Application No.: 19233

APPLICANT: San Joaquin Area Flood Control Agency (SJAFCA)

PROJECT: Smith Canal Gate Project

Agenda Item: 11 A

ALI PORBAHA
APRIL 26, 2019

Board Action

Consider approval of Permit No. 19233:

To construct a gate between the Smith Canal and the San Joaquin River

Project Location Map

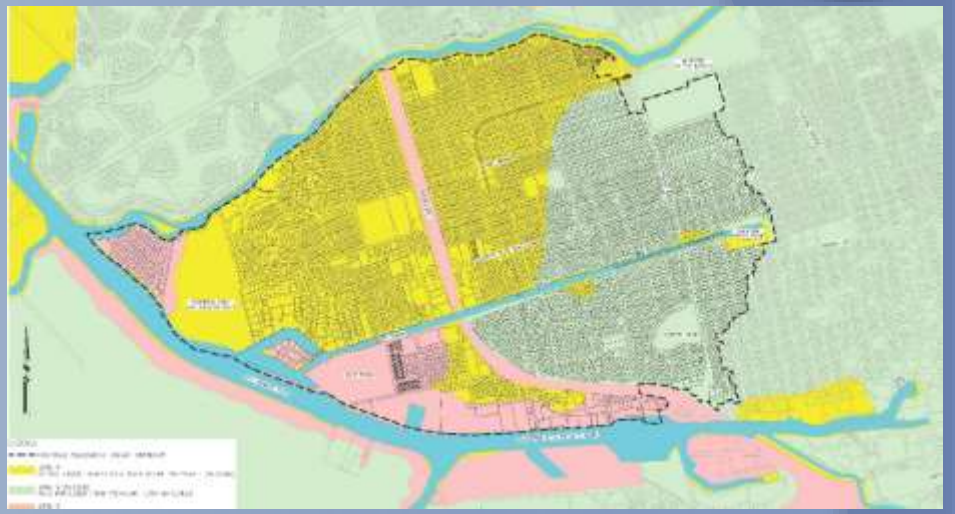
Project Background

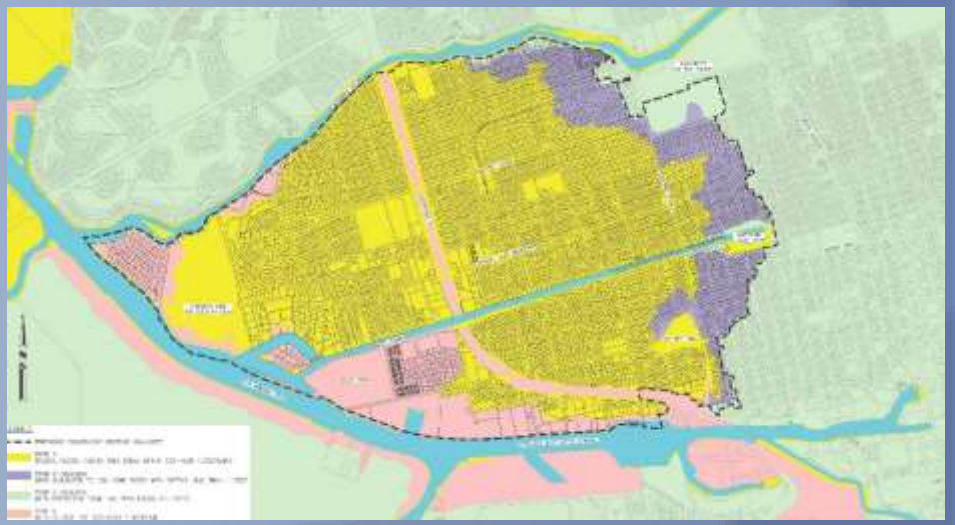
- Built by the State in mid 1800's for sanitary and drainage purposes
- Navigable and Tidally influenced
- Conveys urban runoff
- Leveed to prevent flooding from the Delta
- Levees heavily encroached

Smith Canal Encroachments

Project Benefits

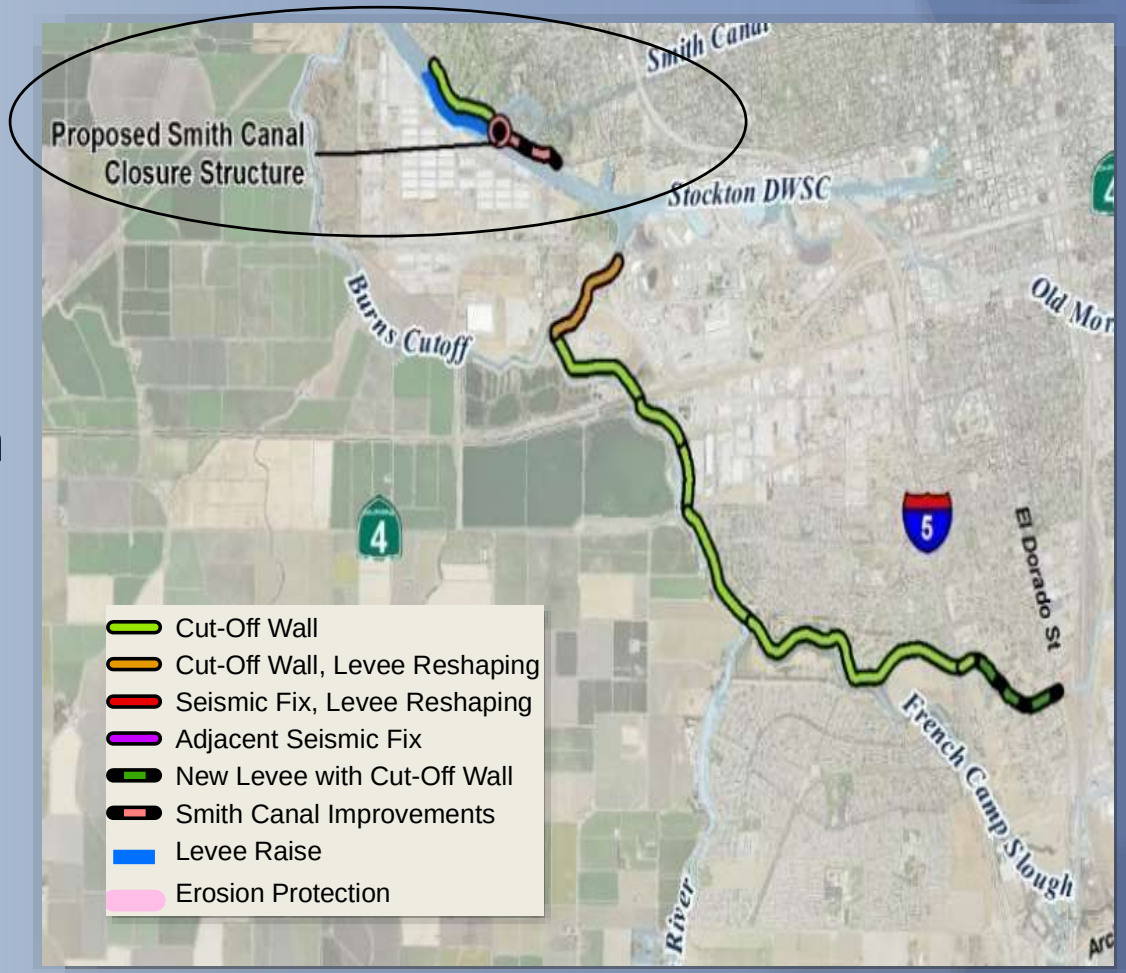
- Project will provide protection for about 8,000 properties.
- Once project is complete, 5,000 properties are expected to be removed from the FEMA 100-year floodplain and additional 3,000 properties will be granted relief from being added to Special Flood Hazard Area.





