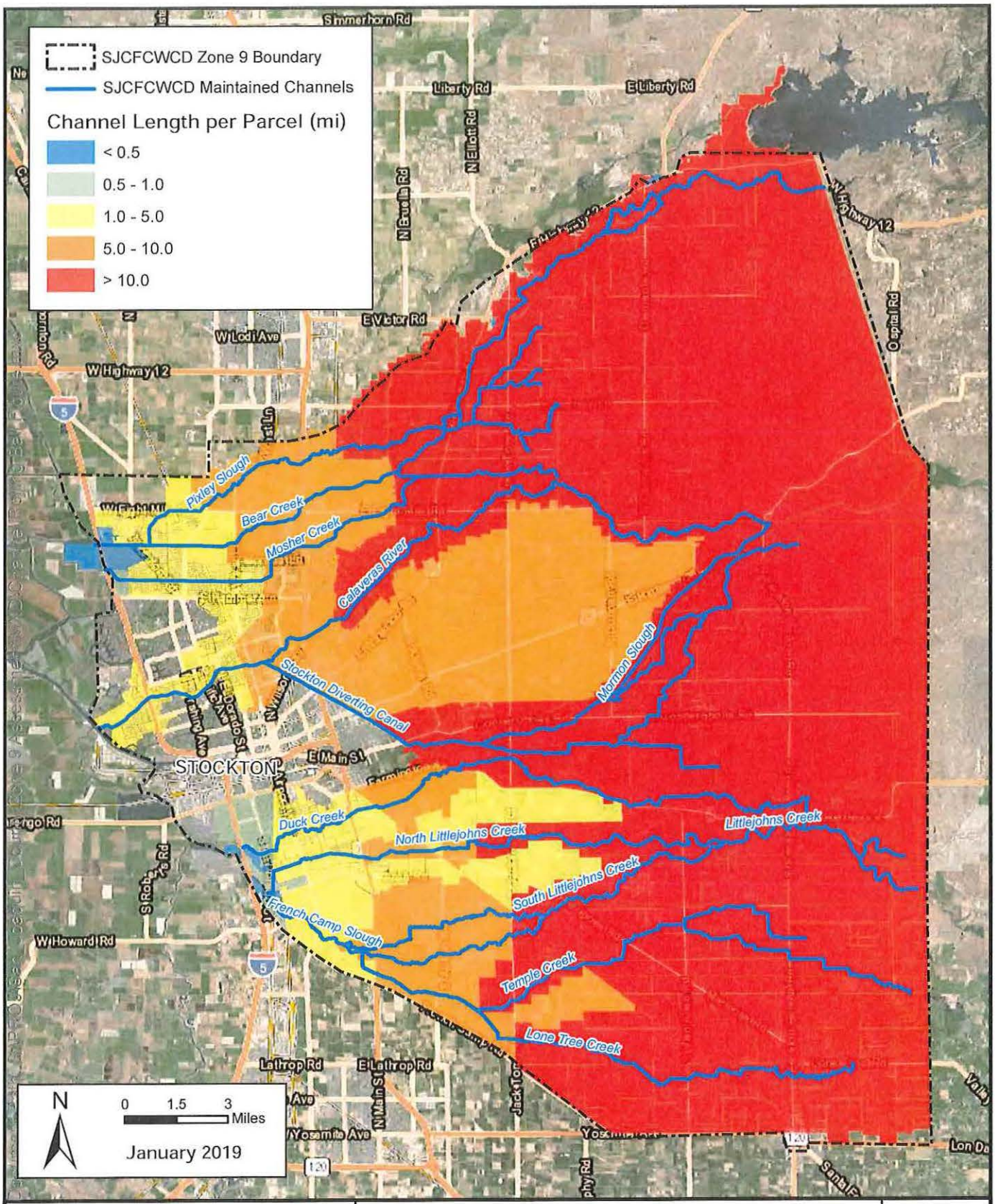
After calculating the overall channel lengths that each parcel uses for drainage, this length was then broken down into different categories of channels. Channels were classified as (1) major, (2) moderate, or (3) minor based on their size and flow capacity. They were also broken down by (a) leveed channels vs. unleveed channels as well as (b) Project channels vs. non-Project channels. The purpose of breaking down the overall channel lengths into these classifications is to differentiate between the different levels of maintenance that are required for different types of channels. For example, a major channel that can convey 15,000cfs is larger and requires more maintenance resources than a minor channel that is smaller and conveys 200 cfs. In addition, leveed channels require more maintenance than unleveed channels to maintain and Project channels have different maintenance standards compared to non-Project channels.

To classify channels based on stream size and conveyance capacity, the 100-year FEMA flows for all study channels were obtained from the San Joaquin County FEMA Flood Insurance Study. Based on local knowledge of the system and on field reconnaissance, a "major" channel was defined as those channels that have a FEMA 100-year flow greater than 5,000 cfs. A "minor" channel was defined as those channels that have a FEMA 100-year flow less than 1,800cfs. The 1,800 cfs cutoff is based on USACE classification of minor streams[1]. A "moderate" channel was defined as those channels that fall in between the 1,800 cfs and 5,000 cfs limits.

Channels that are leveed were not placed into the "minor" category even if flows were less than 1,800 cfs. Leveed channels were only considered "moderate" or "major" channels due to the increased maintenance requirements of a leveed system. SJCFCWCD must have responsibility for maintaining at least one levee bordering a stream segment in order to be considered leveed in this classification system.

Figure 2 summarizes the channel classification criteria. Figure 3 presents the resulting classification for SJCFCWCD-maintained channels. Figure 4 identifies Project channels and non-Project channels.

[1] USACE. *"Flood Damage Reduction Measures in Urban Areas"* ER 1165-2-21. October 1980.



