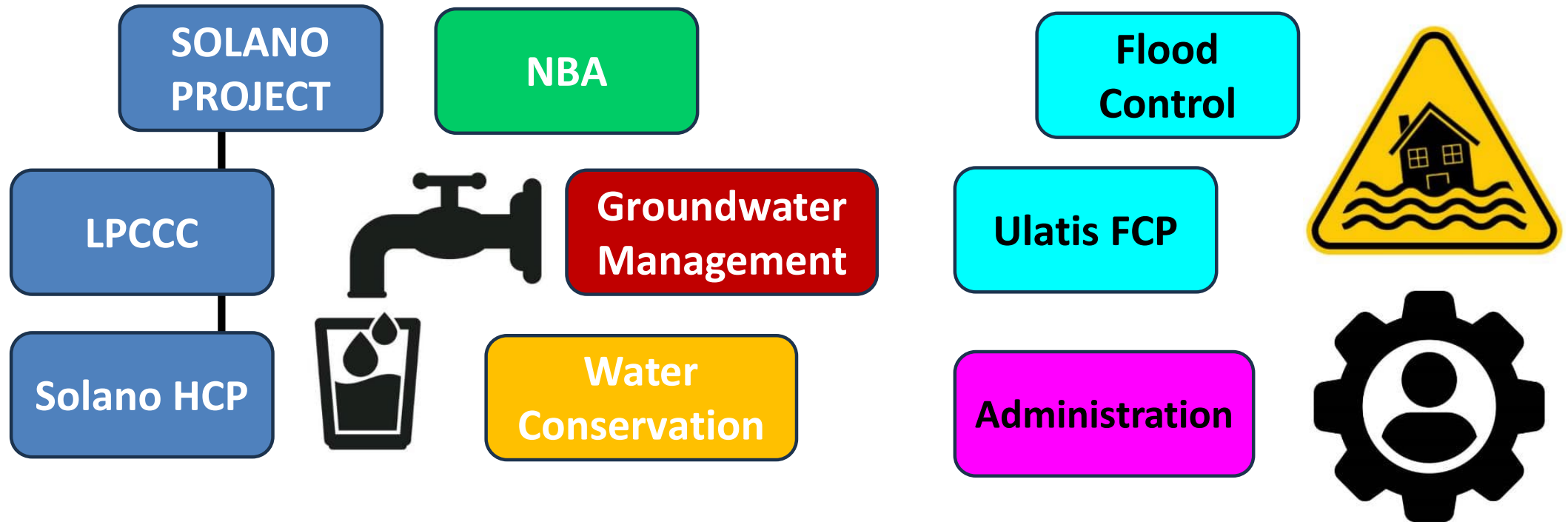


Solano County Water Agency

Board Workshop | March 13, 2025



Overview | Purpose



Mission Statement:

The Solano County Water Agency exists to ensure sustainable, reliable, high quality water resources and flood management for the benefit of the residents, businesses, and agricultural communities in Solano County.

Overview | Member Agencies

Cities:

Benicia

Dixon

Fairfield

Rio Vista

Suisun City

Vacaville

Vallejo

County:

District 1 (Vallejo)

District 2 (VJ/Ben-Marsh)

District 3 (FF/SC-Cordelia)

District 4 (DX/VV-Allendale)

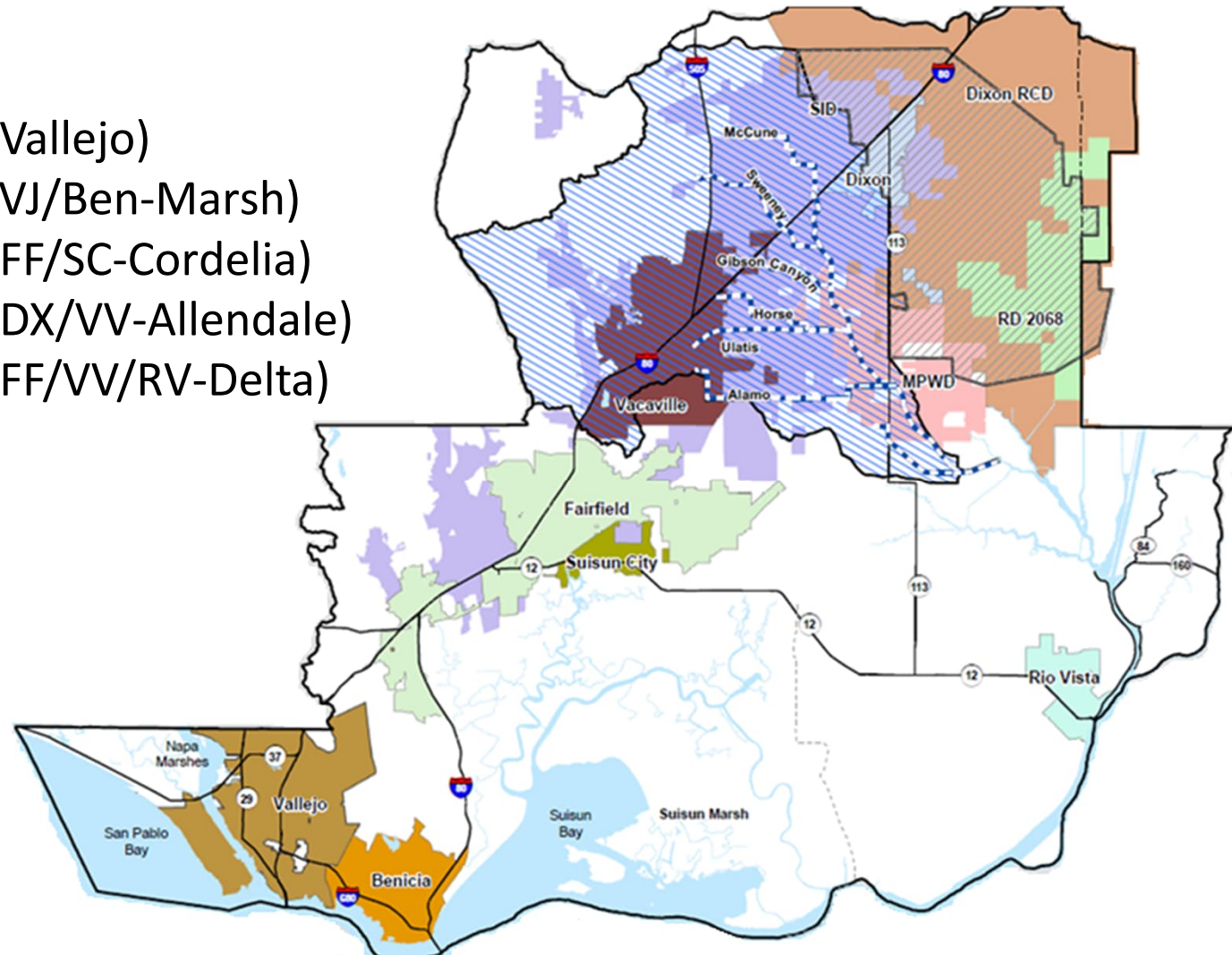
District 5 (FF/VV/RV-Delta)

Special Districts:

Solano Irrigation District

Maine Prairie Water District

Reclamation District No. 2068



Overview | Strategic Plan

Strategic Plan Goals

- 1) Water Supply Reliability
- 2) Water Management Infrastructure
- 3) Flood Management
- 4) Water Resource Resiliency
- 5) Education and Outreach
- 6) Data Management
- 7) Natural Resource Stewardship
- 8) Groundwater Management
- 9) Advocacy
- 10) Funding and Staffing



Solano County
Water Agency

SCWA

2016 – 2025 Strategic Plan



DRAFT



Prepared by:
Kennedy/Jenks Consultants

August 2016

Solano Project | Overview

Water Supply

- Drinking Water | 400,000 residents
- Vacaville, Fairfield, Suisun City, Travis AFB, Benicia, Vallejo
- Agriculture | 75,000-acres (2.5 x San Francisco)



Ownership

- US Bureau of Reclamation (Federal Facility)
- 25-year Agreements with USBR (2024-2049)
 - Operation, Maintenance, and Rehabilitations (OM&R)
 - Water Service Agreement (1 remaining Water Right w/USBR)



Operation

- Contract with SID (Dam & Canal Operations, Canal Maintenance)
- SCWA leads Capital Projects, SCADA, Lower Putah Creek | Work closely with SID



Solano Project | Inter-Dam Reach

Lake Berryessa and Monticello Dam

- Water is Stored/Saved
- Lake level and storage
- MET Station (evap, wind, solar rad, hum)
- Water temperature string (1-70 ft)



Putah Diversion Dam

- Water is Diverted to Putah South Canal
- Automate Flow to PSC
- Automate Flow to Putah Creek
- Lake Solano and forebay levels
- New Screen Cleaner (2015)
- Near Real-time Flood gate releases**



Putah Diversion Office (2010)

- Shared facility with SCWA, SID, VVFD
- Fire House , Admin Building, Shop, Storage
- Main facility for equipment storage and Solano Project support



Solano Project | PSC & Terminal Reservoir

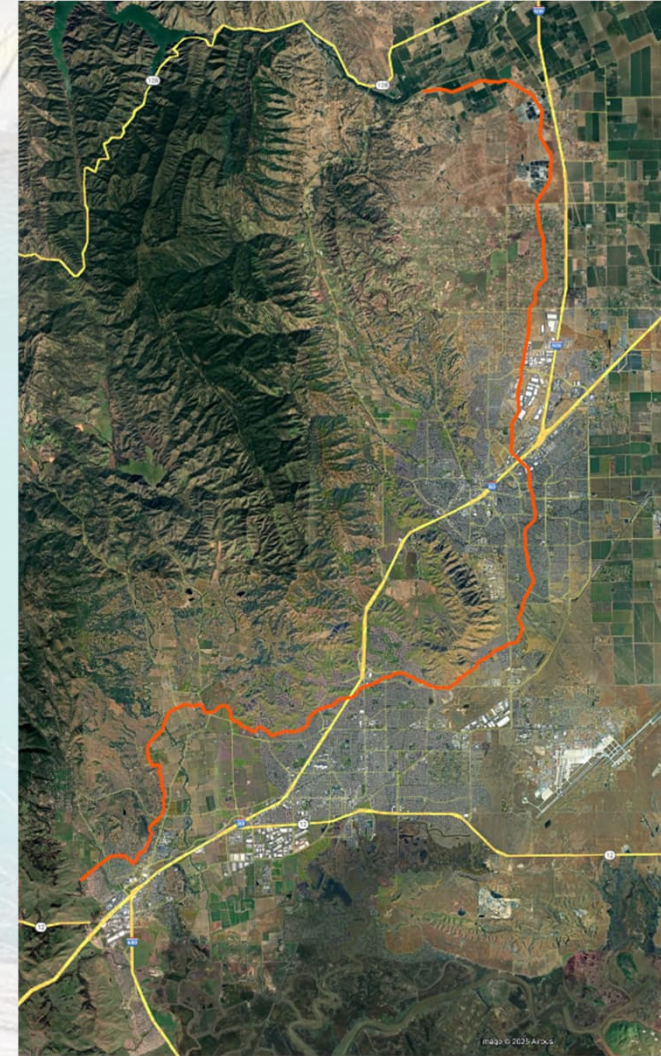
Putah South Canal (PSC)

- 12 Checks
- 11 Plant Intakes
- 59 SID laterals

Terminal Reservoir

- Benicia and Vallejo Intakes
- Lake Level and Precipitation

****All monitoring data is provided to PSC operators in near real-time**



Solano Project | Automation (SCADA)

Current Automated Locations

- Putah Diversion Dam
- 4 checks (Winters → Vaca.)