Federal Interest

- Project is included in the Recommended Plan of the Congressionally authorized Lower San Joaquin River Feasibility Study
- Project proposed to be added to the State Plan of Flood Control system



Authority of the Board

- California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710
- California Code of Regulations, Title 23, Division 1 (Title 23):
- § 6, Need for a Permit
- § 12, Protests
- § 13, Evidentiary Hearings
- § 112, Streams Regulated and Nonpermissible Work Periods
- § 116, Borrow and Excavation Activities – Land and Channel
- § 120, Levees
- § 121, Erosion Control
- § 125, Retaining walls
- § 126, Fences and Gates
- § 130, Patrol Roads and Access Ramps

Hydraulic Review

- **Applicant prepared 5 documents:**
  1. **Smith Canal 100-year Interior Drainage Analysis**
  2. **Basis of Design SJAFCA - Smith Canal Gate Project**
  3. **Smith Canal Gate Project: Gate Operation and Interior Drainage Analysis**
  4. **Smith Canal Gate Structure Velocity Analysis**
  5. **Smith Canal Gate Hydrodynamic Modeling Alignment and Gate Width Evaluation**

Geotechnical Review

- Applicant prepared Geotechnical Design document:
- Analyses performed:
  - Under-seepage Analysis
  - Slope stability Analysis
  - Liquefaction Analysis
  - Lateral spread Analysis
  - Internal and external stability of dual sheet pile wall
  - Lateral and vertical soil capacities for pipe piles.
- Foundation Recommendations (Appendix C)

Impact on SPFC

- Staff has reviewed the findings from the hydraulic and geotechnical reports and concurs with the findings that the proposed project will result in less than significant impacts. Therefore, there are no anticipated adverse impacts to the State Plan of Flood Control system due to the Project.

Protests

- **3 Protests:**
  - **Mr. Michael Gurev**
  - **Mr. Maxwell Freeman**
  - **Mr. Dominick Gulli**

Valid Protests

- CCR Title 23, §12(3): “Protests must be based solely on flood control concerns or, where the Board is acting as the lead agency under CEQA, environmental concerns.” The lead agency for this Project is SJAFCA.
- Board staff sent letters to the protestants requesting them to present their flood related concerns in writing by April 19, 2019.

Protests

- **Responses from the Protestants:**
  - **Mr. Michael Gurev → did not respond**
  - **Mr. Maxwell Freeman → did not respond**
  - **Mr. Dominick Gulli:**
    - **Submitted a letter via e-mail on April 19, 2019 (Staff Report, Attachment D)**
    - **The 12-page letter was accompanied with volumes of attachments submitted this week**
    - **Review of the submitted materials did not change the staff recommendation to the Board which is to consider approving the draft permit**

Agency Comments

- There are no federal levees at project site
- The USACE South Pacific Division and South Pacific Navigation Division are coordinating to complete their outgrant process which will result in a signed lease agreement to use USACE property for this project. (Attachment F)
- Staff reviewed endorsement letters from San Joaquin County and RD 1614

CEQA Findings

- **Staff has prepared a CEQA analysis, as included in the Staff Report (Section 8.0).**

Section 8610.5 Considerations

- Staff has prepared the California Water Code Section 8610.5 Considerations, as included in the Staff Report (Section 9.0)

Staff Recommendation

Staff recommends that the Board:

- **Adopt: The CEQA findings: The Board, acting as a responsible agency under CEQA, has independently reviewed and considered the environmental documents prepared for the project. Approving Permit No. 19233 would not result in any significant adverse impacts related to flood risk, and no additional mitigation measures within the Board's jurisdiction are required; and**

Staff Recommendation

Staff recommends that the Board:

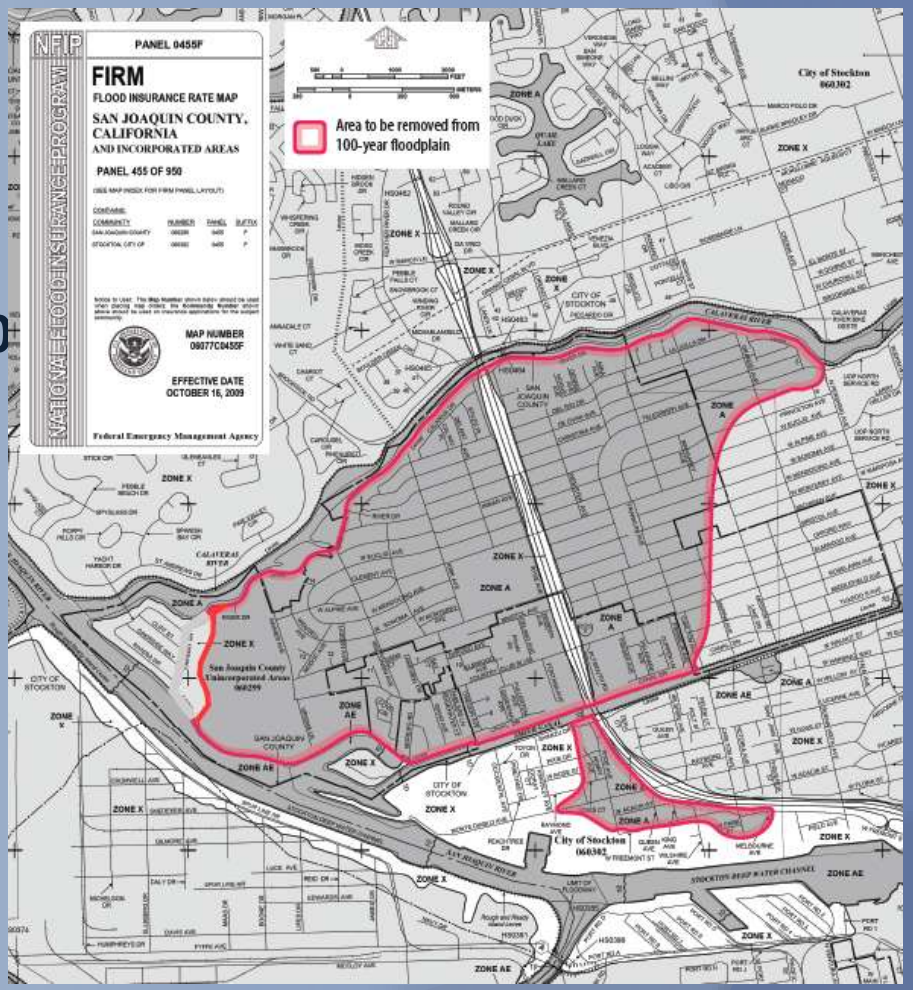
- **Approve: Draft Encroachment Permit No. 19233 in substantially the form provided in Attachment A; and**