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SJCFCWCD

Total Channel Length by Parcel

FIGURE
1

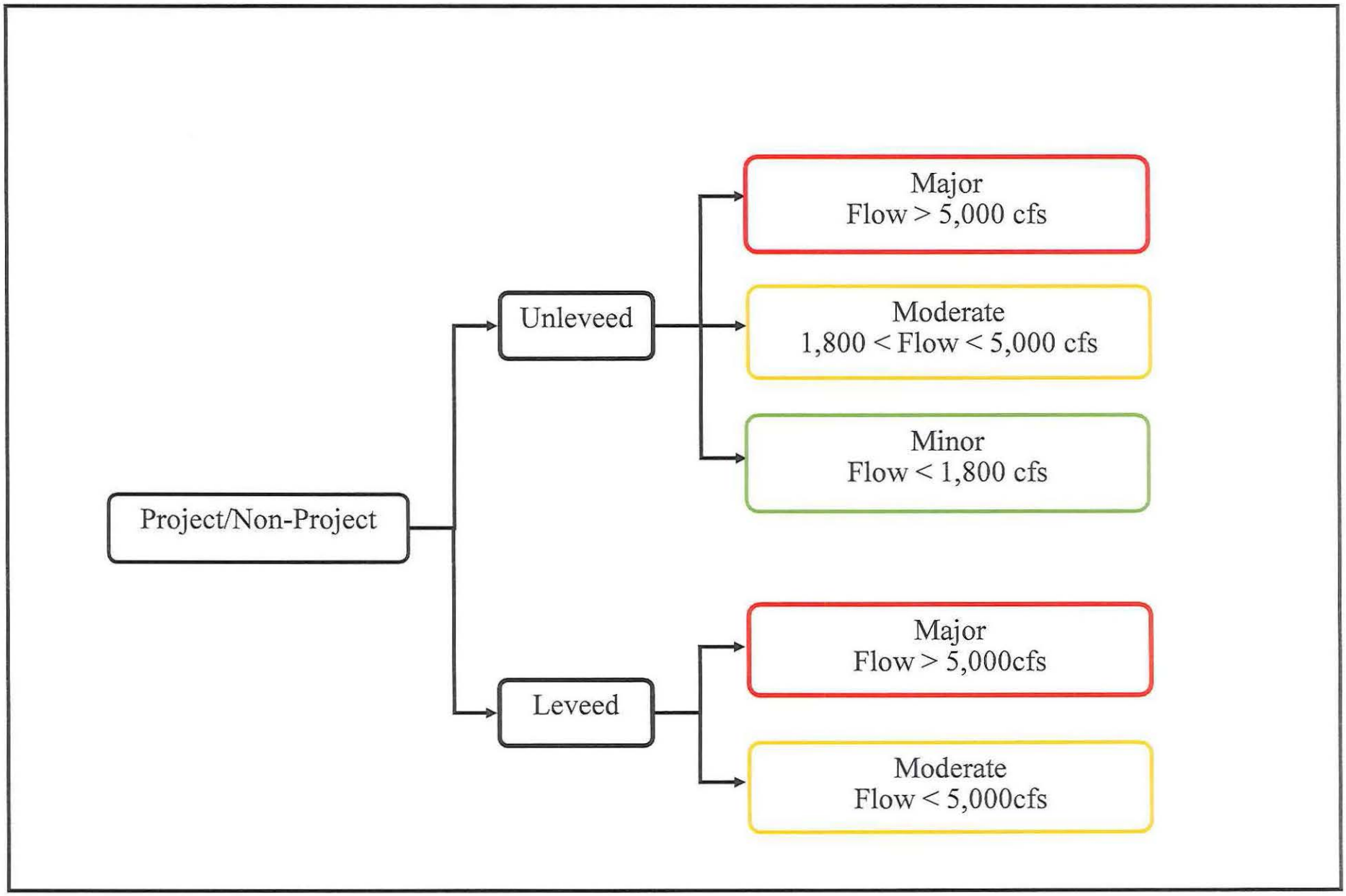
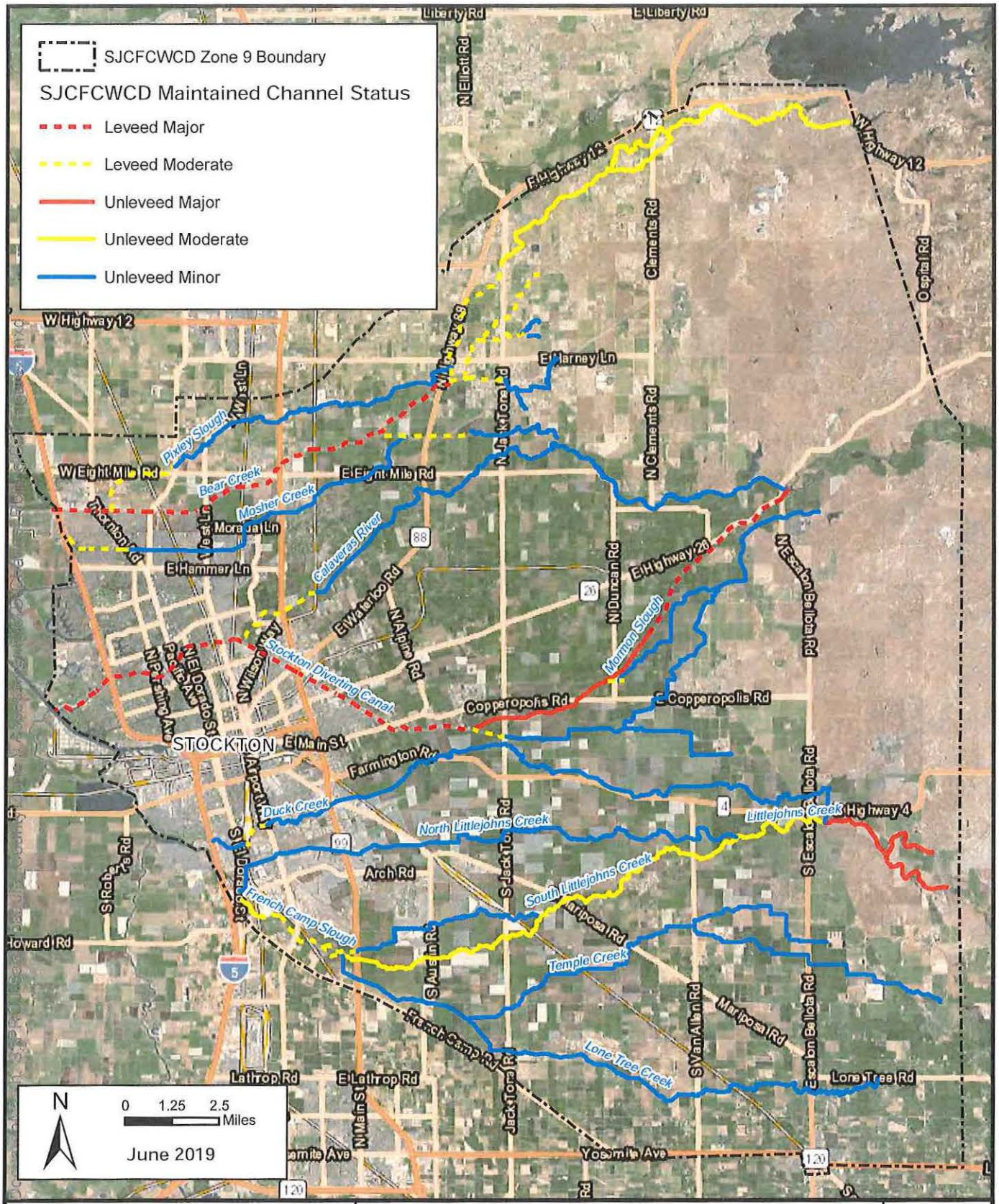

Project/Non-Project
Unleveed
Leveed
Major
Flow > 5,000 cfs
Moderate
1,800 < Flow < 5,000 cfs
Minor
Flow < 1,800 cfs
Major
Flow > 5,000cfs
Moderate
Flow < 5,000cfs

Figure 2



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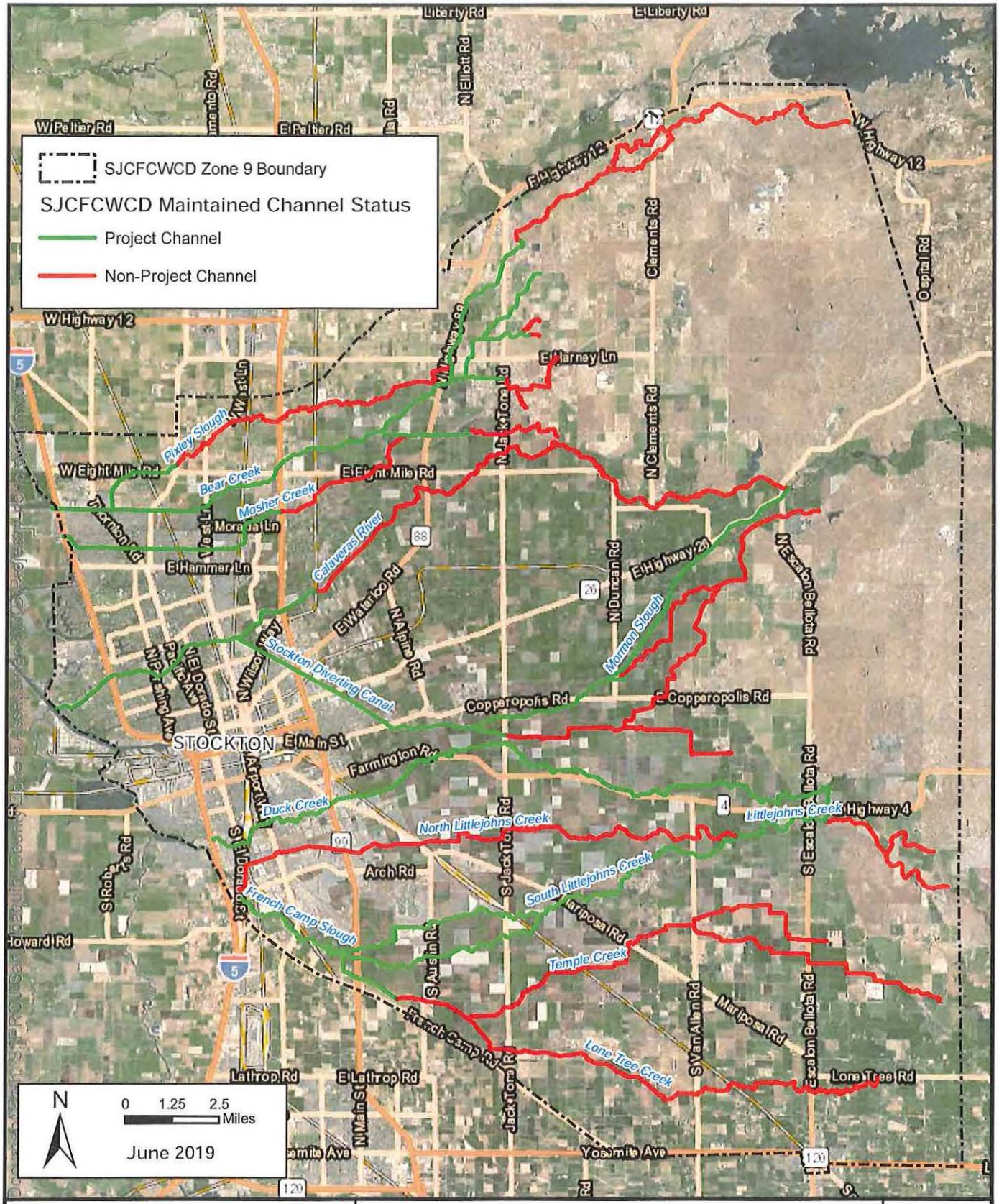
SJCFCWCD