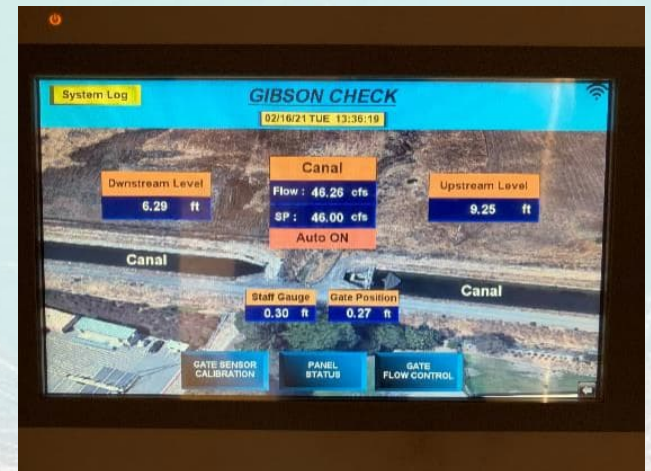
Phase 2 Automation (2025-26)

- 3 checks (Fairfield)

Phase 3 Automation (2026-27)

- 3 checks (Suisun Valley)

**Operators are able to connect to each location from phone or computer and make changes remotely



County Wide Monitoring (Flood, GW, NBA)

Groundwater Network

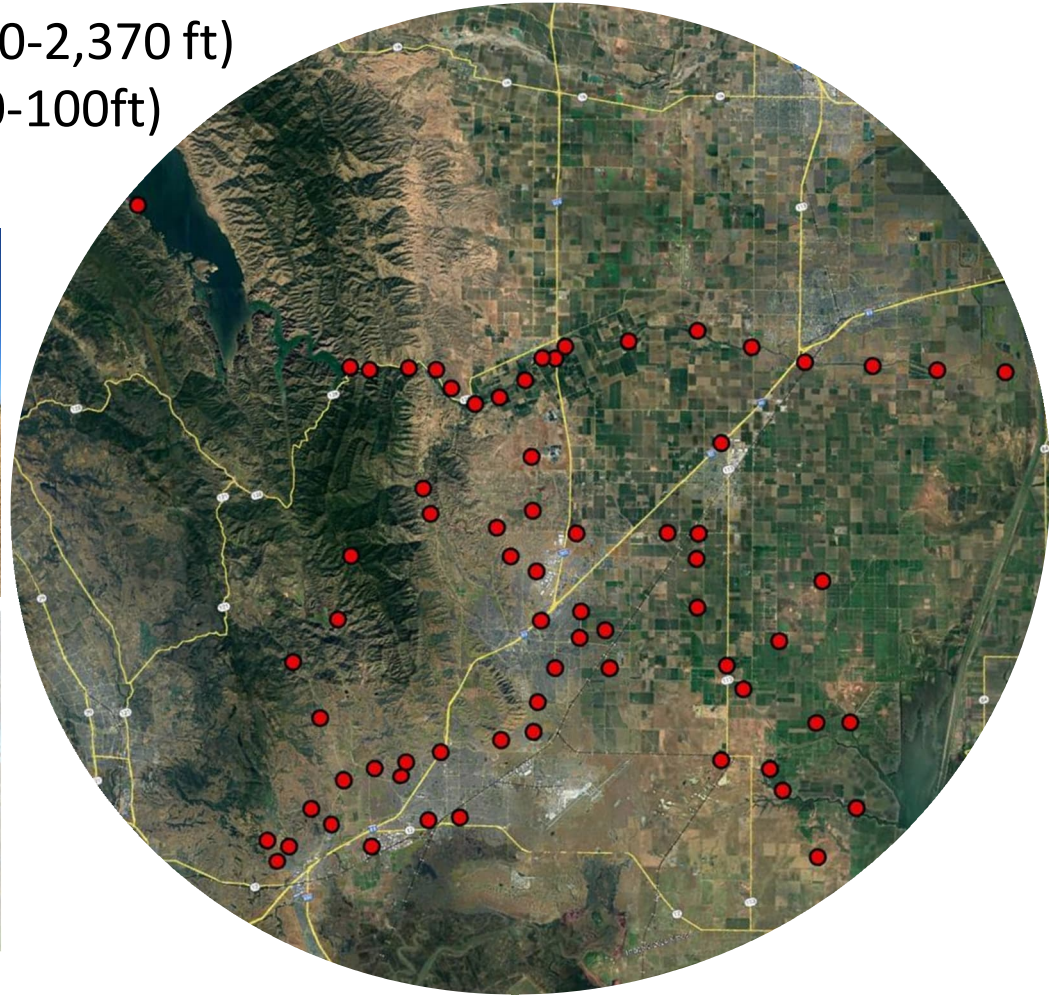
- 4 deep well locations with 3 sub-wells (400-2,370 ft)
- 5 joint DWR locations with 2 sub-wells (60-100ft)
- 4 Rural North Vacaville wells
- 4 City of Vacaville wells

Flood Monitoring Network

- 16 creek locations
- 8 precipitation locations
- All sites telemetered

North Bay Aqueduct

- 2 tidal flow stations
- 3 WQ stations
- All sites telemetered



Solano Project | O&M

SCWA Team

- SCADA: All monitoring and automation
- CIP: Capital Improvement Plan
- Accord: Lower Putah Creek releases & compliance
- AIS: Aquatic Invasive Species Management (Mussels)
- Continuous collaboration with SID SP Team

SID Team

- O&M of 3 Dams, 3 Reservoirs, 33-mile Canal (PSC)
- Daily inspection of the Putah South Canal (PSC)
- Cleaning of all life nets and screens (daily in summer)
- Mowing, veg. management, clearing drain inlets and maintaining other drainage channels w/in right-of-way
- Grading and maintenance of roadways (gravel)
- Replacement of fencing and automatic gates
- Signage, life ladder posts and painting of mile parkers
- Annual Canal Cleanout (2-months, Dewatering of PSC)



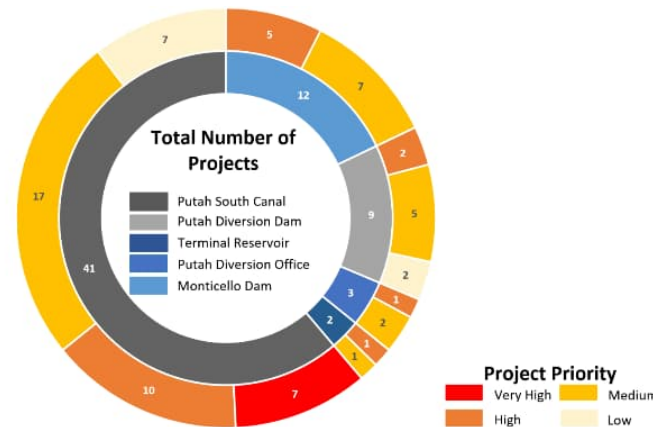
Solano Project | Capital Improvement Plan

10-year CIP Plan (2024)

- Identifies Capital Improvement Projects (FY25-FY34)
- 60 Projects: New Build, Rehabilitation, and Feasibility Studies
- \$1.2 million annually

Projects: In-Process

- PSC – Automation Improvements
- PDD – Roadway & Drainage Improvements
- PDO/PDD – CCTV/Security Improvements



Top Projects: Upcoming

- PDD: Radial Gate Rehab & Modernization (\$4M)
- PSC: Terminal Check Seismic Upgrade & Risk Reduction (\$24M)
- PSC: Security Fence Upgrades (\$3M)