- **Direct: The Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination pursuant to CEQA with the State Clearinghouse.**

Thank You

Project Benefits

- **Project will provide protection for about 8,000 properties.**
  - **Once project is complete, 5,000 properties is expected to be removed from the FEMA 100-year floodplain and additional 3,000 properties will be granted relief from being added to Special Flood Hazard Area.**



Mr. Gulli's Letter of 4/19/2019

1. The flood project is not needed as the levee's meet the requirements of CFR.65.10 (sans interior drainage).
2. The project will raise the flood stage upstream of the Gate when the Gate is closed and the Smith Canal Regulatory flood way is closed off.
3. The project introduces in excess of 13,000 cy's of fill (Steel Sheetpiles, granular fill and rip Rap) in the regulatory flood way, which will raise the flood stage.
4. (RFJN #160 2009 FEMA Flood Insurance Study Vol 4 plate 83P San Joaquin River profile) shows a hydraulic jump at this location which will be amplified, signifigantly with the fill, the closure of the Gate and the reduction of flow into the Smith Canal Floodway.
5. The project will increase interior drainage deficiencies and cause flooding when the Gate is Closed and it rains in Stockton and the Numerous Pump Stations cannot discharge into the Smith Canal.

Mr. Gulli's Letter of 4/19/2019

6. (RFJN # 185 6/27/08 Smith Canal Conceptualization) for this project indicated a 203,500 GPM pump was required to address this backflooding issue.
7. The reduction of the Existing Athernton Cove from 800 ft. to 50 ft. will reduce the ability of the Smith Canal Drainage to evacuate water from the Smith Canal as well as water to flow into the Smith Canal Floodway.
8. The project does not comply with the Urban Levee Design Criteria and will require significant improves to achieve.
9. The tie in to the Levee at the Stockton Golf and Country Club needs to be more robust and redundant.
10. This project is on property owned by the United States of America within the Federally Authorized Deep Water Ship Channel and Ship Turning Basin.

Mr. Gulli's Actions Against the Project

- Mr. Gulli has filed lawsuits against SJAFCA regarding the Project.
- In 2015, Mr. Gulli filed a petition for writ of mandate against SJAFCA in San Joaquin County Superior Court alleging, among other things, violations of CEQA, including risk of flood impacts. The petition was denied on August 20, 2018 and Mr. Gulli filed an appeal with the Court of Appeal, which is pending. SJFCA has filed a motion to dismiss the appeal.

Mr. Gulli's Actions Against the Project

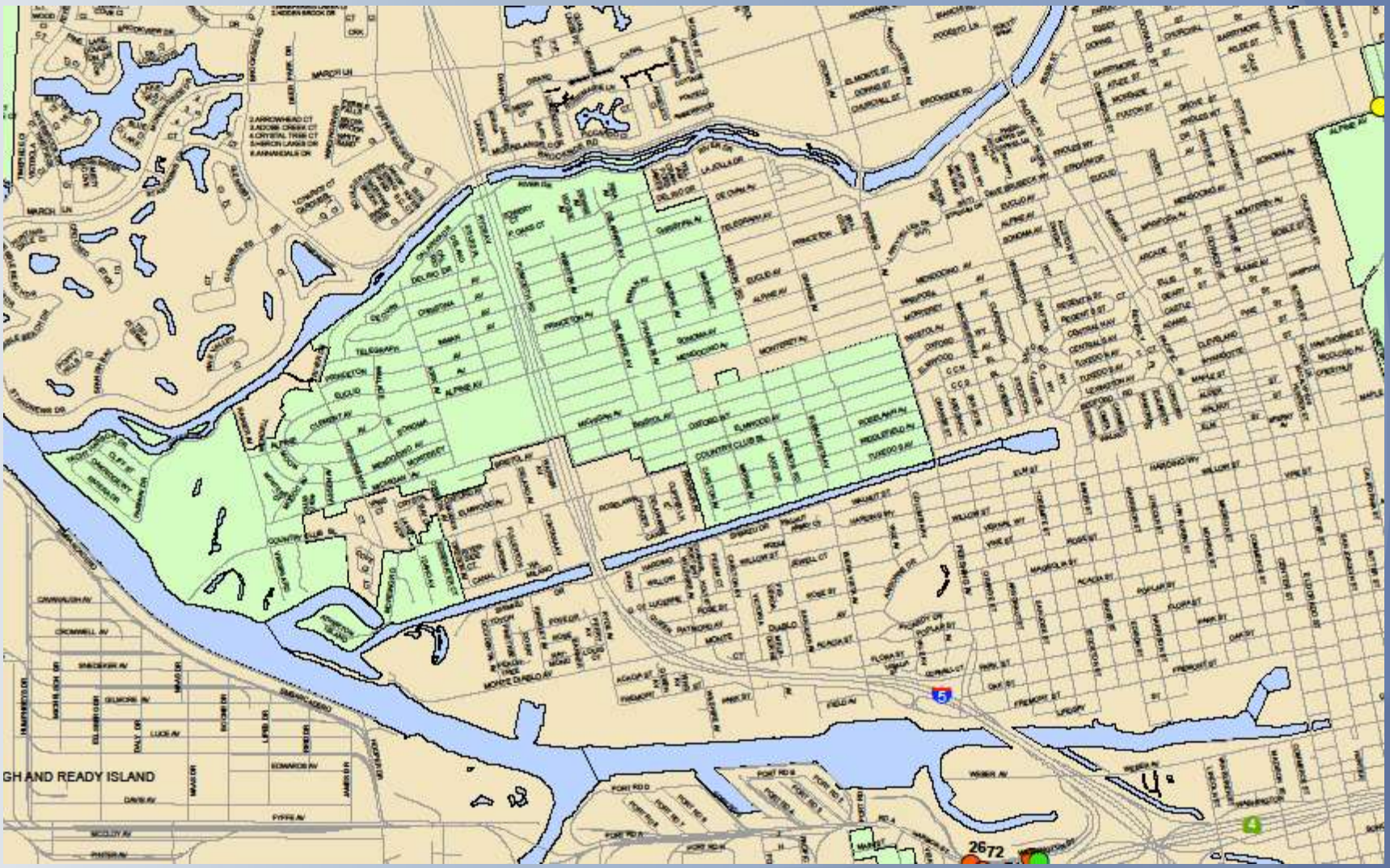
- **Mr. Gulli asserted 9 challenges to the EIR including a claim that the EIR failed to review the flooding impacts that the Project will create. The trial court reviewed this claim and determined that:**

  "Mr. Gulli's mere statement that the FEIR 'fails to analyze the surface water elevation changes' or that the FEIR 'failed to analyze the impacts on the environment' is an insufficient challenge to the adequacy of the EIR's discussion of flood risks. And, Mr. Gulli's differing expert opinions does not render the FEIR legally insufficient."