Channel Classification

FIGURE

3



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SJCFCWCD

Project Vs. Non-Project **Channels**

FIGURE

4

Figures 5 and 6 below present a comparison of what a typical cross section for a "major", "moderate", and "minor" channel looks like. For typical SJCFCWCD-maintained channels, maintenance efforts were assumed to be correlated to channel size and surface area. Project and non-Project channels do not vary in physical properties but vary in maintenance standards that are required.

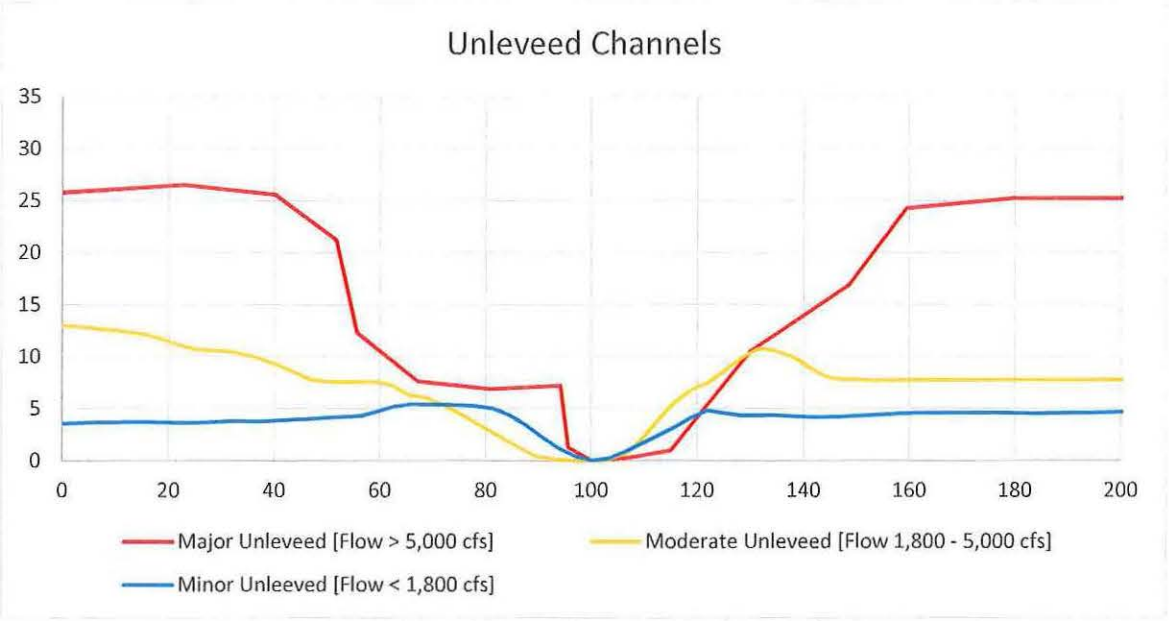

Figure 5. Typical Unleveed Cross Section by Classification

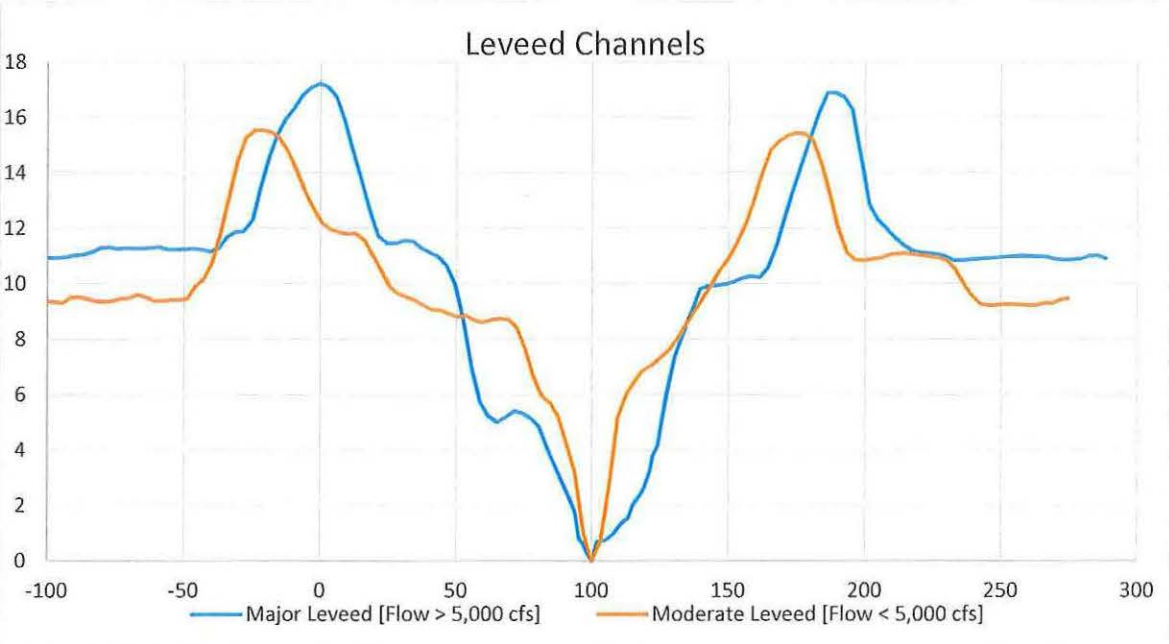

Figure 6. Typical leveed Cross Section by Classification

Results

All parcels within the study area were assigned a benefit drainage flow path using a GIS analysis and based on the methodology outlined in this Technical Memorandum. A detailed summary of all GIS deliverables is provided in Attachment A.

Attachment A

Metadata for GIS Deliverable of Flood CALM Channel Benefit Analyses

Channel Class & Length.shp:

Description: This shapefile contains channel classification for varying length segments in feet. Each segment indicates whether there is a levee present and the major, moderate, or minor classification. The classification is based on whether a channel is leveed and the FEMA 100-year flow through that reach. If a channel has a flow greater than 5000 cfs, it was classified as a major channel (regardless of levee status); if the flow is between 1800 cfs and 5000 cfs, it was classified as a moderate channel (regardless of levee of status); if the flow is less than 1800 cfs it was classified moderate if leveed and minor if unleveed.

Shape_Leng: Length of channel segment in feet.
Leveed: "Y" indicated channel segment is leveed and "N" indicates it is not.
Status: Major, moderate or minor channel segment.
Project: "Y" indicates channel segment is a project channel and "N" indicates it is not.

Watersheds_Final.shp:

Description: This shapefile contains subbasins for the Mosher, French Camp, Calaveras, and Bear Creek basins. Each subbasin has the total length of channel miles that the subbasin drains into. Additionally, this total length is broken down by major, moderate minor, leveed, unleveed, project, and non-project channels.