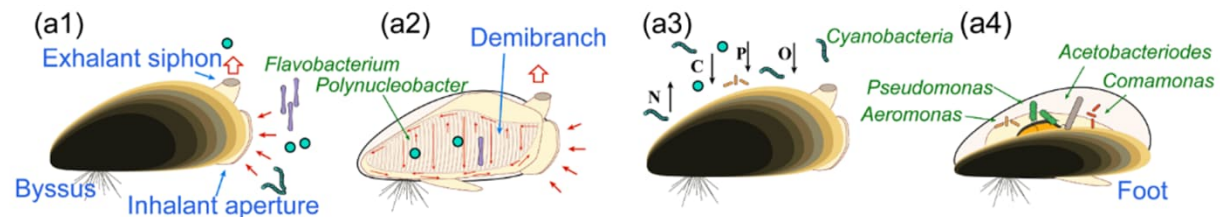
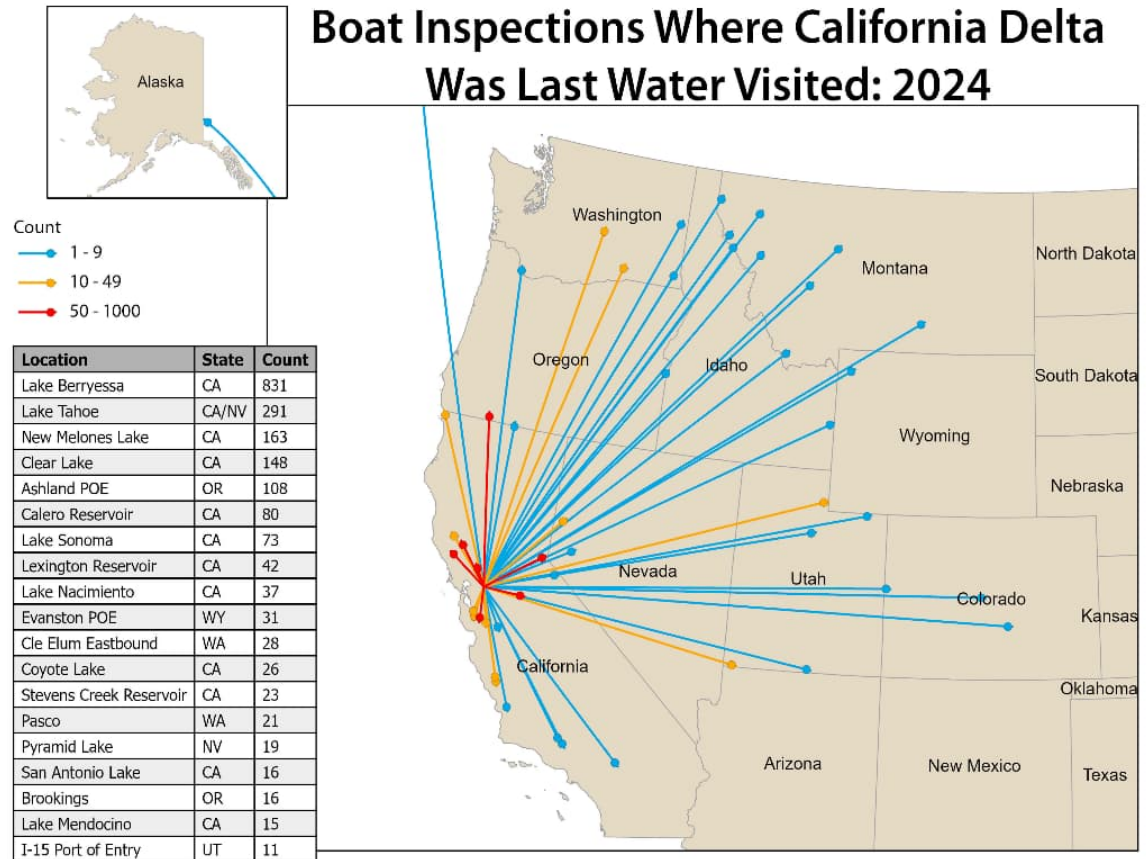


Solano Project | AIS Prevention Program

The purpose of the AIS program is to prevent the introduction of invasive freshwater mussels into the Solano Project through watercraft inspections and, now quarantine and decontamination, into Lake Berryessa.

Detrimental impacts of these mussels include:

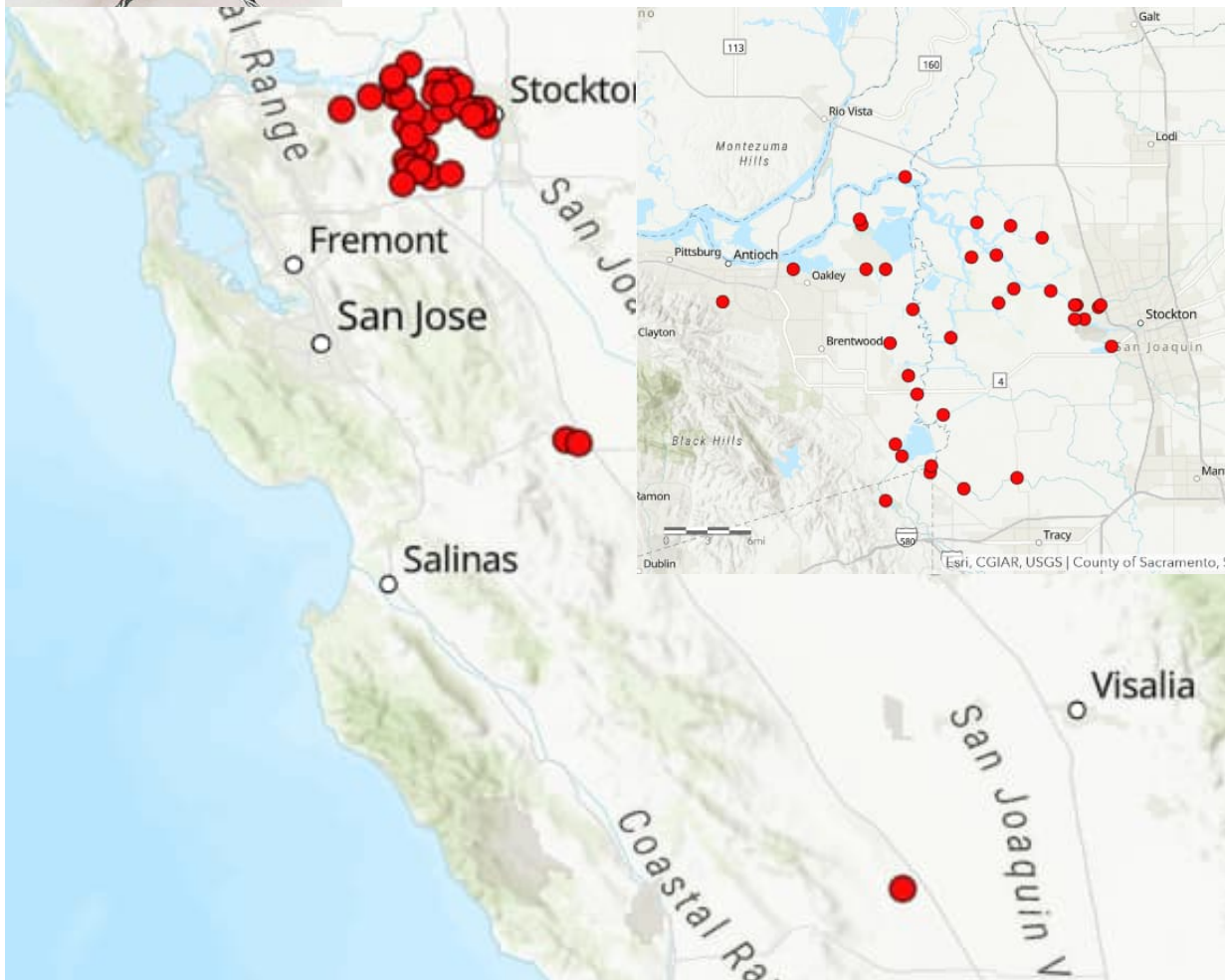
- **Ecological**
 - Remove the bottom of the food web & D.O. Crashes.
- **Human Health**
 - Promote and enhance toxic algal blooms.
- **Infrastructure**
 - Clog agricultural and urban water conveyance.
- **Recreation**
 - Damage boats/marinas, shells on beaches.



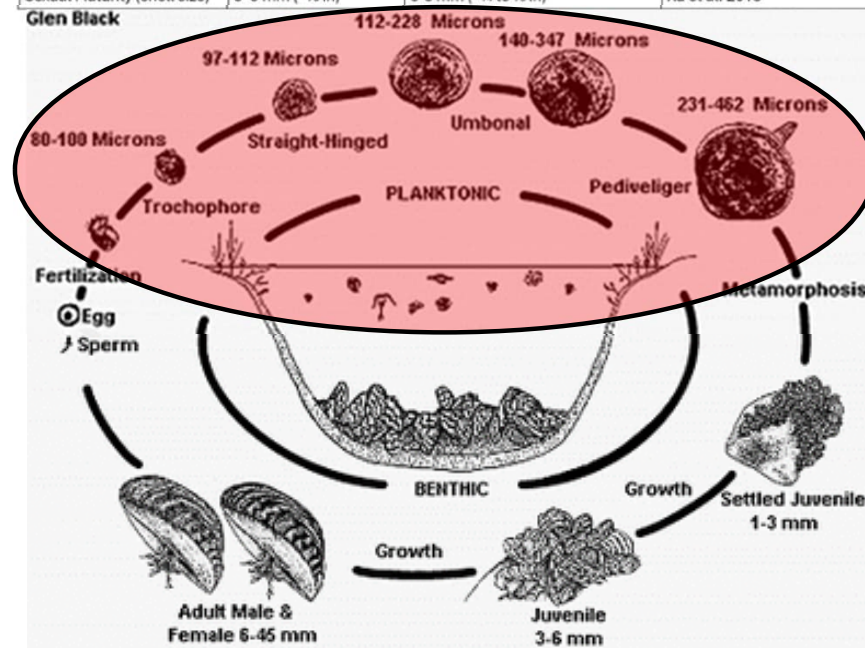


Golden Mussel

Limnoperna fortunei



Parameter	Numeric Value		References
	Q/Z mussels	Golden mussel	
Calcium	10-25 mg/L	1-50 mg/L	Mackie and Brinsmead 2017
Salinity	≤4 ppt	0-3 ppt; up to 23 ppt w/ FW pulses	Sylvester et al. 2013
Temperature (adult survival)	1-32 °C (34-90°F)	5-35 °C (41-95°F)	Oliveira et al. 2010
Temperature (spawning)	12-18 °C (54-64°F)	16-28 °C (61- 82°F)	Darrigran et al. 2003
Temperature (larval devel)	20-22 °C (68-72°F)	16- 28 °C (61- 82°F)	Ricciardi 1998
pH	7.4-8.4	5-10	Yang et al. 2023
DO	0.1-13.3 mg/L	3.7-11.2 mg/L	Mackie and Brinsmead 2017
Depth	≤ 50m (164 ft)	0.5 - 40m (1.5-131ft) , 10m* (33 ft)	Darrigran 2022
Sexual Maturity (shell size)	8-9 mm (~⅓ in)	6-8 mm (~¼ to ⅓ in)	Xu et al. 2013