Mr. Gulli's Actions Against the Project

- Mr. Gulli filed a second petition for writ of mandate against SJAFCA on December 18, 2017 regarding Addendum #1 to SJAFCA's EIR and approval of project changes on November 16, 2017. The petition alleged that SJAFCA violated CEQA by preparing an addendum rather than full subsequent EIR. The case was dismissed on June 14, 2018.

Project Vicinity Map



Hydraulic Review

- **Smith Canal 100-year Interior Drainage Analysis**
  - **Purpose: To quantify and map residual floodplains for the post-project FEMA**
  - **Analysis: HEC RAS 5.0.3 2D model**
  - **Results: The interior drainage system results in minor flooding that the Smith Canal project (when paired with an upgraded Wisconsin Pump station) will remove the Special Flood Hazard Area designation for the region.**

Hydraulic Review

- **Basis of Design SJAFCA - Smith Canal Gate Project**
  - **Purpose: The purpose of the report was to document design criteria to meet the ULDC**
  - **Analysis: Used methods developed by the USACE:**
    - **To calculate the amount of wind induced wave height that would be expected during a 200-year stage event**
    - **To calculate sea level rise interpolated through 2050**
  - **Results: The gate structure is designed to the 200-year stage**

Hydraulic Review

Top of floodwall/gate elevation:

9.5 ft 200-year Water Surface Elevation

\+ 3.0 ft Freeboard Required

\+ 1.1 ft Hydraulic Uncertainty

\+ 1.4 ft Sea Level Rise through 2050 (median projection)

15.0 ft Top of Floodwall and Operable Gate Elevation

Mean WSE = 4.9 ft

Trigger closure when predicted stage ≥ 8.0 ft

Gate open on outgoing tide to release any accumulated storm water once water levels across the gate are equalized.

Hydraulic Review

- **Smith Canal Gate Project: Gate Operation and Interior Drainage Analysis**
  - **Purpose: To examine the concurrence of an interior drainage event with a Delta high-stage (gate-closed) event and predict the maximum stage that would build up in Smith Canal behind the closed gate.**
  - **Analysis: HEC HMS model**
  - **Results: As added resilience, the interior drainage stormwater pumps could be shut down if necessary, with the consequence of minor ponding in the streets. So, the gate does not induce flooding from an interior drainage storm.**

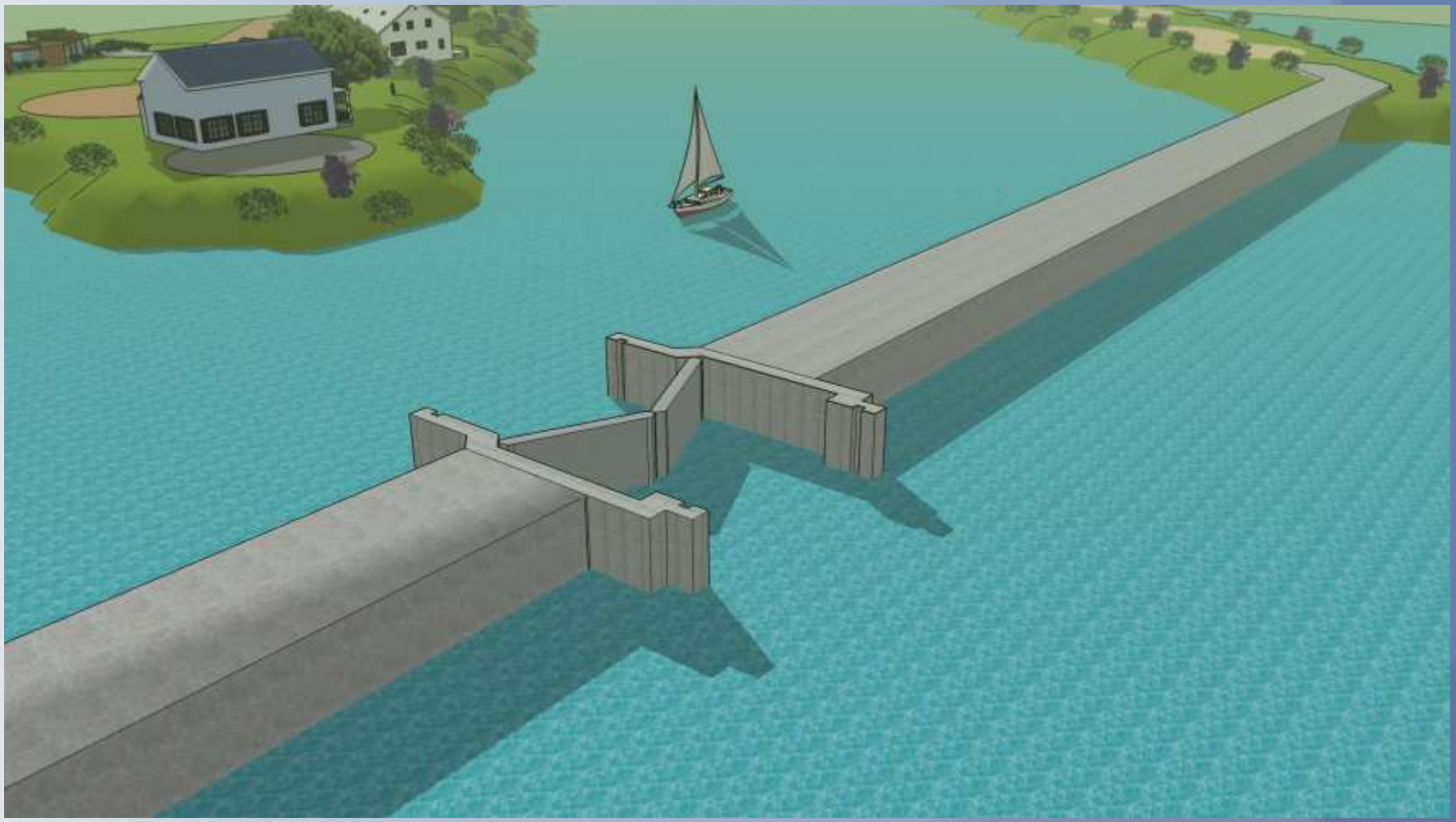
Hydraulic Review

- **Smith Canal Gate Structure Velocity Analysis**
  - **Purpose: To address a resiliency concern from what would happen if the gate were open and a sunny day breach were to occur on the Smith Canal levee due to an unforeseen fragility (e.g. wine cellar, animal den).**
  - **Analysis: HEC RAS 5.0.3**
  - **Results: Demonstrated that if the most critical location along the SC levee were to fail with the gate open, that the maximum velocity through the gate would be 2.3 fps. This velocity was used by the gate designer to make sure the gate could safely close in such an event.**