Watershed: Overall watershed that the subbasin is located within
Length_Tot: Total length of channel that is subbasin benefits from (in miles).
PMajLev: Total length of major leveed project channels that the subbasin benefits from (in miles).
PModLev: Total length of moderate leveed project channels that the subbasin benefits from (in miles).
PMajNoLev: Total length of major unleveed project channels that the subbasin benefits from (in miles).
PModLev: Total length of moderate unleveed project channels that the subbasin benefits from (in miles).
PMinLev: Total length of minor unleveed project channels that the subbasin benefits from (in miles).
NPMajLev: Total length of major leveed non-project channels that the subbasin benefits from (in miles).
NPModLev: Total length of moderate leveed non-project channels that the subbasin benefits from (in miles).
NPMajNoLev: Total length of major unleveed non-project channels that the subbasin benefits from (in miles).
NPModLev: Total length of moderate unleveed non-project channels that the subbasin benefits from (in miles).
NPMinLev: Total length of minor unleveed non-project channels that the subbasin benefits from (in miles).

Rolling_Ball_Final.shp:

Description: This shapefile contains the total length of channel miles that each parcel drains into. Additionally, this total length is broken down by major, moderate minor, leveed, unleveed, project, and non-project channels. Parcels were assigned channel lengths based on which subbasin they were in (see Watersheds_Final.shp). Where parcels overlap more than 1 subbasin, the subbasin that contained the majority of the parcel was assigned to that parcel.

Watershed: Overall watershed that the subbasin is located within
Length_Tot: Total length of channel that is subbasin benefits from (in miles).
PMajLev: Total length of major leveed project channels that the subbasin benefits from (in miles).
PModLev: Total length of moderate leveed project channels that the subbasin benefits from (in miles).
PMajNoLev: Total length of major unleveed project channels that the subbasin benefits from (in miles).
PModLev: Total length of moderate unleveed project channels that the subbasin benefits from (in miles).
PMinLev: Total length of minor unleveed project channels that the subbasin benefits from (in miles).
NPMajLev: Total length of major leveed non-project channels that the subbasin benefits from (in miles).
NPModLev: Total length of moderate leveed non-project channels that the subbasin benefits from (in miles).
NPMajNoLev: Total length of major unleveed non-project channels that the subbasin benefits from (in miles).
NPModLev: Total length of moderate unleveed non-project channels that the subbasin benefits from (in miles).
NPMinLev: Total length of minor unleveed non-project channels that the subbasin benefits from (in miles).

Appendix D

List of Parcels &
FY 2020/21 Assessment Roll

(PROVIDED UNDER SEPARATE COVER)

ATTACHMENT
III. B

MEMORANDUM OF UNDERSTANDING OF THE INTEGRATED WATER MANAGEMENT PLANNING COORDINATING COMMITTEE MEMBERS TO FORM A REGIONAL WATER MANAGEMENT GROUP

1 Purpose and Goals

The purpose of this Memorandum of Understanding (MOU) is form a coordinating committee (hereinafter referred to as the "Greater San Joaquin County Coordinating Committee" or "Coordinating Committee") of members that wish to participate in the integrated regional water management (IRWM) planning. The MOU hereby creates the Greater San Joaquin County Regional Water Coordinating Committee and sets forth the goals and the rules by which it will operate.

The goals of the Coordinating Committee are:

- To develop a comprehensive planning document to facilitate regional cooperation in providing water supply reliability, water recycling, water conservation, water quality improvement, stormwater capture and management, flood management, and environmental and habitat protection and improvement.
- To foster coordination, collaboration, and communication between Coordinating Committee organizations and interested stakeholders, to achieve greater efficiencies, enhance public services, and build public support for vital projects.
- To support the procurement of State and Federal grant funding.

2 Non-binding Nature

This MOU and participation in this MOU and IRWM efforts are non-binding; a member may withdraw from participation at any time.

3 Coordinating Committee Membership

Any organization with an interest in integrated regional water management planning may join the Greater San Joaquin County Coordinating Committee. Members could include but are not limited to such organizations as: water agencies, conservation groups, agriculture representatives, community action groups, businesses, tribal groups, and land use entities.

4 Coordinating Committee Representation

Each Coordinating Committee member that is an organization will identify their lead representative for the Coordinating Committee and will attend Coordinating Committee meetings to make decisions. Coordinating Committee members may choose to identify one (1) alternate but they are encouraged to have the primary representative attend the Coordinating Committee meetings for consistency.

5 Joining and Leaving

To join the Coordinating Committee, a prospective member must notify the Coordinating Committee at _____ of their intent to join, then sign this MOU. To discontinue their participation in the Coordinating Committee a member may do so at any time by notifying the Coordinating Committee and signing the Notice of Withdrawal, at which point they will no longer be a member of the Coordinating Committee.

6 Decision-Making

At its inaugural meeting, the Coordinating Committee will prepare a decision-making charter outlining the process for making decisions. All signatories to the MOU will agree and adhere to the decision-making charter.

7 Financing

To be eligible for funding through many state programs, projects must be included in an Integrated Regional Water Management Plan (IRWMP) that conforms to the most recent Guidelines. San Joaquin County will provide the funding to update the GSJC IRWM Plan to conform to 2016 DWR IRWM Guidelines.

To expedite the grant application process, San Joaquin County shall provide initial funding for a consultant to develop grant applications. The total cost of the consultant and applications shall be shared by those entities with projects included in the grant applications. If an entity does not put forth a project for a grant application, that entity is not responsible for providing funding for that grant application.

SIGNATURE PAGE
MEMORANDUM OF UNDERSTANDING
GREATER SAN JOAQUIN COUNTY
INTEGRATED REGIONAL WATER MANAGEMENT REGION

_____

Date

_____

Organization

Primary Representative

Name: _____

Email: _____

Telephone: _____

Mailing Address: _____

Secondary Representative

Name: _____

Email: _____

Telephone: _____

Mailing Address: _____

SIGNATURE PAGE
NOTICE OF WITHDRAWAL FROM COORDINATING COMMITTEE
GREATER SAN JOAQUIN COUNTY
INTEGRATED REGIONAL WATER MANAGEMENT REGION

As a representative of my organization, I understand that in signing this page and submitting it to the Coordinating Committee, I am withdrawing my organization from participating in IRWM as a member of the Greater San Joaquin IRWM Region Coordinating Committee.

_____

Name & Title

_____

Organization

_____

Date

ATTACHMENT
IV. A

Friant Water Blueprint Focused on Counties South of Delta

July 1, 2019

Blueprint Will Help Deliver Message for More Water

By Jessica Theisman, Associate Editor

An important blueprint for the success of farming in the Central Valley is being developed to present to California government officials. This blueprint outlines what must be done to get water to the eight counties south of the delta. The blueprint is a critical step to help keep farmers in business due to the pressure from the Sustainable Groundwater Management Act.

Johnny Amaral is the Friant Water Authority, Chief of External Affairs. Amaral overseas Friant's engagement with San Joaquin Valley farmers, businesses, and related industry groups regarding water policy and water supply matters as well as legislative lobbying and communications activities. (https://californiaagtoday.com/wp-content/uploads/2017/04/P1020218.jpg)

"I remember this isn't just about farmers. This entire Central Valley depends on a functioning water system. Whether you are a farm owner, a farm worker, a city councilman or somebody who works at a milk plant or at a library, it doesn't matter," he said. "San Joaquin Valley is in this together, and it is an all or nothing situation. This is being labeled as a farmer-led effort, and it is misleading."

"This is a very broad coalition of very unusual interests coming together to promote this," Amaral said.

<< Bio-Control for Strawberry Growers (https://californiaagtoday.com/bio-control-strawberry-growers/)

Help Avoid Cardiovascular Death—Produce is Medicine >> (https://californiaagtoday.com/help-avoid-cardiovascular-death-produce-medicine/)

ATTACHMENT
IV. B

METROPOLITAN BAY DELTA COMMITTEE: Update on Governor's water resilience portfolio and Delta conveyance planning efforts

July 2, 2019 Maven Meetings

At last week's meeting of Metropolitan's Special Committee on the Bay Delta, Bay Delta Initiatives Manager Steve Arakawa updated the committee on the Governor's water resilience portfolio and the continuing planning efforts for Delta conveyance.

STATEWIDE WATER RESILIENCE PORTFOLIO DEVELOPMENT

The state administration is looking for input from different parts of the state on a water resilience portfolio, including water supply projects that can adapt to climate change and how Delta conveyance fits in, Mr. Arakawa said.

He began with some background on climate change. To understand climate change resiliency, it's important to understand how climate change will affect hydrology, water quality, water storage, and other elements, he said.