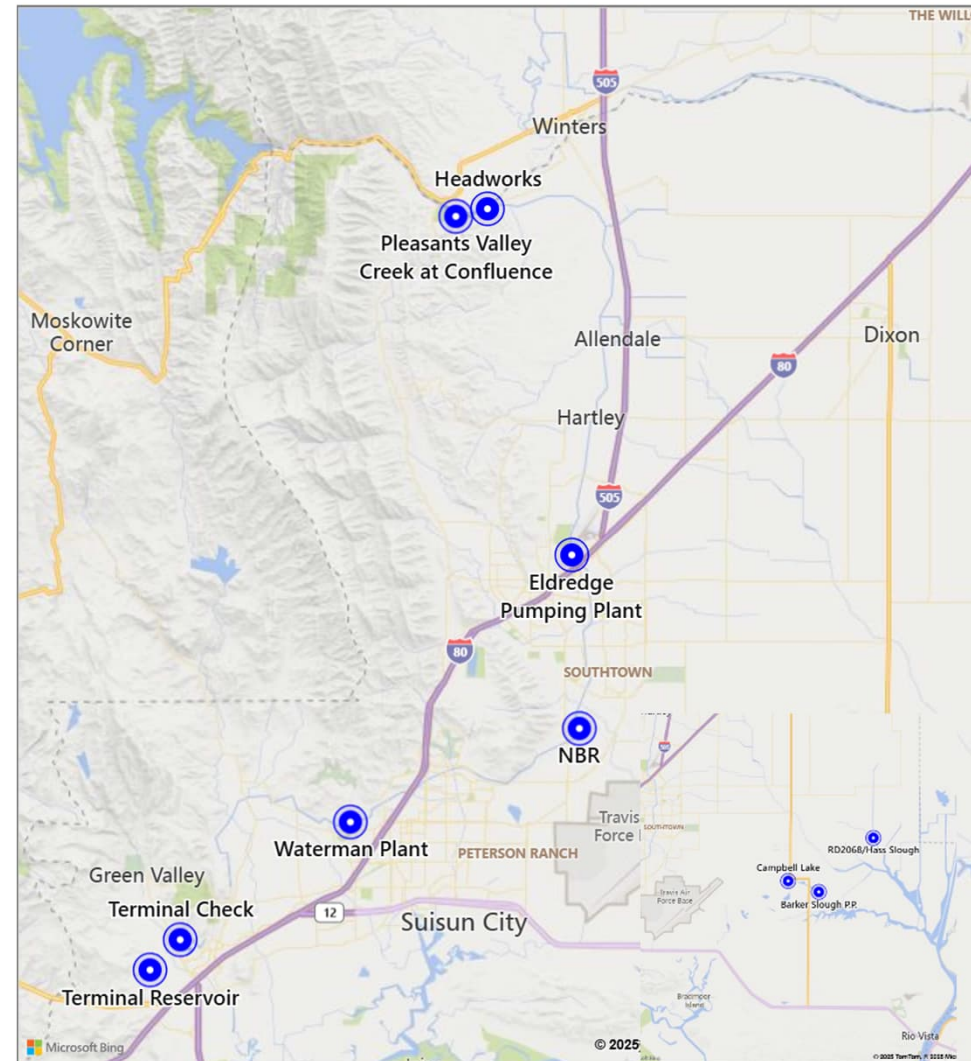


Solano Project & NBA | Water Quality

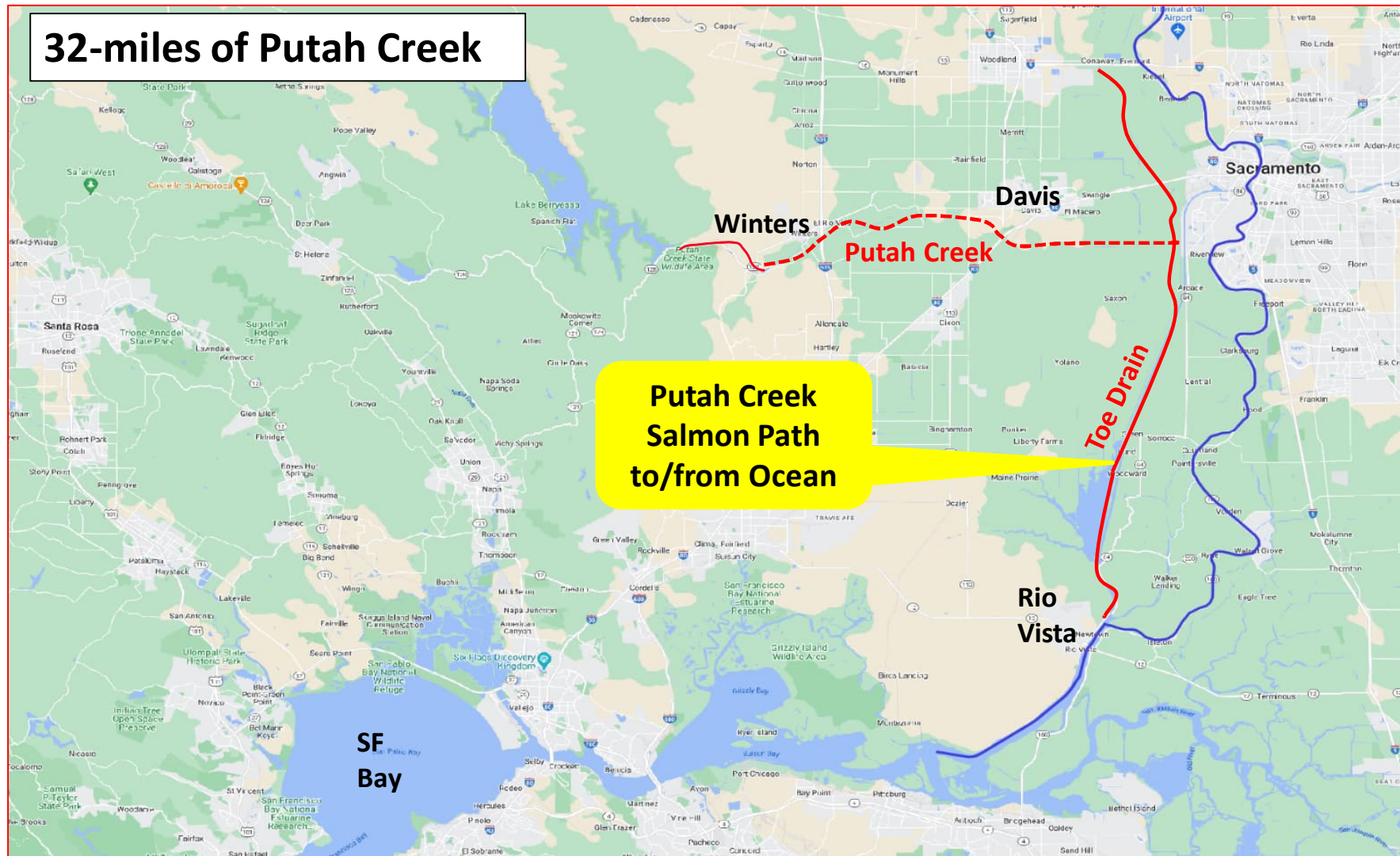
The purpose of the water quality monitoring program is to determine the quality of the water that is being sent through the NBA and the PSC to municipal water treatment plants.

This is achieved using a network of real time sensors, field sampling and laboratory analysis. Water Quality parameters include:

TOC/DOC	Taste & Odor	Phytoplankton
Turbidity	pH / ORP	Turbidity
Conductivity	UVA-254	



Putah Creek | Overview



Putah Creek in Downtown Winters, CA



**Putah
Creek
near
West
Sacramento**

*Yolo Bypass
Wildlife Area*



Putah Creek Accord | Flow Locations



Putah Creek Accord | Overview

1. Lower Putah Creek Coordinating Committee

Ten Member Agencies (5 Solano, 5 Yolo)

2. Minimum Flows

3. Streamkeeper

4. Long Term Monitoring/Data Summit

5. Projects/Grants (\$15M)

- a) Winters Putah Creek Nature Park
- b) Putah Creek Water Management
- c) Nishikawa/UCD
- d) Salmon Passage 106a
- e) Salmon Passage Los Rios Check Dam



Solano Habitat Conservation Plan (HCP)



580,000 Acres | 39 Covered Species | 4 Natural Communities

16,000-ac of Development | 1,280-ac of other New Facilities

- **Ongoing O&M Activities for 866 miles of Flood Channels, Streams, Pipelines, Ditches;**
- **1,700 miles of Maintenance Access Roads and 1,150 acres of Flood Control Basins**
- **Approximately 27,000 acres will be Preserved**

Solano HCP | Overview

Plan Participants

- City of Dixon
- City of Fairfield
- City of Rio Vista
- City of Suisun City
- City of Vacaville
- City of Vallejo
- Solano County Water Agency
- Solano Irrigation District
- Maine Prairie Water District
- Reclamation District No.2068
- Vallejo Flood & Wastewater District
- Dixon Regional Conservation District
- Dixon Regional Watershed JPA