Hydraulic Review

- **Smith Canal Gate Hydrodynamic Modeling Alignment and Gate Width Evaluation**
  - **Purpose: To perform hydrodynamic evaluation of three proposed closure structure alignments, sensitivity evaluation of gate width for Alignment 1 (preferred Alignment), and evaluation of four Water Quality Improvement Options.**
  - **Analysis: MIKE 21 Model**
  - **Results: Maximum instantaneous velocity through an open gate in the tide cycle was calculated to be 2.4 fps, but that velocities are less than 2.0 fps for 97% of the tide cycle, and less than 1.5 fps for 90% of the tide cycle. The report also concluded that a 50' opening was sufficient to keep impacts less than significant.**

Gate Operation Animation



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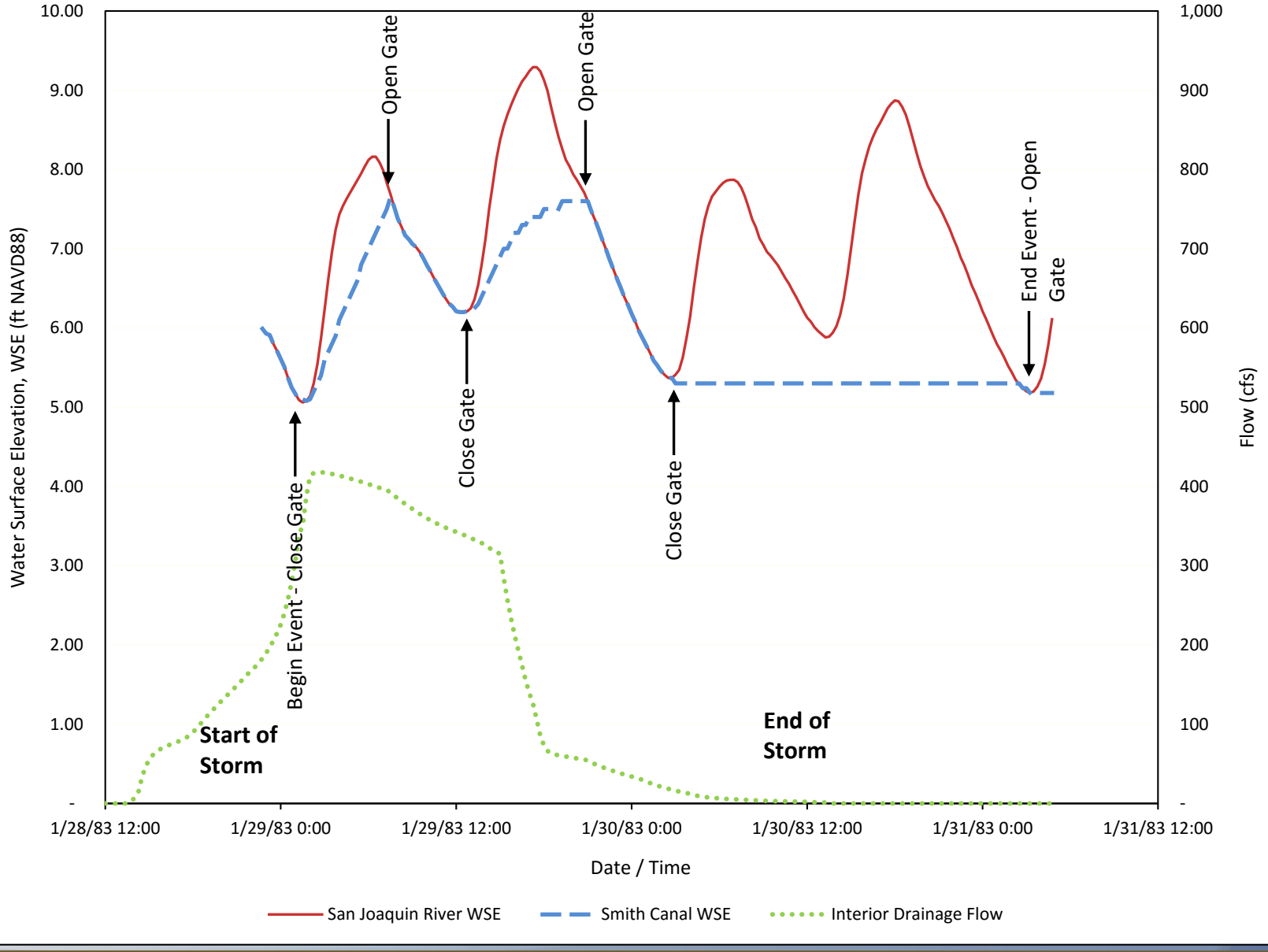
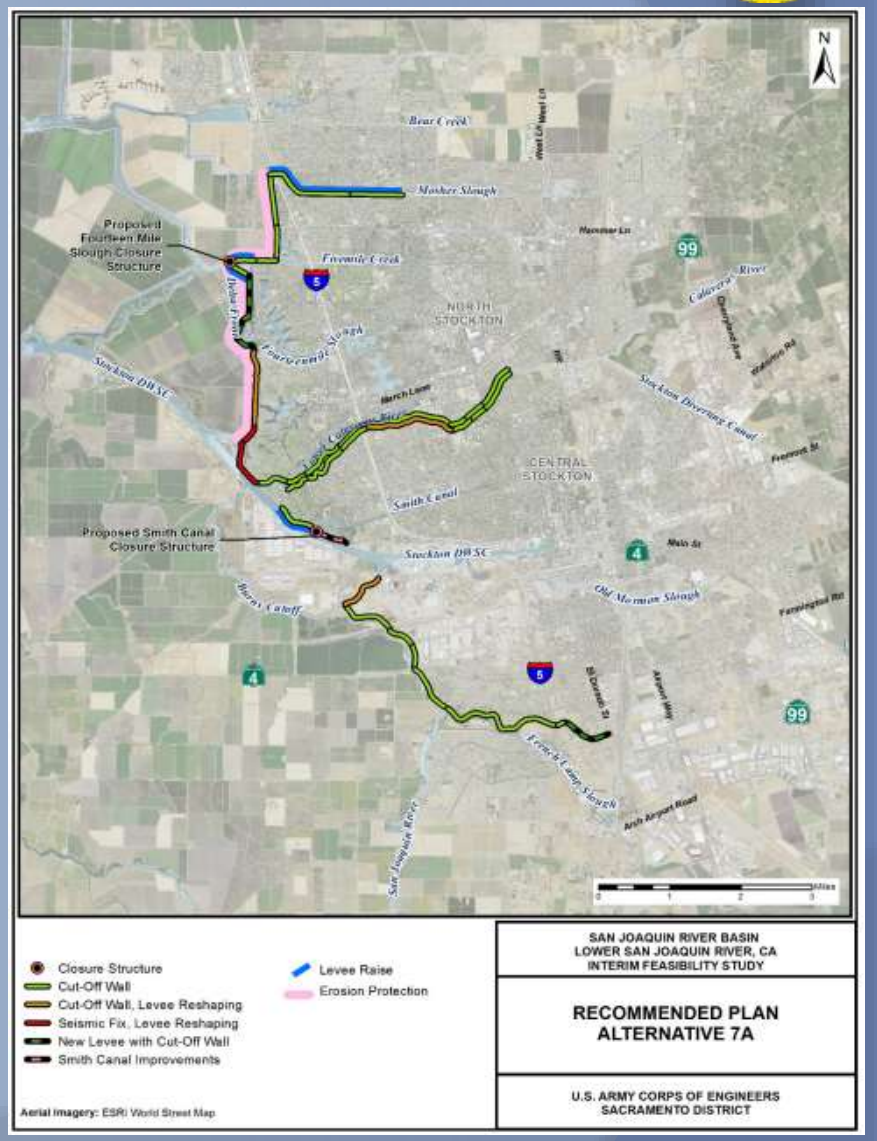
Gate Operation, January 1983 Delta Stage Event + 25yr Storm