In the Central Valley, the Sacramento River system has about 13.5 MAF of storage capacity; the San Joaquin Valley has about 11 MAF; and the snowpack represents about 15 MAF of storage capacity.

"*It's significant to the degree that climate affects that snowpack, as that has an effect on storage so that has to be factored into planning for water supply*," he said. "*It means planning for other types of ways of getting water into storage, so this is an important context to keep in mind when we talk about adapting to climate change.*"

He presented a graphic of the California Water Plan that shows the forecasts for snowpack out to the end of the century. On the left is the historical range from 1961 to 1990; the middle graphic is the snowpack projection for 2070 to 2099 under a

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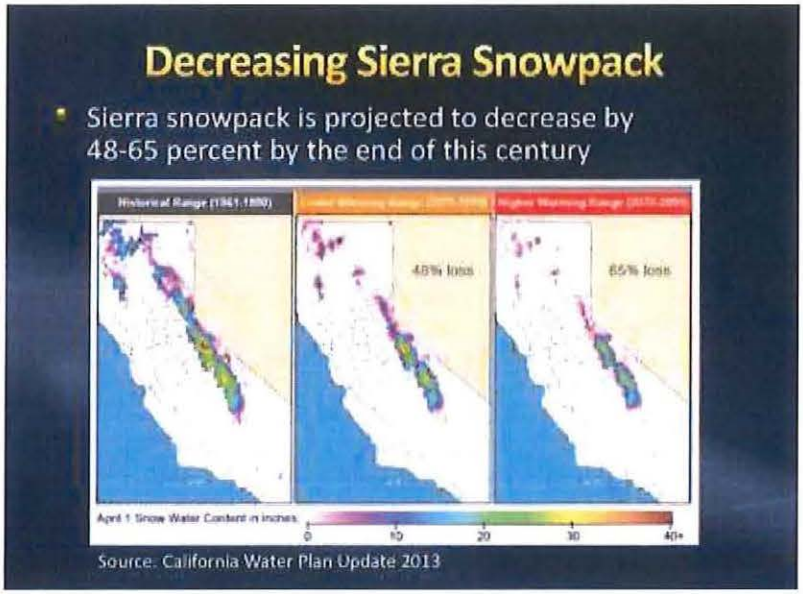
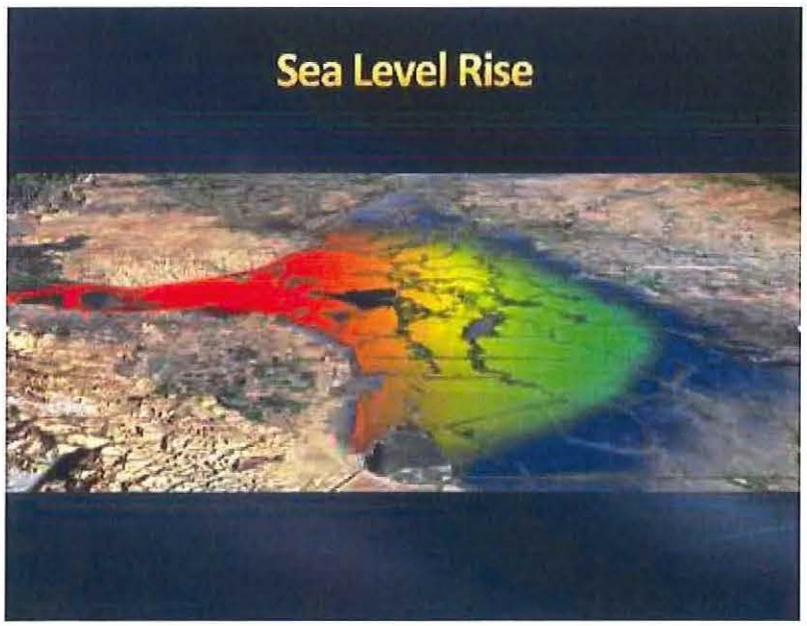


wer warming scenario; and the right hand side is the snowpack projection for 2070 to 2099 under a higher warming scenario.

"*The bottom line is that the based on these pieces of information coming from the state's report, snowpack is projected to decrease by 48 to 65% by the end of this century, so that's another piece of information to take into account*," he said.



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UPCOMING EVENTS

JUL 11 Thu

9:00 am Delta Independent Science Board @ Park Tower (https://cawaterlibrary.net/event/delta-independent-science-board-14/?instance_id=5798)

11:00 am Frank's Tract Futures (https://cawaterlibrary.net/event/franks-tract-futures/?instance_id=5806)

11:00 am WEBINAR/SEMINAR: Multivalent

years and there's a trend that's forecasted to accelerate in the next 100 years. In the past, staff has discussed what this means in terms of salinity intrusion, risks to levees, and the export pumps at the south end of the Delta. With previous planning efforts for Delta conveyance, they used a 55" projection for sea level rise at the Golden Gate by the year 2100.

However, the latest projections from the Ocean Protection Council that are recommended to be guidance, the high end estimate is about 2 times as much, or about 10 feet of sea level rise. If there are areas or infrastructure that can adjust either physically or otherwise to the projected sea level rise, the guidance is to plan for 3 feet, but for infrastructure that is high risk and has little chance of adapting, the guidance is to use the guidance of 10 feet.

"*We think that the state will be looking at how to do these kinds of studies as its involved in Delta conveyance planning now,*" Mr. Arakawa said. "*Staff will be very hooked in to how that will work, because we think that new studies for sea level rise given this guidance are necessities so it's important to recognize that the Ocean Protection Council recommendations will inform these kinds of efforts and studies.*"

There are a lot of potential water resource impacts to climate change: river flow, snowpack, floods, drought, water quality, Delta levees, habitat, groundwater, and hydroelectric power, so these are the kinds of water resource impacts that the state will be taking into account when they look at a water resiliency approach, he said.

The USGS has recently updated their forecast for seismic risk in the Delta and surrounding areas, and they now predict a 72% chance of a magnitude 6.7 or greater in the next 30 years, Mr. Arakawa said.

He presented an animation that shows what the effect of an earthquake of that size could have on the Delta based on work done by the state around 2008. The animation shows that up

Sto... (https://cawaterlibrary.net/event/storms-seminar-multivalent-stormwater-actions-in-an-era-of-climate-change/?instance_id=5756)

JUL 12 Fri

all-day Summer recess for legislature be... (https://cawaterlibrary.net/event/summer-recess-for-legislature-begins-upon-adjournment/?instance_id=5463)

9:30 am PUBLIC MEETING: Preview and Disc... @ Cal EPA Headquarters (https://cawaterlibrary.net/event/public-meeting-preview-and-discussion-of-open-and-transparent-

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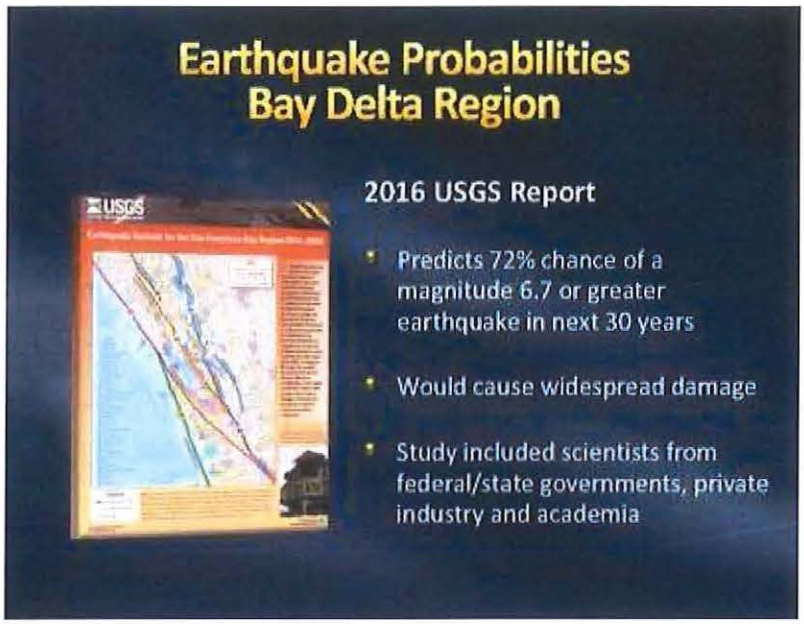


Delta could fail if it occurred July 1 through July 10, and what that would mean to salinity in the Delta; the animation shows that within 2 to 3 days, that salt water has made its way down to the export pumps in the south Delta.