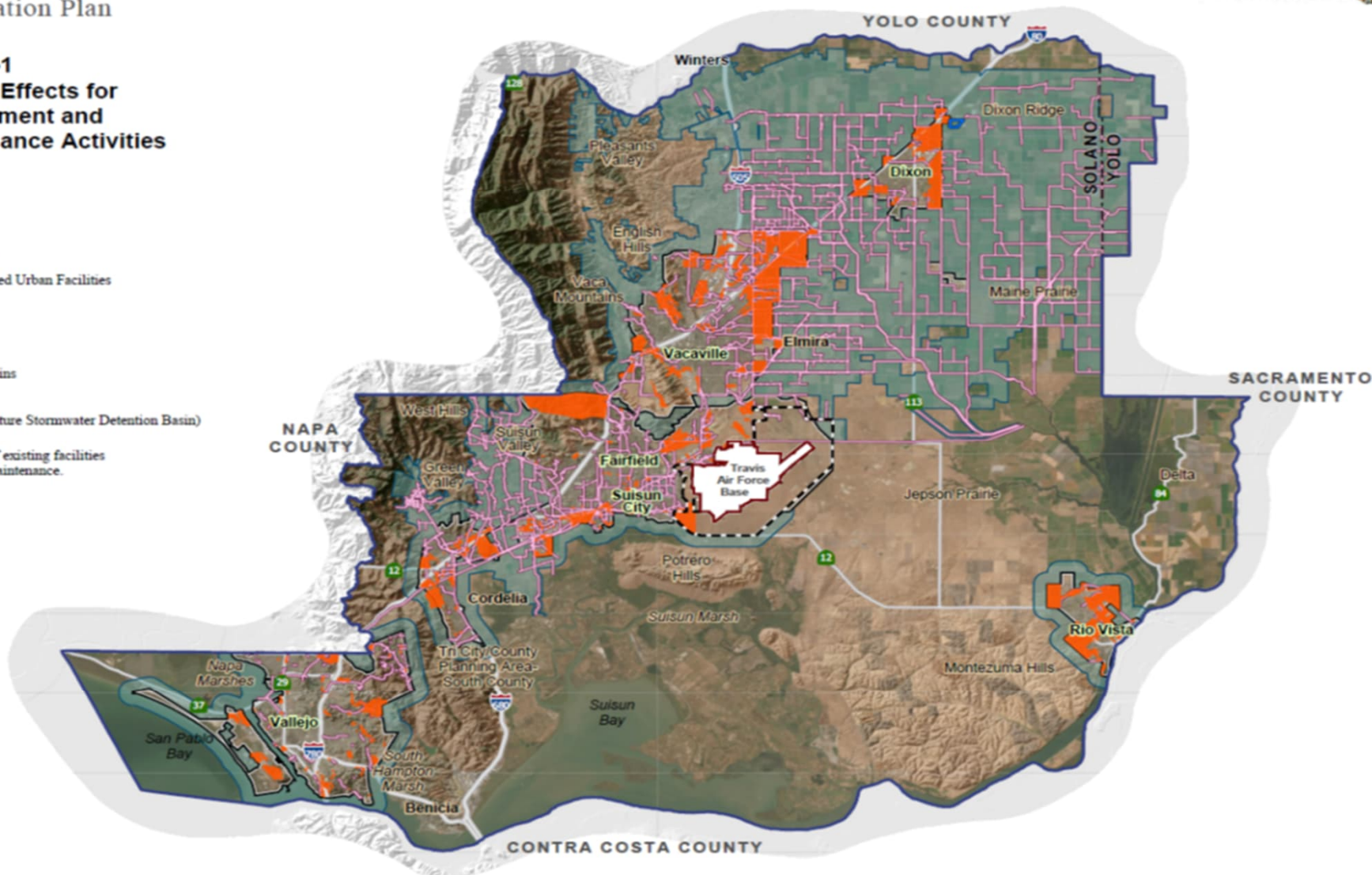
Plan Overview

- The Solano HCP establishes a framework for complying with state and federal endangered species regulations while accommodating future urban growth, development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the Plan Participants within Solano County over the next 30 years.
- The Solano HCP accounts for all Covered Activities undertaken by or under the permitting authority and control of the Plan Participants and ensures conservation of 39 Covered Species within the Plan Area.

Figure D-1
Areas of Potential Effects for
Planned Development and
Operation and Maintenance Activities

- Plan Area
- Travis Air Force Base - Excluded
- Travis Reserve Boundary
- Zone 1 - Urban Growth Boundaries
- Zone 2 - Special Districts and Limited Urban Facilities
- Planned Development in Zone 1
- Plan Participant Facilities*
- Proposed Facilities***
 - Future Stormwater Detention Basins
 - Proposed Reservoir
 - Proposed City of Dixon Pond (Future Stormwater Detention Basin)

*Refer to Appendix A for description of existing facilities and proposed new facilities requiring maintenance.



Solano HCP | Timeline



Full-team collaborative,
review of HCP Admin
Draft & EIR/EIS

Public Review of HCP and
EIR/EIS (45 days)

Produce Admin
Final EIR/EIS

Screen Check &
Final EIR/EIS

File ROD and
NOD

July 2025

Oct. 2025

Dec. 2025

Jan. 2026

May 2025

Aug. 2025

Nov. 2025

Dec. 2025

Jan. 2026

Jacobs produces the
Screen Check EIR/EIS,
federal register notice and
other outreach materials,
including tribal
communications

Review and respond to
comments

SCWA/Agency
review of Final Docs.

Publish Final
EIR/EIS



Groundwater | GSA Compliance

**Maintain a Functioning GSA
(Budget and Staffing)**

**Conduct Annual GW
Monitoring and Reporting
(each April)**

SGMA Compliance

**Ongoing GSA
Coordination/Outreach**

**Prepare/Approve
Five-Year GSP Updates**

Groundwater | Multiple GSAs

Solano Subbasin GSA

- City of Dixon
- City of Rio Vista
- Solano County
 - District 4
 - District 5
- California Water Service, Dixon
- Dixon RCD
- Maine Prairie Water District
- Reclamation District No. 2068
- Solano County Farm Bureau
- Solano RCD