Purpose and Need

- Information Only
- Future request for an Encroachment Permit for the Smith Canal Gate Project (Project)
- Project will provide protection for approx. 8,000 properties. Once completed 5,000 properties will be removed from the FEMA 100-year floodplain
- Project is included in the Recommended Plan of the Congressionally authorized Lower San Joaquin River Feasibility Study
- Project proposed to be added to the State Plan of Flood Control



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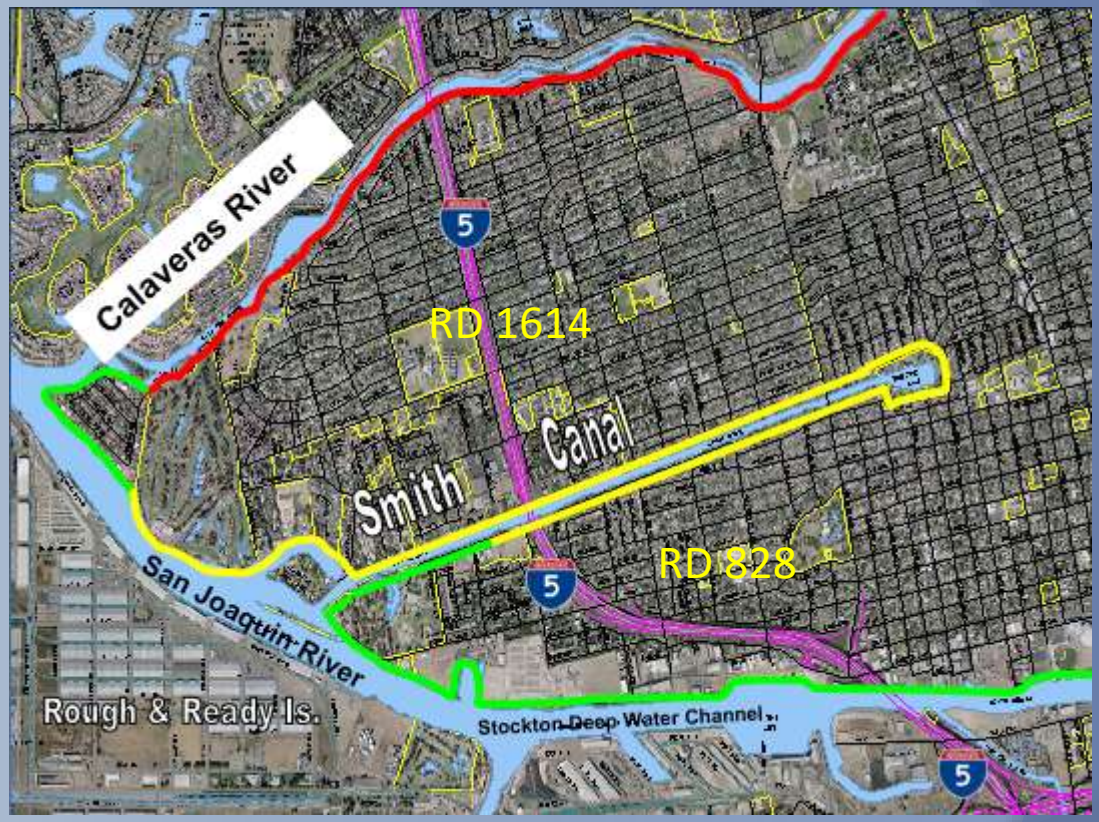

Project levee
Non Project levee
Areas of high ground

SMITH CANAL ENCROACHMENTS

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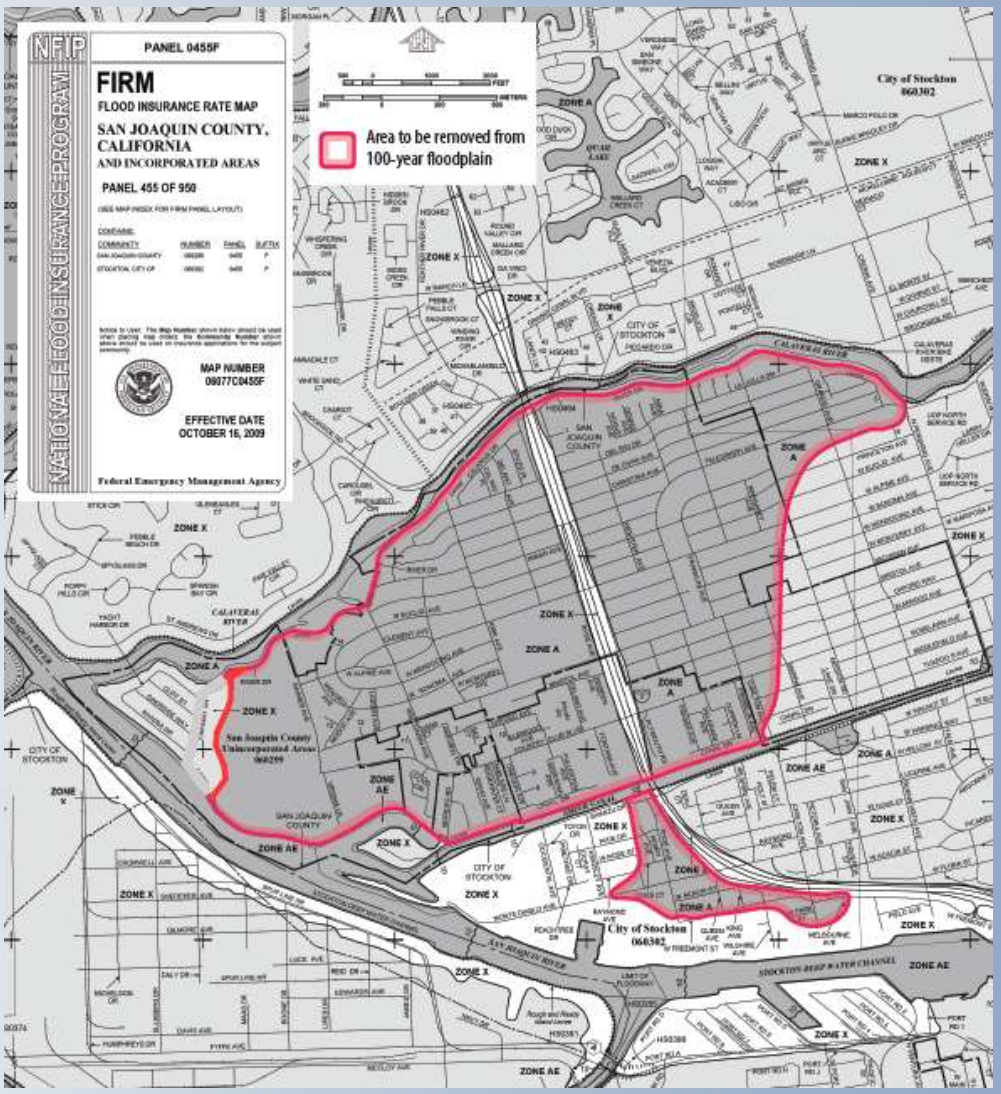
FEMA SPECIAL FLOOD HAZARD AREA