"*With Delta conveyance, the key is to make sure that the intakes are located farther upstream on the Sacramento River, so if there was a major earthquake, you would have a diversion point that would be protected from that seawater intrusion*," he said.

Elements of a statewide water resilience portfolio

Mr. Arakawa then turned to the elements that would go into a statewide portfolio for water resilience, noting that the approach is similar to the approach Metropolitan has been using in its Integrated Regional Portfolio.

The Executive Order issued on April 29 was a policy directive to develop a water resilience portfolio working with different agencies to adapt to climate change, to meet the needs of California's economy and environment through the 21st century, and to assess the current planning to modernize conveyance. The principles that have been outlined include

water-data-platform-features/?instance_id=5796)

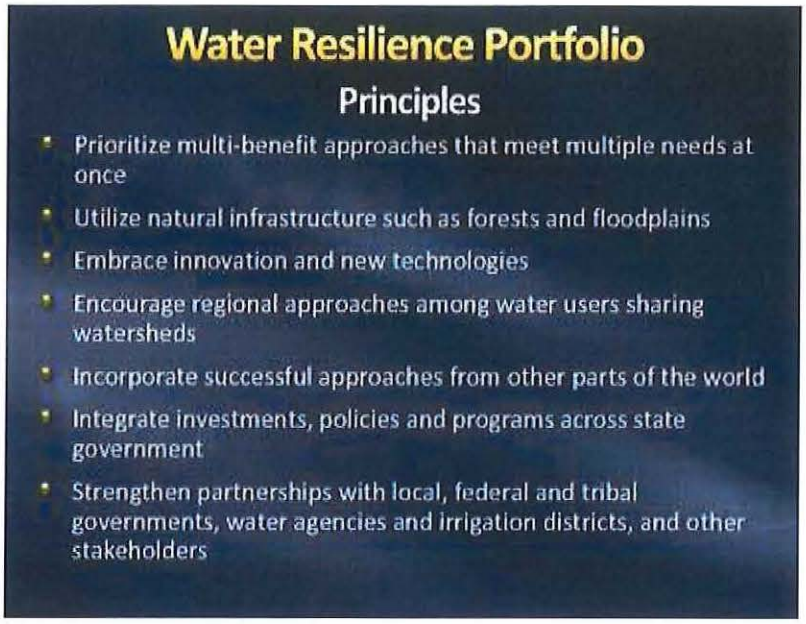
JUL 15 Mon

11:00 am Delta Plan Interagency Implement... @ Tsakapoulos Library Galleria (https://cawaterlibrary.net/event/delta-plan-interagency-implementation-committee-listening-session/?instance_id=5790)

12:30 pm Secretary Crowfoot Speaker Serie... @ Natural Resources Building (https://cawaterlibrary.net/event/secretary-crowfoot-speaker-series-reactivating-our-floodplains/?instance_id=5781)

JUL 16

all-day Watershed



multi-benefit approaches that can meet multiple needs, utilizing natural infrastructure like floodplains and managing the watersheds and the forests. It also includes embracing innovation and new technologies.

Another principle is emphasizing regional approaches, which in many ways, California has already been working over the last 30 years on regional approaches to allow for better water management. Other principles include incorporating examples from other parts of the world that have been successful, integrating investments and policies across state government, and strengthening partnerships with local, federal, tribal governments, water agencies, and stakeholders.

The elements of a water portfolio would build on programs and policies and investments in place, which likely means recycling, water conservation, stormwater capture, groundwater recharge, and as well as Delta conveyance, he said.

"*The Governor's communications have stated that modernizing the Delta conveyance is needed as part of an approach for California and he's directed his team to take steps to advance a single tunnel approach, strategically designed and located to deliver water through the Delta*," Mr. Arakawa said. "*The*

Tue

University: 2019 Summit @ Los Angeles River Center & Gardens (https://cawaterlibrary.net/event/watershed-university-2019-summit/?instance_id=5776)

9:30 am State Water Resources Control Board @ Cal EPA Headquarters (https://cawaterlibrary.net/event/state-water-resources-control-board-81/?instance_id=5309)

JUL
17
Wed

12:00 pm WEBINAR: Toward a New Storage Pa... (https://cawaterlibrary.net/event/webinar-toward-a-new-storage-paradigm-in-the-chino-basin/?

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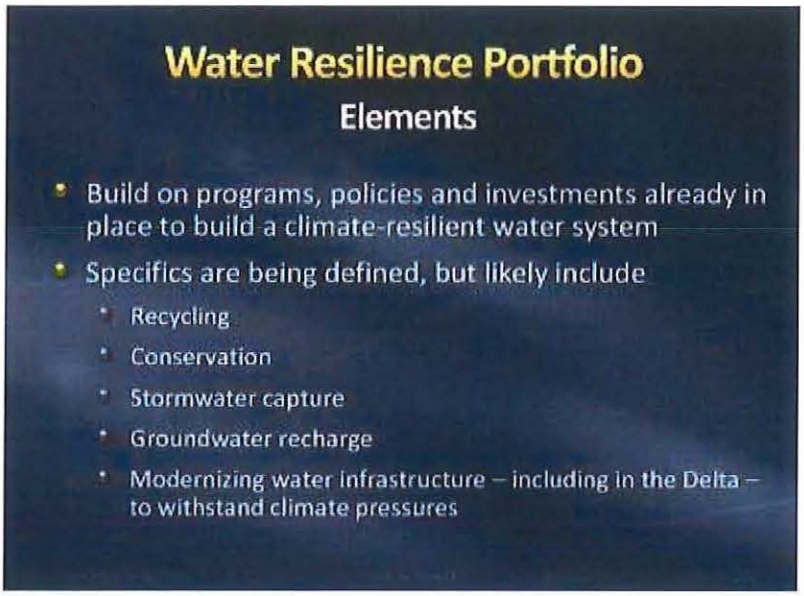


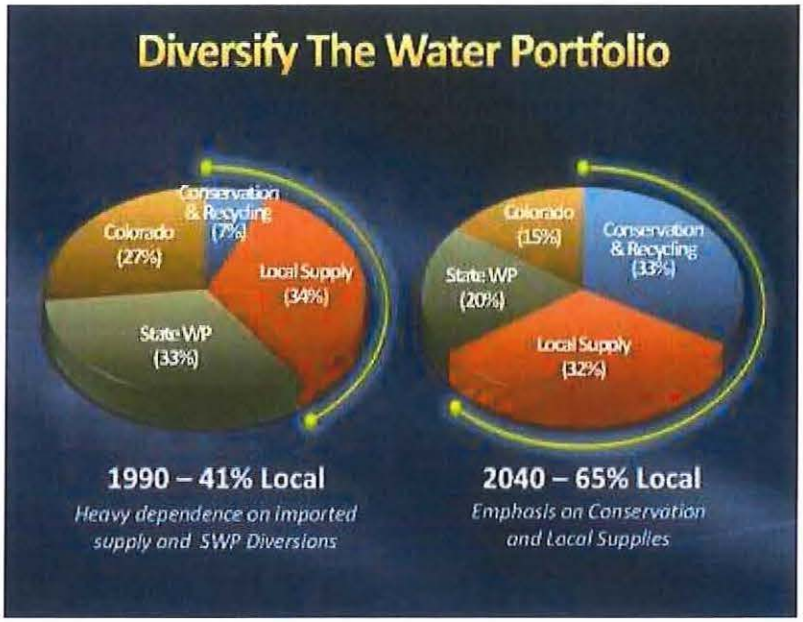
ment of Water Resources is beginning to do a lot of work to pursue this, but the state has also made it pretty clear that it's a state administration effort, so California Natural Resources Agency, Cal EPA, and California Department of Food and Agriculture are other agencies that are involved in all of this effort for both portfolio and how they would advance the Delta conveyance planning efforts."

The state is currently soliciting input with a September 1st deadline, and Metropolitan will certainly be organizing and developing our comments on climate resilient water systems and providing that feedback to the state by the deadline. The state is planning on having meetings throughout the state, and working with different entities, including universities, community organizations, and agencies to hold workshops and listening sessions, some of which have already occurred.