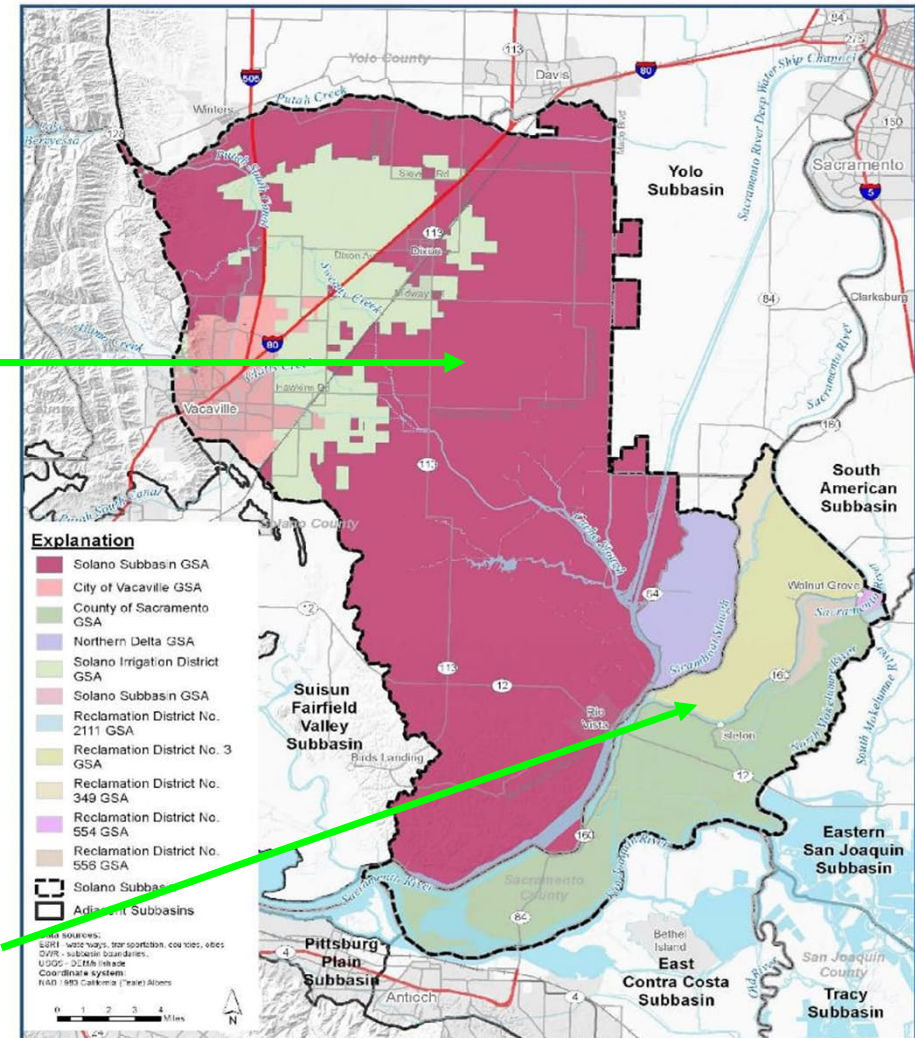
City of Vacaville GSA

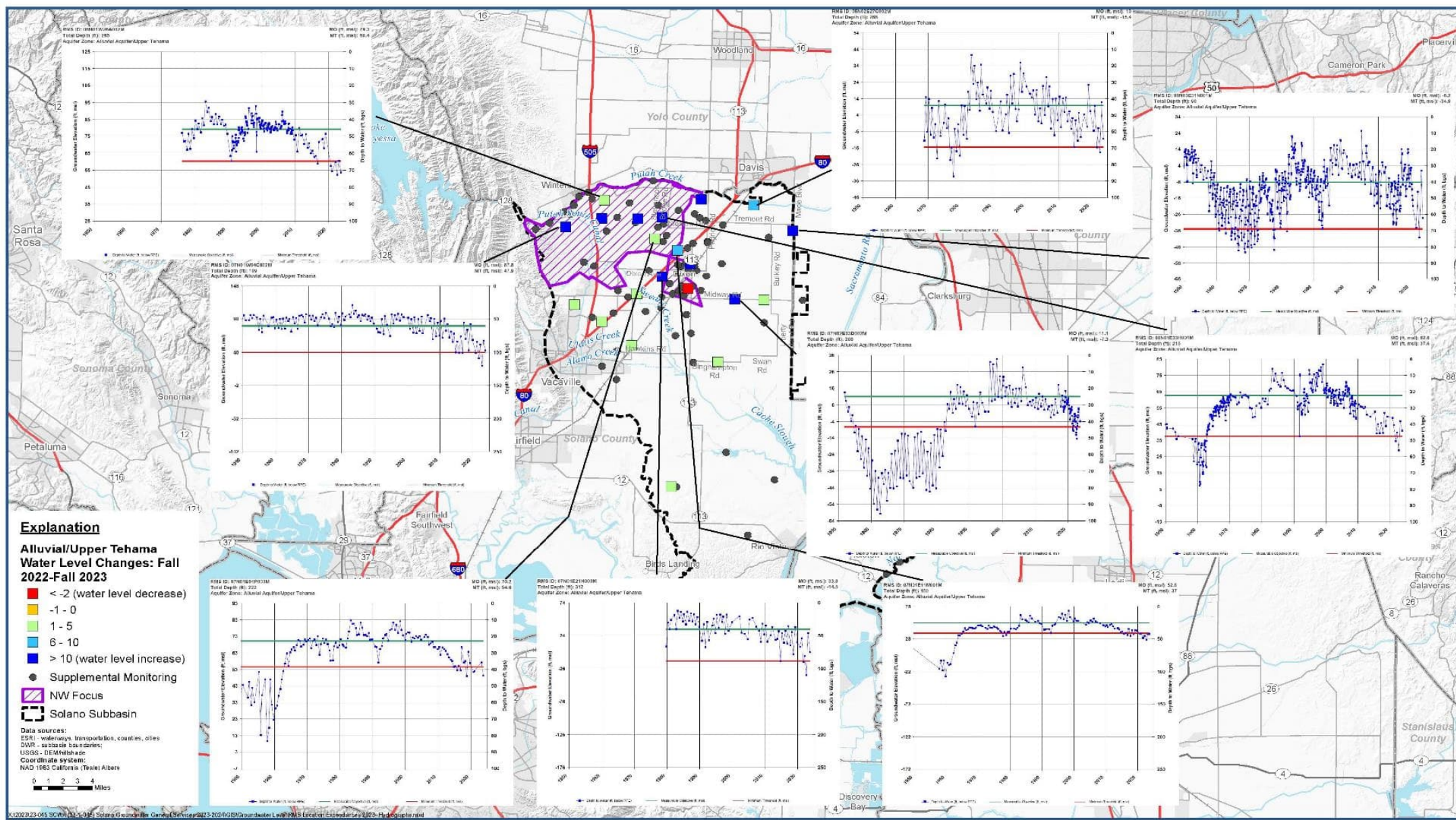
Solano Irrigation District GSA

County of Sacramento GSA

Northern Delta GSA

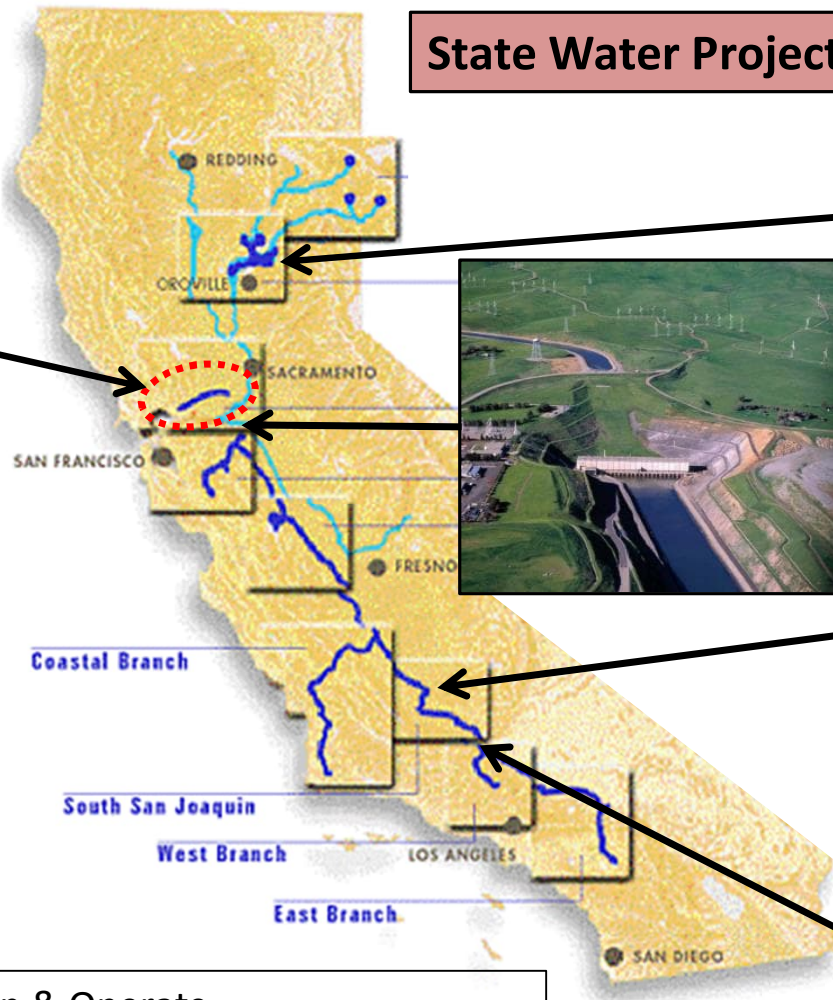
Reclamation District Nos. 3, 349, 554, 555, 211 GSAs





State Water Project (SWP)

NBA



- DWR | Own & Operate
- 34 reservoirs | 700-mi of canal/pipeline
- Urban Focus | Serves 70% of California
- Solano-Napa | 2% of the SWP



NBA | NBA Facilities

Napa-Solano Water Supply (Urban)

- Vacaville, Fairfield, Benicia, Vallejo, Travis AFB
- Suisun City (No Access)
- Dixon, Rio Vista (5-year Notice)
- Napa, Am Canyon, Calistoga
- 33-100% of Urban Portfolio