- 5,000 parcels "mapped" in 2009
- Additional 3,000 parcels to be mapped
- Requires mandatory flood insurance
- Building restrictions
  - Elevation for new/replacement construction and significant repairs/remodels

PROJECT HISTORY

2006

- **FEMA requests levee owners to provide documentation showing that their levees could meet Federal certification**

2007

- **RD 1614 and RD 828 determined the Smith Canal levees were not able to meet FEMA certification requirements.**

2009

- **FEMA issued FIRM showing Smith Canal in the Floodplain**
- **At the request of both RDs, SJAFCA evaluated options to restore FEMA accreditation for the area.**
- **SJAFCA requested a CLOMR. FEMA concurred that the gate structure would meet FEMA standards for providing at least 100 year Flood Risk Reduction removing the area from the floodplain.**

2011

- **FEMA issued a CLOMR in 2011**

PROJECT HISTORY (Cont.)

2012

- SJAFCA received an Early Implementation Program (EIP) grant in the amount of $2,412,500 grant for 50% of the project design and environmental analysis.

2013

- SJAFCA formed an assessment district to fund the local share of the project.
- SJAFCA authorized a contract for the Design of Smith Canal Gate Project

2014

- SJAFCA Board approved Contracts for the Independent Panel of Experts (vetted by State and U.S. Army Corps of Engineers)

2015

- SJAFCA certified the Final EIR. Three CEQA lawsuits filed. SJAFCA prevailed in all of them. Two are on appeal.

2017

- An Urban Risk Reduction (UFRR) grant was approved in the amount of $22,309,666 for the engineering and construction

2018

- FEMA re-confirmed CLOMR validity.

PROPOSED PROJECT: FLOODWALL WITH OPERABLE GATE

- Closed when high water event is predicted, open all other times
- Meet FEMA, ULDC standards
- The project is included in:
  - 2012 Central Valley Flood Protection Plan and the 2017 Update
  - San Joaquin River Basin-Wide Feasibility Study
  - Lower San Joaquin/Delta South Regional Flood Management Plan
  - Corps of Engineers' Lower San Joaquin River Feasibility Study
- Proposed to be added to State Plan of Flood Control

PROJECT FEATURES

PROJECT STATUS

- Draft 95% design September 2018
- Independent Panel of Experts and Agency comments incorporated
  - IPE representing DWR and the Corps of Engineers and is providing technical expertise and oversight for design.
  - LMA Endorsements for the Encroachment Permit received from:
    - RD 1614
    - San Joaquin County Flood Control and Water Conservation District
- ROW acquisition underway
- Design scheduled completion November 2018
- Bidding *2019*
- Construction *2019-2020*
- <u>Encroachment Permit Application will be a future Board consideration</u>
- <u>Proposed to be added to State Plan of Flood Control</u>

QUESTIONS

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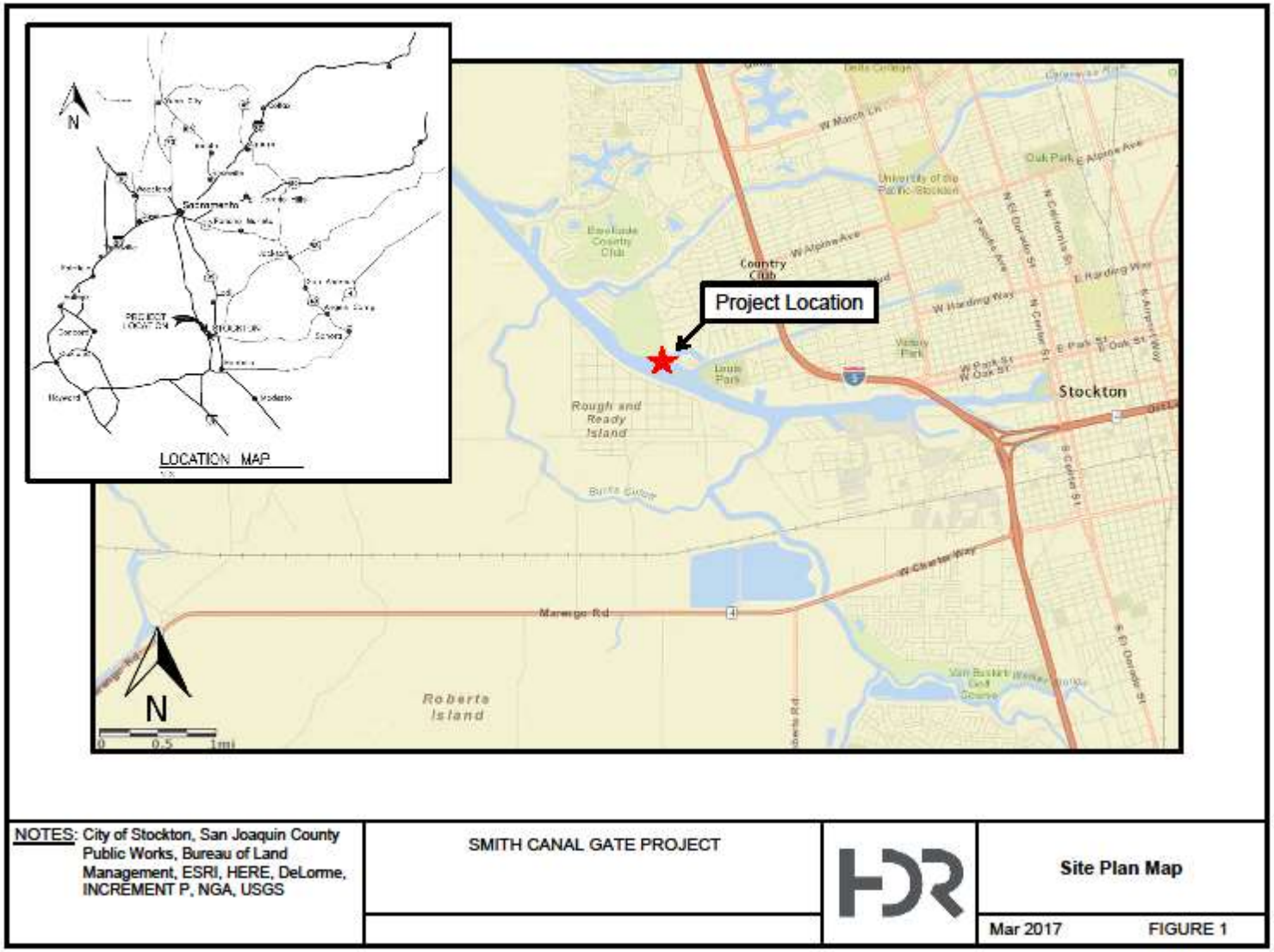
Project Location Map