Metropolitan has pursued a portfolio approach since the 1990s. The first Integrated Resources Plan was completed in 1996 which advanced a policy framework for how Metropolitan would help support and pursue different ways of developing water supply and water conservation. It has been updated about every 5 years thereafter; the next update is due in 2020.

The 2015 IRP plan continues to build upon diversification to allow for development of local water supplies and to expand water conservation efforts. "*Our key objectives are to maintain the Colorado River supplies at about 900,000 acre-feet, counting on the programs that have been developed with our partners, the Imperial Irrigation District, Palo Verde and others*," he said. "*And on the State Water Project as we've talked about Water Fix in the past, and how that fits with the IRP, our objective has been to maintain a supply of 1.2 MAF which is about the capability of the system with the existing regulations, the State Water Board requirements, and the biological opinions. Our interest and objective has been to try to maintain that supply and to be able to manage water within that.*"

From 1990 to 2040, the existing approach of the IRP is to greatly increase the capability to count on local supplies. In 1990, Metropolitan's estimated reliance on local supplies was about 41%; the IRP approach moves to 65% local supplies by the year 2040.



DELTA CONVEYANCE PLANNING PROCESS

Mr. Arakawa began by presenting the slide of the estimated timeline for 2019 to 2022. "*We anticipate that negotiations on cost allocation will occur in the remaining part of this year, and the Notice of Preparation on the environmental process could occur in the fall or later part of the calendar year of 2019*," he said. "*Then we'd have about 2 to 3 years of environmental*

planning process to get to completion of the environmental document and permits for Delta conveyance."

Mr. Arakawa noted that the Delta Conveyance Design and Construction Authority had a contract with the state of California to design and construct the California Water Fix, but with California Water Fix no longer being pursued, there was a need to amend that joint exercise of powers agreement between the state and the JPA to allow for the support from the JPA for the engineering and other types of technical work that would help to inform the environmental document. So at their June meeting, the Authority gave approval to the Executive Director the ability to finish that agreement with the state.

He also reminded that back in 2018, there were public negotiations that occurred between the State Water Project contractors and the Department of Water Resources on the cost allocation for Water Fix and on provisions that would be added to the contract for water transfers and exchanges to provide more flexibility to enhance abilities to manage water between contractors; those negotiations were completed with an agreement in principle.

However, with the Cal Water Fix not being pursued, there was a public negotiation in May of this year to essentially take out the Cal Water Fix allocation part of that, and leave behind the Agreement in Principles regarding water transfers and exchanges, so those provisions will continue on, he said. He noted that an environmental document has been developed and circulated, and there will be another circulation to complete that environmental document for water transfers and exchanges to complete that process now that Water Fix has been rescinded.

"*In 2019, the state has a goal of initiating negotiations on Delta conveyance and on cost allocation, so we anticipate those discussions could begin as early as July,*" said Mr. Arakawa. "*It would be essentially to have public negotiations on a cost*

allocation approach. Certainly the cost allocation approach and commitments from individual agencies would need to converge with what the specific project is, but negotiations, if it starts in July, would be about what's the methodology and cost allocation approach with regard to how the cost of new Delta conveyance would be allocated between contractors and how that would work with a contract amendment between DWR and individual contractors."

At the June meeting of the Delta Conceyance Design and Construction Authority, there was an action to authorize the execution of amendment between the state and the Joint Powers Authority to allow for that joint exercise of powers agreement to include in its scope the ability to provide technical support services for the environmental planning process. It also approved a scope of services, an amendment to a contract with Jacobs Engineering; there was an existing Jacobs Engineering agreement, but that scope was amended to align with the new planning and environmental support services that are necessary for this environmental process. They approved a budget of for the 2019-2020 budget year of $98 million, and they authorized the Executive Director to negotiate and execute a lease for office space in the downtown Sacramento area. They authorized some amendments to the bylaws for some administrative management needs."

DISCUSSION HIGHLIGHTS

Director Lefevre notes that slide 5 shows the deterioration of the Sierra snowpack. He noted that previously, staff has shown that with a 9,000 cfs conveyance, they would have been able to grab roughly 800,000 acre-feet more water than we could in 2013. "*My point is that we need to be sure that whatever we get for a conveyance, we need to have a significant sized conveyance, because otherwise we're going to lose a lot of water in the out years, 2070-2099, and I'm just not sure that*

we're paying enough attention to the grabbing of the water when we size the conveyance."

"*What we've always known here, there's good news and bad news with climate change*," said General Manager Jeffrey Kightlinger. "*The good news for California is that the models aren't showing a significant loss of precipitation like they are in other parts of the world; certainly on the Colorado River, models are predicting a significant loss of precipitation. The bad news is it is going from snow to rain which puts an incredible emphasis on the ability to capture and move it, and that's really that conveyance. The bottleneck in moving water is the Delta, and until we get some sort of conveyance solution of some preferred approach to it, there's just simply isn't the ability to move and capture that water.*"

Director Brett Barbre asked what has been the sea level rise at the Golden Gate Bridge in the last 100 years?

"*About 6 ½ inches, I think*," answered Assistant General Manager Roger Patterson.

"*6 ½ inches and yet by law, we have to now plan for 10 feet of ocean rise? Ok*," said Director Barbre. "*On slide 14, it talks about stormwater capture, would surface storage qualify under that, because it seems to me 15 MAF is our snowpack, and if that's going away, we need to replace that with surface storage? Does the Governor recognize that if these climate change predictions come true, that we are going to need to significantly increase our stormwater capture in surface storage, so we can then save it and put it in our groundwater basins.*"

"*That is what DWR has talked about*," said Mr. Kightlinger. "*They are looking at the Prop 1 funding that was available, and they are looking at various sites, and they do have an emphasis on increasing surface storage as well as groundwater storage.*"

"*How quickly?*" said Director Barbre. "*We've been trying to finish the State Water Project for 50 years and we're still not*

there." He noted that Metropolitan build Diamond Valley Lake in ten years.

BAY DELTA MANAGER REPORT

Roger Patterson gave an update on the voluntary agreements, noting that the next date for an update was June 30. (And look, here it is!)

Mr. Patterson also said the new biological opinions are due shortly. There is an accompanying NEPA process, so an Environmental Impact Statement will also be released. The tentative schedule is to finalize the EIS and have a Record of Decision in December.

"*Expect it to cause quite a stir, because everybody has been waiting for these and everyone has their theory on what they are going to look like*," he said.

At the same time, Mr. Patterson noted that there is a parallel process going on at the state that will lead to a new permit from the Cal Fish and Wildlife by the end of the year as well. "*Our concern is that we make sure that these are synced up in the key areas where there is operating criteria because we operate under the congressionally-authorized coordinated operations agreement for the federal and state projects, and you cannot have a permit that says operate Old and Middle River reverse flows to 2000 in one permit and 5000 in the other*," he said. "*It doesn't work. The challenge will be to make sure that we can get coordinated on those primary issues where the two projects have to be together. In some areas, habitat or some of the science elements could be a little bit different, but certain pieces of it are going to have to be coordinated and going to have to work together, so that will be fun to work on over next 6 months*."

Mr. Patterson also noted that in the current smelt biological opinion, in a wet year such as this one, there is a requirement for increasing outflow in the fall. It's only been triggered one other time. "*There's conversations going on amongst the*

fishery agencies and the operators about what we will be doing this fall on that," he said. "*It will probably be a little bit of a difficult conversation before we ultimately get a plan, but we started about 2 months earlier than we did the last time, so we have a little bit more working time.*"

FOR MORE INFORMATION ...

- For the agenda, meeting materials, and webcast for the June meeting of Metropolitan's Special Committee on the Bay Delta, click here.