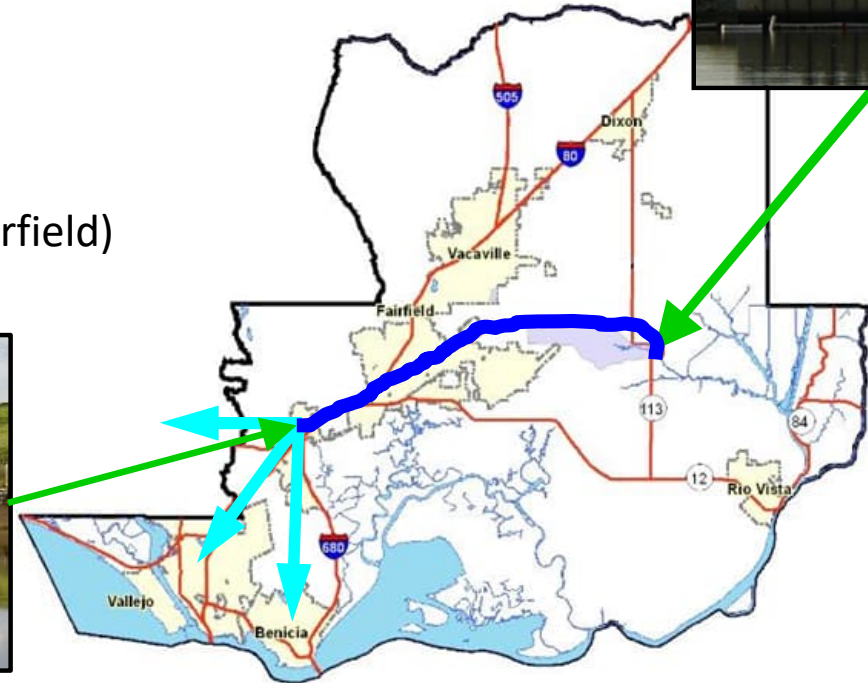
North Bay Aqueduct (NBA) Facilities

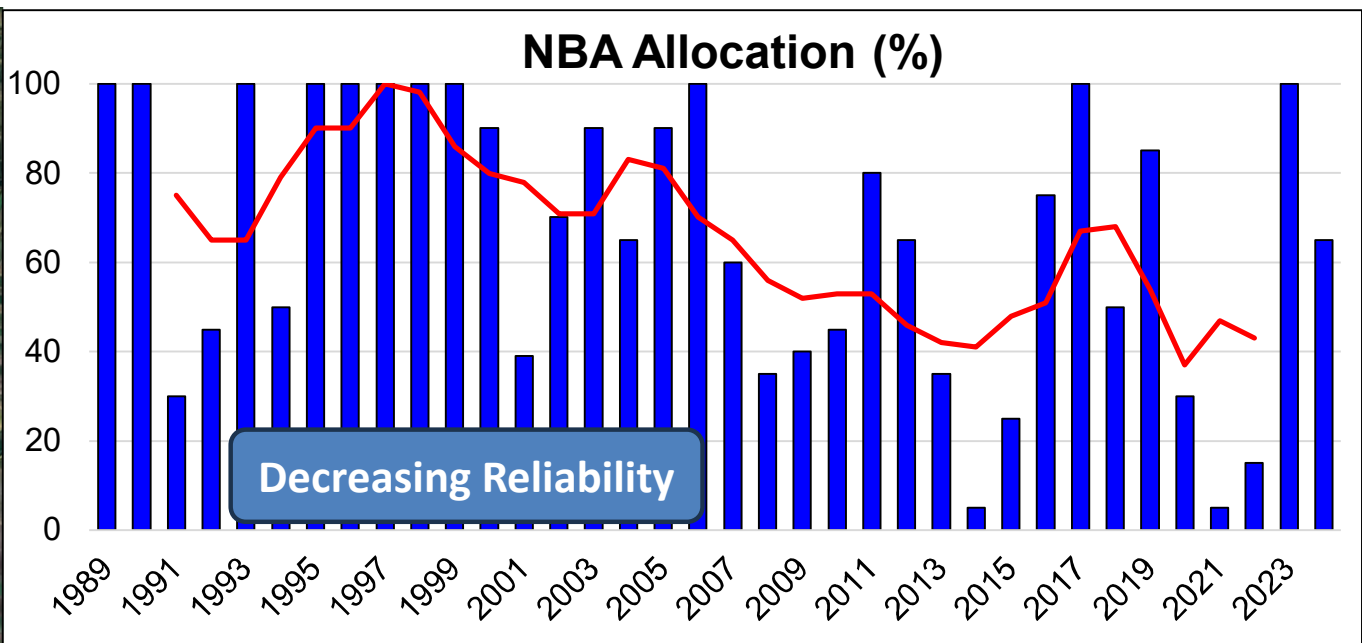
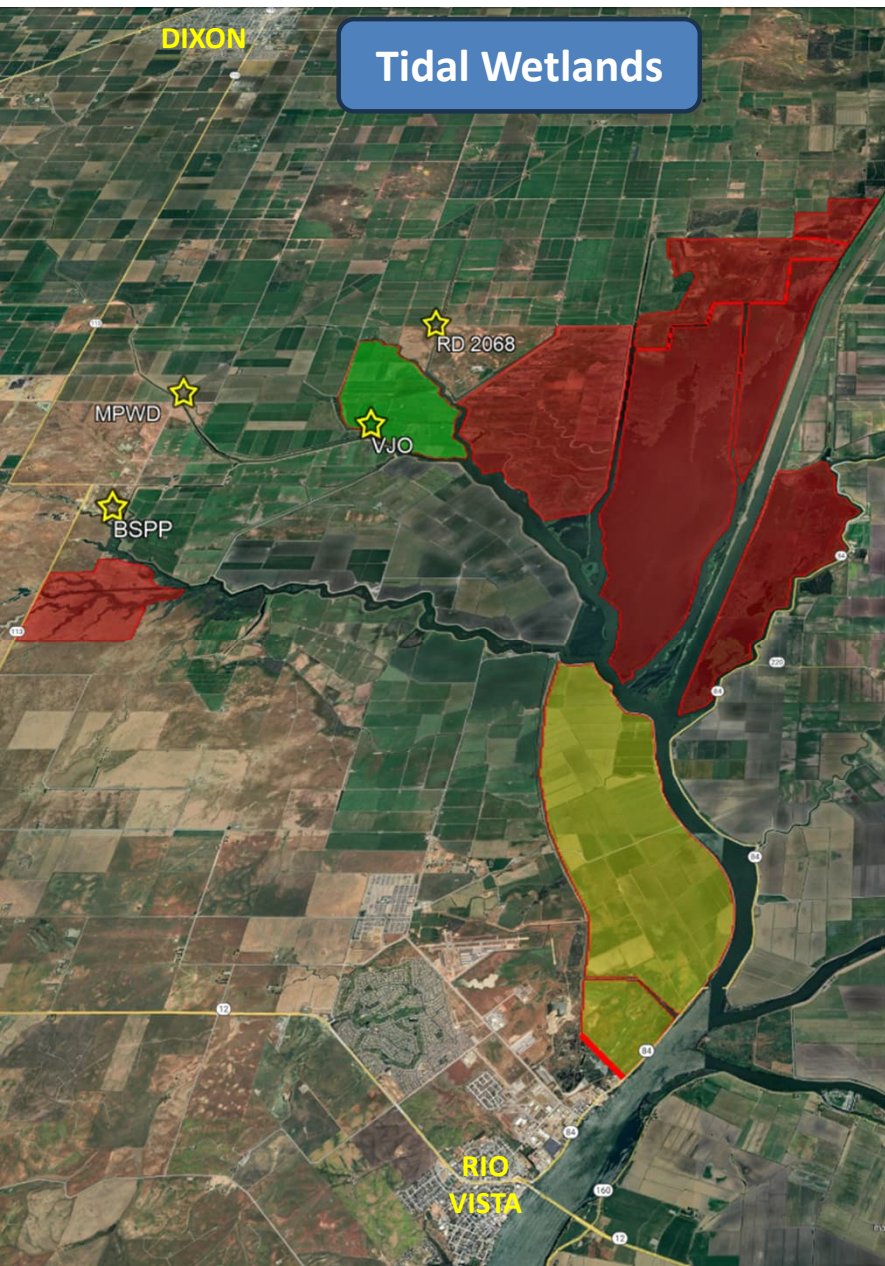
- Barker Slough Pumping Plant (Hwy 113, Dixon)
- Travis Surge Tank (N. Gate Road, TAFB)
- Cordelia Forebay & Pumping Plant (Mangels Blvd, Fairfield)
- Napa Terminal Tanks (Am. Canyon)
- 27-mile pipeline (6-ft ϕ)



Water Type

- SWP
- Settlement
- Vallejo Permit Water



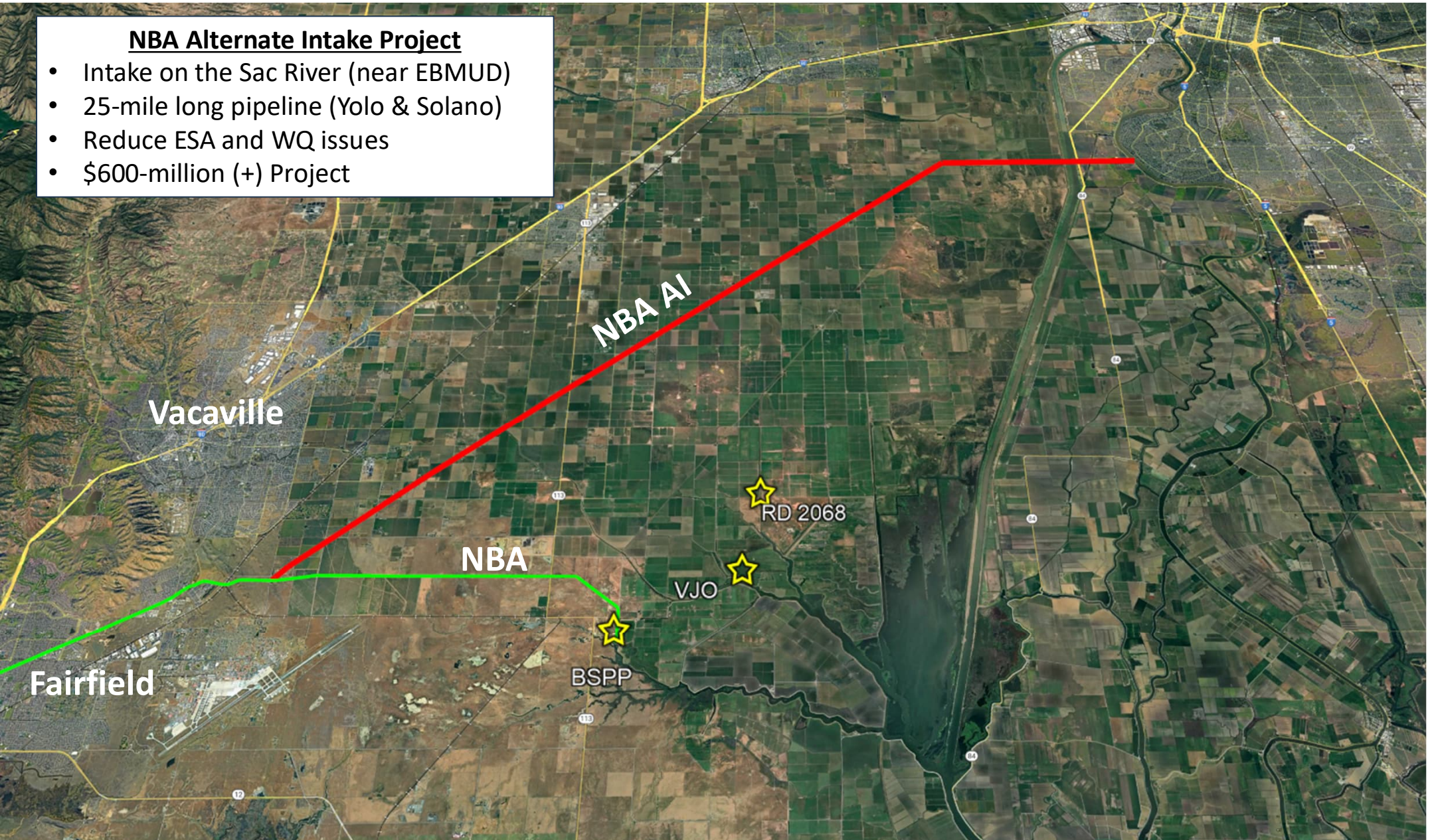


NBA | Challenges (WQ)



NBA Alternate Intake Project

- Intake on the Sac River (near EBMUD)
- 25-mile long pipeline (Yolo & Solano)
- Reduce ESA and WQ issues
- \$600-million (+) Project



[illegible]

General | Bay-Delta Plan & Healthy Rivers

OCTOBER 2024 DRAFT

**Water Quality Control Plan
for the
San Francisco Bay/Sacramento-San
Joaquin Delta Watershed**



State Water Resources Control Board

Agency	Current Allocation (AF)
Vallejo	14,600
Fairfield	9,200
Vacaville	5,750
Suisun City	1,600
Maine Prairie	15,000
SID	141,000
UC Davis	4,000
CSP Solano	1,200
Total =	192,350

Surface Water Lost

UIF: 192,350 AF (10/20 years Little/None)

HR&L: 6,000-7,000 AF of Surface Water

Water Conservation Program

AB1668 & SB606

“Make Water Conservation a California Way of Life.”

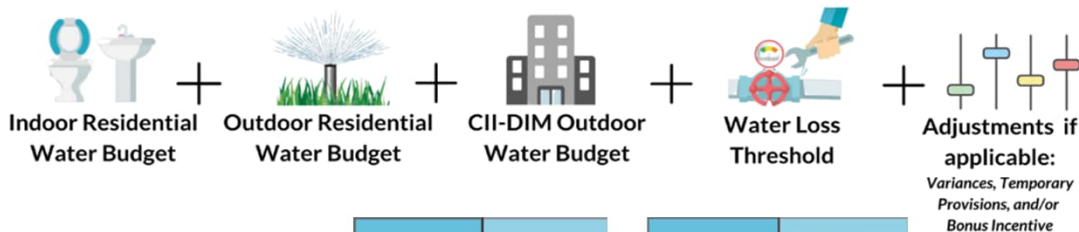
Three water use standards are used to calculate each urban water supplier’s overall budget. The sum of these is known as an Urban Water Use Objective (UWUO).

- Indoor residential;
- Outdoor residential;
- Outdoor commercial, industrial and institutional (CII-DIM));
- One water loss standard, and a variety of adjustments

AB 1572

October 2023: Prohibits the use of potable drinking water for the irrigation of nonfunctional turf on commercial, industrial, institutional (CII) properties and HOA common areas throughout the state.

- January 1, 2027
 - Public properties owned by local governments.
- January 1, 2028
 - Commercial, industrial and institutional (CII) properties.
- January 1, 2029
 - Homeowner association common areas.
- January 1, 2031
 - Properties owned by local governments in Disadvantaged Communities (DAC) or when state funding for turf replacement is available.