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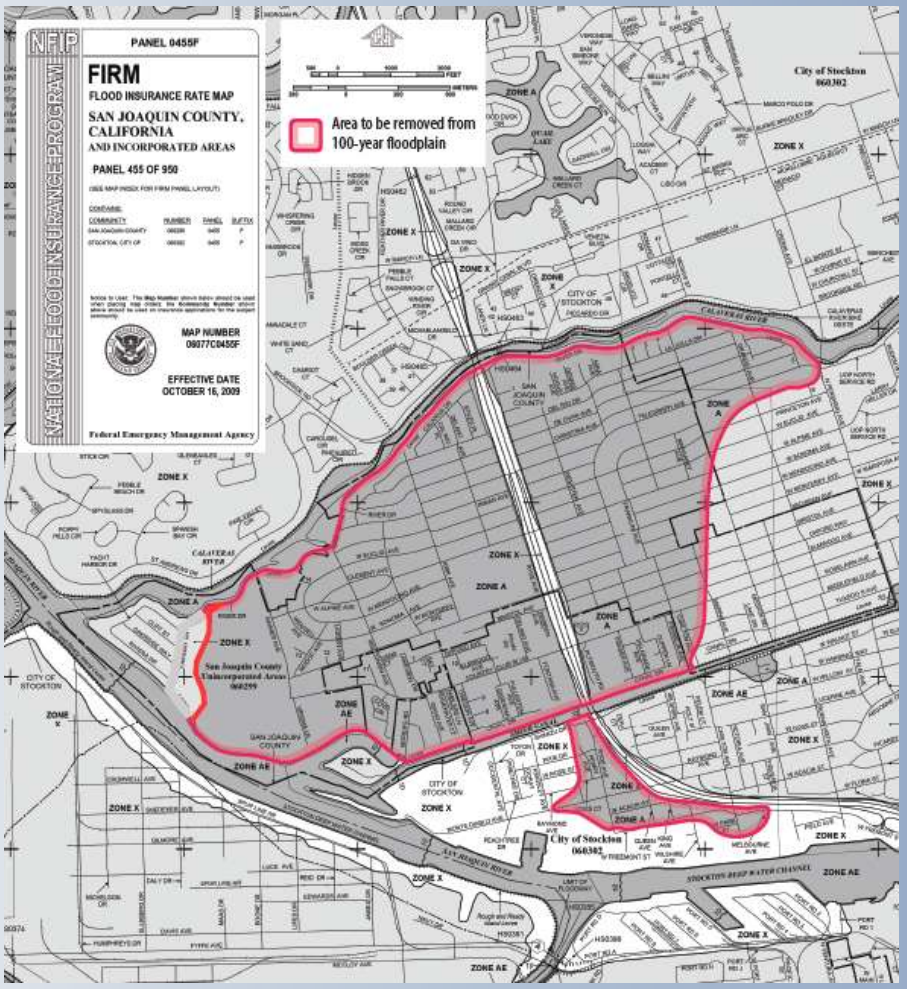

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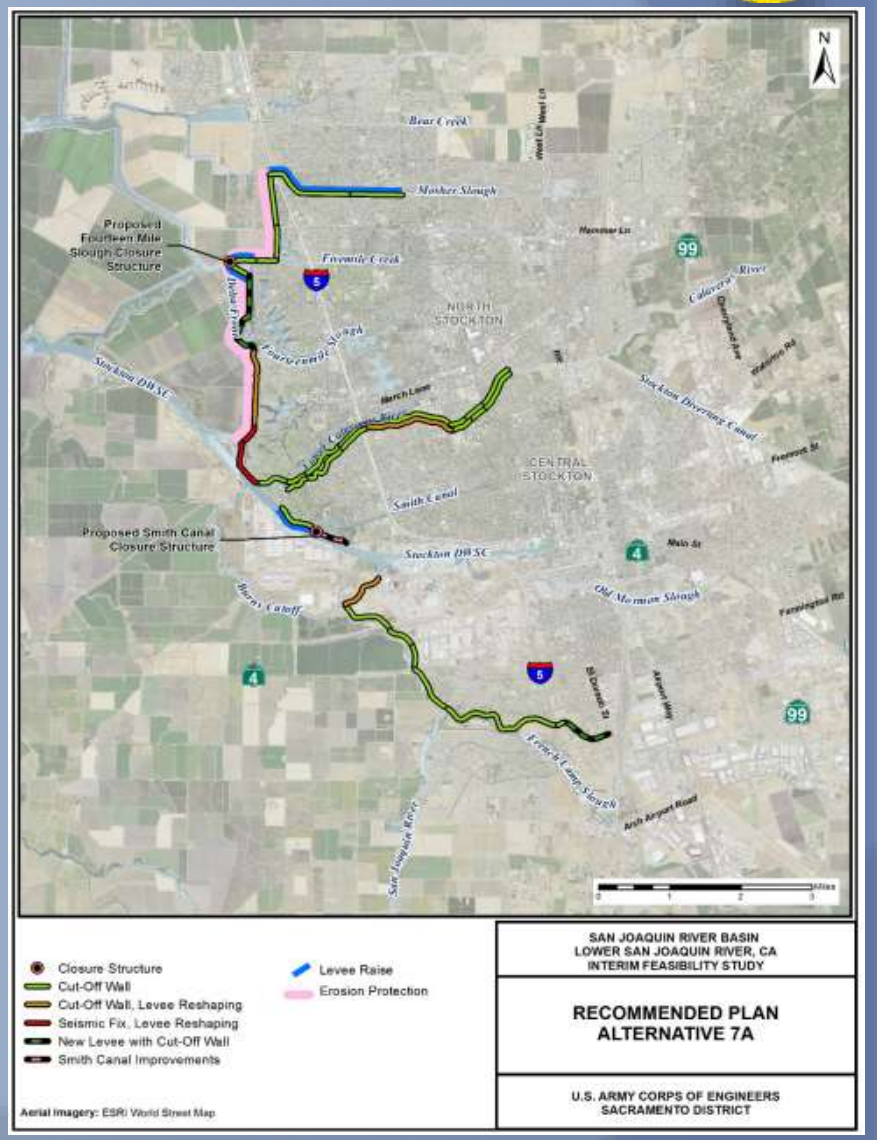

Actions Against the Project

- **DSC Final decision???**