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IV. C

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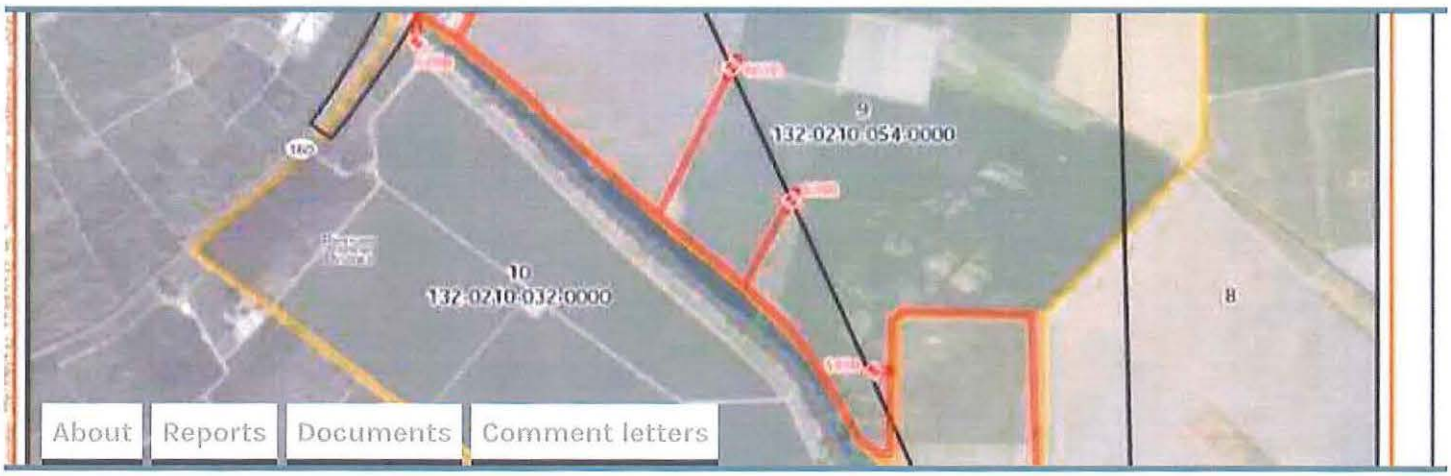

DWR rushes to complete geotechnical drilling in WaterFix project alignment

Posted by: **Deirdre Des Jardins** | July 1, 2019

On June 10, 2019, the Department of Water Resources (DWR) began extensive geotechnical drilling to evaluate a single tunnel project in the WaterFix project alignment. The drilling is currently suspended, pending resolution of a Temporary Restraining Order issued by Sacramento Superior Court at the request of Sacramento County. The work is being done without required county permits to protect groundwater.

The geotechnical work was ordered by the Delta Conveyance Design and Construction Authority (DCA) ahead of a July 31, 2019 deadline to complete work under a court Order of Entry that DWR initially obtained in June of 2017. Boring locations in the court order include the WaterFix North tunnel leading from Intake #5, and the WaterFix main tunnel alignment on Venice Island and Victoria Island in the South Delta. The boreholes are 6.5 to 8 inches in diameter and 150 to 200 feet deep.

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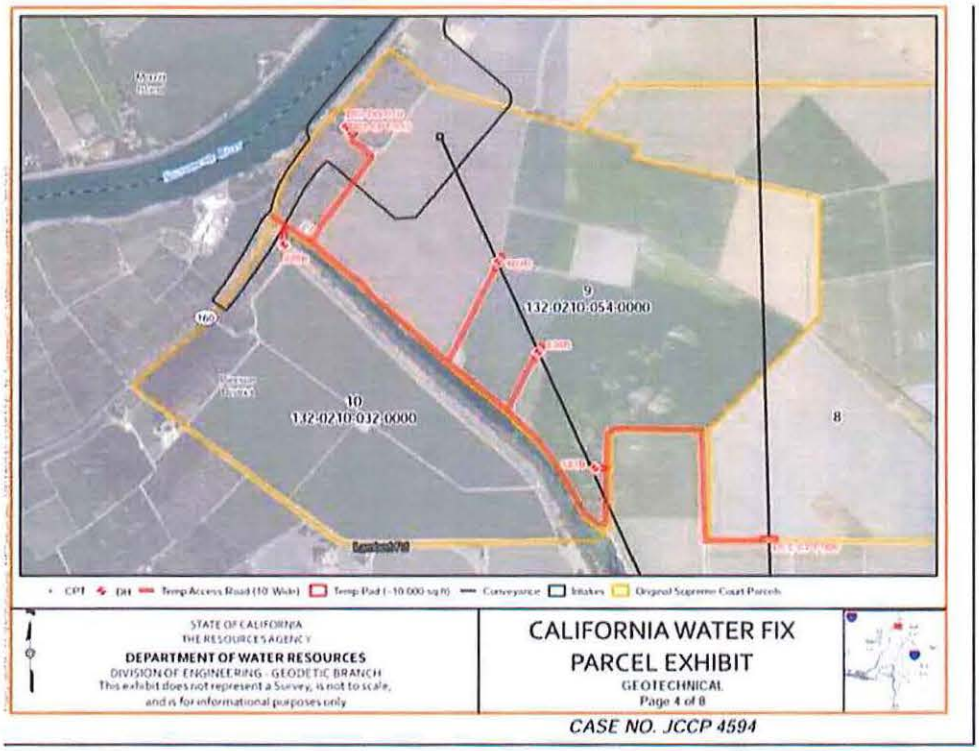

According to DWR's May 22, 2019 environmental document for the drilling, the geotechnical work is being done is to complete geotechnical exploration in the WaterFix project tunnel alignment that began in 2010 and 2011. The geotechnical work is part of ongoing work under contracts executed in January of 2019 for the WaterFix project. The DCA signed a $93 million contract with Jacobs Engineering in January of 2019 for engineering design, and a $75 million contract with Fugro for geotechnical services.

Controversy over the geotechnical work

When the geotechnical drilling crews arrived in the Delta, DWR employees distributed flyers characterizing the work as "soil sampling" to "investigate alternative conveyance types and alignment locations." Delta residents were outraged. Delta community and business groups sent a letter to DWR Director Karla Nemeth on June 12, stating

> Allowing the Delta Conveyance Design and Construction Authority ("DCA") to continue preliminary design, survey and right of way mapping, and real estate acquisition planning based on the withdrawn WaterFix project specifications is wholly unacceptable to our communities. To our knowledge, DWR has no approved plans or specifications for the new Delta conveyance. And if the WaterFix project specifications are being used as the basis for the design of the new Delta conveyance under DWR's authority, it is predecisional and will prejudice the new Delta conveyance CEQA process.

Gary Lippner, DWR's Deputy Director of Delta Conveyance, responded on June 17, 2019 stating that "[n]either the Department of Water Resources (DWR) nor the Delta Conveyance Design and Construction Authority (DCA)

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is continuing work on that project or currently performing any new planning based on the previous WaterFix approvals."

Kathryn Mallon, the Delta Conveyance Design and Construction Authority Executive Director, has since clarified that the current geotechnical work is being done in support of a single tunnel in the WaterFix project tunnel alignment. She stated that the work is needed to "support the preferred alignment of the previous planning work and [is] necessary to answer critical questions related to this particular alternative (eg. pile driving methods and noise levels at the proposed intake locations.)"

With regard to alternative designs, the DCA Executive Director stated,

> The DCA has budgeted for and is in the process of preparing a boring plan that is more geographically expansive and includes collecting information in corridors for alternatives that are expected to evolve from the NEPA process, including the previously preferred alternative but not limited to this alternative.

According to the DCA's Fiscal Year 2019-2020 budget, the DCA is planning to spend $82 million over the next 12 months, including $35 million on engineering design and $20 million on field work ($98 million with contingency.) When the proposed 2019-2020 budget was released on June 17, Delta community and business groups expressed shock at DWR's approval of the aggressive schedule, stating:

> We strongly disagree with this approach of rushing forward with engineering design and geotechnical work. The way to mitigate impacts of the project on Delta legacy communities and fish is to first reconsider the project design in consultation with Delta stakeholders. This process must start with DWR addressing the requirements of the Delta Reform Act to reduce reliance on the Delta, and to restore, enhance, and protect the Delta as an evolving place. Pursuant to the National Historic Preservation Act DWR must also start with an early consultation on historic properties.

The Delta community groups also requested that DWR rescind authorization for the geotechnical work until the appropriate county permits were obtained.

DWR's Deputy Director Lippner and the DCA's Executive Director Kathryn Mallon have offered to meet with the groups to "discuss the planning process and hear their thoughts on local engagement." But DWR's attorneys are simultaneously seeking to continue the geotechnical work without county permits. The Delta Conveyance Design and Construction Authority Board also approved the $82 million budget for Fiscal Year 2019-2020 at the June 20, 2019 meeting, including $55 million for engineering design and field work.