Compliance Year	Allowable GPCD
2020-2024	55
2025-2029	47
2030 onward	42

Indoor Residential

Compliance Start Date	Irrigable-Irrigated (II)
July 1, 2025	0.80
July 1, 2035	0.63
July 1, 2040	0.55

Outdoor Residential

Compliance Start Date	Irrigable-Irrigated (II)
July 1, 2028	0.80
July 1, 2035	0.63
July 1, 2040	0.45

CII-DIM Outdoor



Urban Water Conservation Programs

SCWA coordinates the Solano Urban Water Conservation Committee (UWCC) that consists of representatives from each urban water retailer in the county. This program is designed to provide technical and financial support for the UWCC.

~\$1M budget, split 75% SCWA, 25% UWCC with members paying a prorated share based on rebates in their service areas and the number of connections.

Technical & Outreach Programs

- Eagle Aerial for AB1668 & SB606
- Regional landscape water use
- School Water Education Program (SWEP)
- Low-income water efficiency upgrades
- ZunZun and Rocksteady
 - School assemblies
- Radio and Social Media
- Bay Area QWEL



Residential and Commercial Rebate Programs

- Cash 4 Grass lawn conversion
- High efficiency washing machines
- Smart irrigation controllers
- Treebate program
- Rain barrels
- Pool covers



Agricultural Water Conservation Programs

Designed to increase agricultural water efficiency through technical and financial assistance for equipment upgrades.

- Irrigation system evaluations
- Cost share for water conservation instrumentation
- Pump efficiency testing
- Soil moisture monitoring
- Irrigation scheduling
- Grower workshops



Ulatis FCP | Green Valley FCP

Ulatis Flood Control Project

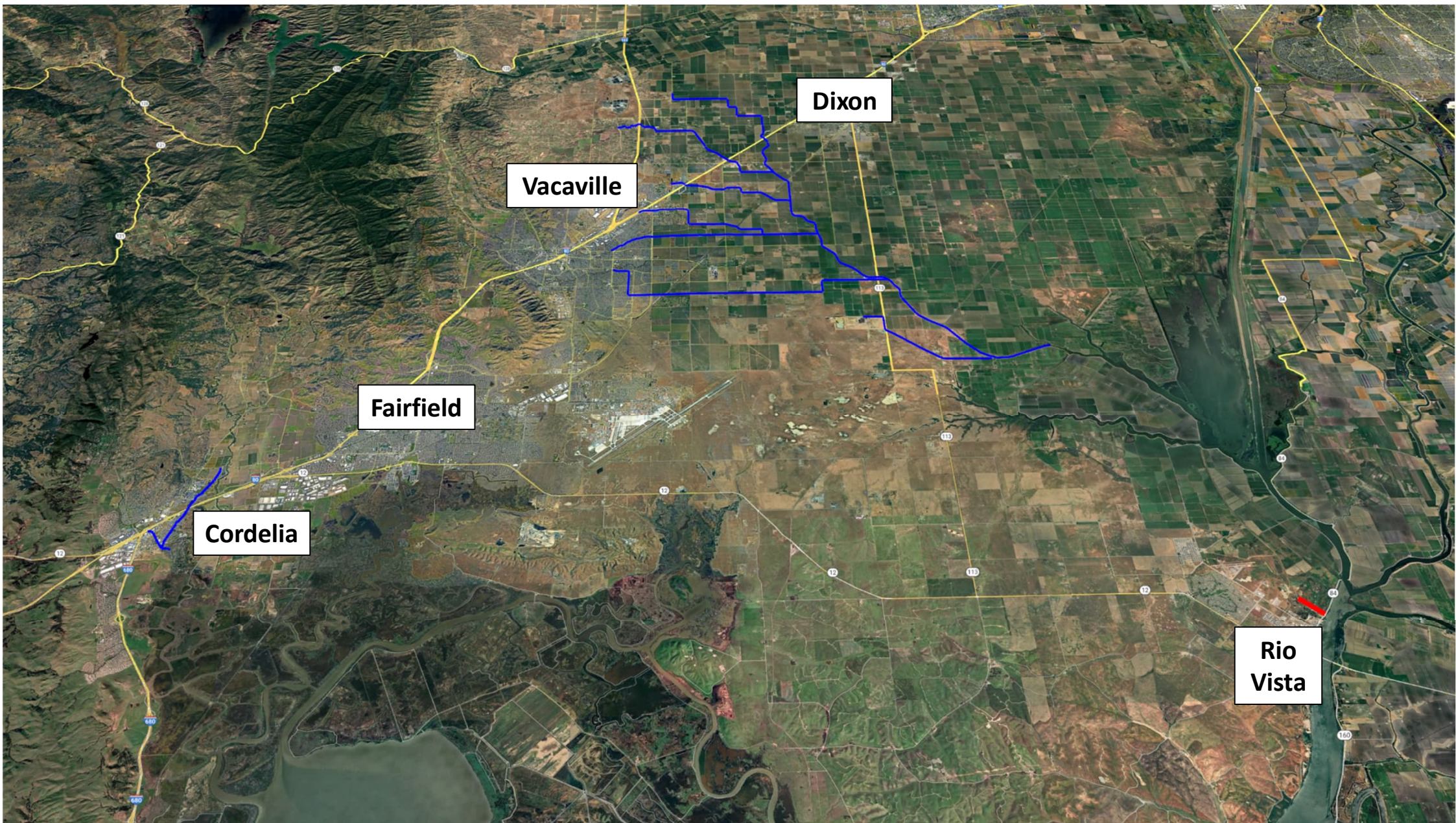
- Completed 1972; Natural Resources Conservation Service (NRCS) formerly Federal Conservation Service
- Purpose: Protect agricultural lands downstream of the City of Vacaville (10-yr recurrence level)
- Outfall to Cache Slough Complex via Cache Slough
- Ulatis Watershed drains 20% of Solano County
- >90% City of Vacaville, ~25% City of Dixon (West)
- Comprised of 7 Channels (approx. 54 miles):

McCune Creek	Sweeney Creek	Gibson Canyon Ck	Horse Creek
Ulatis Creek	New Alamo Ck	A-1 Channel	

Green Valley Flood Control Project

- Completed in 1962; United States Army Corps of Engineers (USACE)
- Purpose: protect surrounding land near Cordelia/City of Fairfield (40-yr recurrence level)
- Outfalls to Suisun Marsh via Cordelia Slough; heavy tidal influence within system
- Comprised 2 channels (approx. 3 miles):
 - Green Valley Creek (GVC): Central Way to Romania Rd (i.e. Cordelia Slough)
 - Dan Wilson Creek: Rockville Rd to Confluence with GVC (Cordelia Rd/RxR tracks)





UFCP & GVFCP | OM&R

- SCWA staff manages flood control system
- Contracts with Solano County Public Works Channels Crew O&M activities
- Strong working relationship with Solano County member agency since 1989
- Over 100 miles of maintenance roadway

Typical O&M Activities:

- April - July 1st : Terrestrial herbicide spraying, mowing and grading
- April - Dec 15 (weather permitting): washout and bank repair from winter storms
- April - Dec 15: Culvert replacements as needed up and down the system informed by staff inspections
- September - Mid November (weather Permitting): Aquatic Herbicide Spraying

Typical Rehabilitation Activities:

- Large Scale Culvert Replacement (original culverts 50-years old)
- Long-term Repairs to Frequent Washout Areas
- Establishment of Native (Deep Rooting) Vegetation along the Banks
- Cache Slough Culvert Replacement Project (2025)
- New Alamo Channel at Pedestrian Bridge & Alamo Drive (2022)



Mellin Levee | Overview & Challenges

Overview:

- Constructed in 1971 by Federal Government (USACE); managed by SCWA staff
- Length **0.59 miles; Rio Vista**
- Only observes water when the restricted height levee on Little Egbert Tract is breached
- Solano County Public Works performs O&M Activities (Spraying, Mowing, Grading)
- Inspected twice a year by the Department of Water Resources

Challenges:

- Deficient levee; constructed with Sac River spoils per Egbert Tract Geotech exploration (Sand/Silt)
- Used for agriculture for about 50+ years until it was purchased by Westervelt (Private Investment Company);
 - Cache Slough Mitigation Bank
 - Little Egbert Tract Multi Benefit Project
 - Potential to impact City of Rio Vista (Flood & Airport)



Flood Control | Flood Policy & Programs

SOLANO COUNTY WATER AGENCY



REVISED DRAFT Flood Management Policy

(11-20-18)

Ver. 9

Introduction

The Solano County Water Agency (SCWA) Board of Directors recognized the need to define SCWA's role in flood management and included that need in their 2016 – 2025 Strategic Plan (Goal #3, Objective B).

Goal #3: Flood Management: Implement SCWA's role in flood management.

- B Define SCWA's role in flood management.

SCWA's Water Policy Committee was tasked with developing a draft policy for consideration and approval by the full Board. The following represents the Committee's best thinking.

Overview

There currently is no one agency responsible for flood management in Solano County. Responsibility for flood management runs the gamut from areas of overlapping jurisdiction to areas not actively served by flood management agencies. Additionally, there is no consistent coordination between upstream and downstream users. Given that one person's drainage has the potential to be another person's flood, the need for coordination is evident.

The Committee recognizes that the residents of the County would benefit from a regional approach to flood management, and that SCWA is well positioned to facilitate, coordinate, communicate and collaborate with the County and the cities, irrigation districts, reclamation districts, and resource conservation districts (hereafter called "stakeholder agencies"¹) and other interested parties within Solano County. Currently, SCWA is responsible for operations and maintenance of the Ulatis Flood Control Project and the Green Valley Flood Control Project. SCWA also has authority to deal with flood control matters within the boundaries of SCWA, though SCWA is not a first responder.

¹ Stakeholder agencies include: Solano County; the cities of Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, Vallejo; Reclamation District 2068; Main Prairie Water District; Solano Irrigation District; Dixon Resource Conservation District (RCD); Solano RCD; and Suisun Marsh RCD.

No One Agency Responsible for Flood Management in Solano

- Approved Flood Management Policy Dec-2018

Updates to: (a) Master Drainage Plan, (b) Hydrology Manual

SCWA as a "clearinghouse" for development review (flood management)

Convene Flood Management Technical Group

Assist County/Cities/Agencies/Private Property

- Small Grant Program (\$50K budget, small flood projects, 80% cost-share)
- Large Flood Projects (review standing policy, 1/3 Cost-Share)
- Advocate on behalf of cities, agencies, and the County

Develop Countywide Best Management Practices (BMPs)

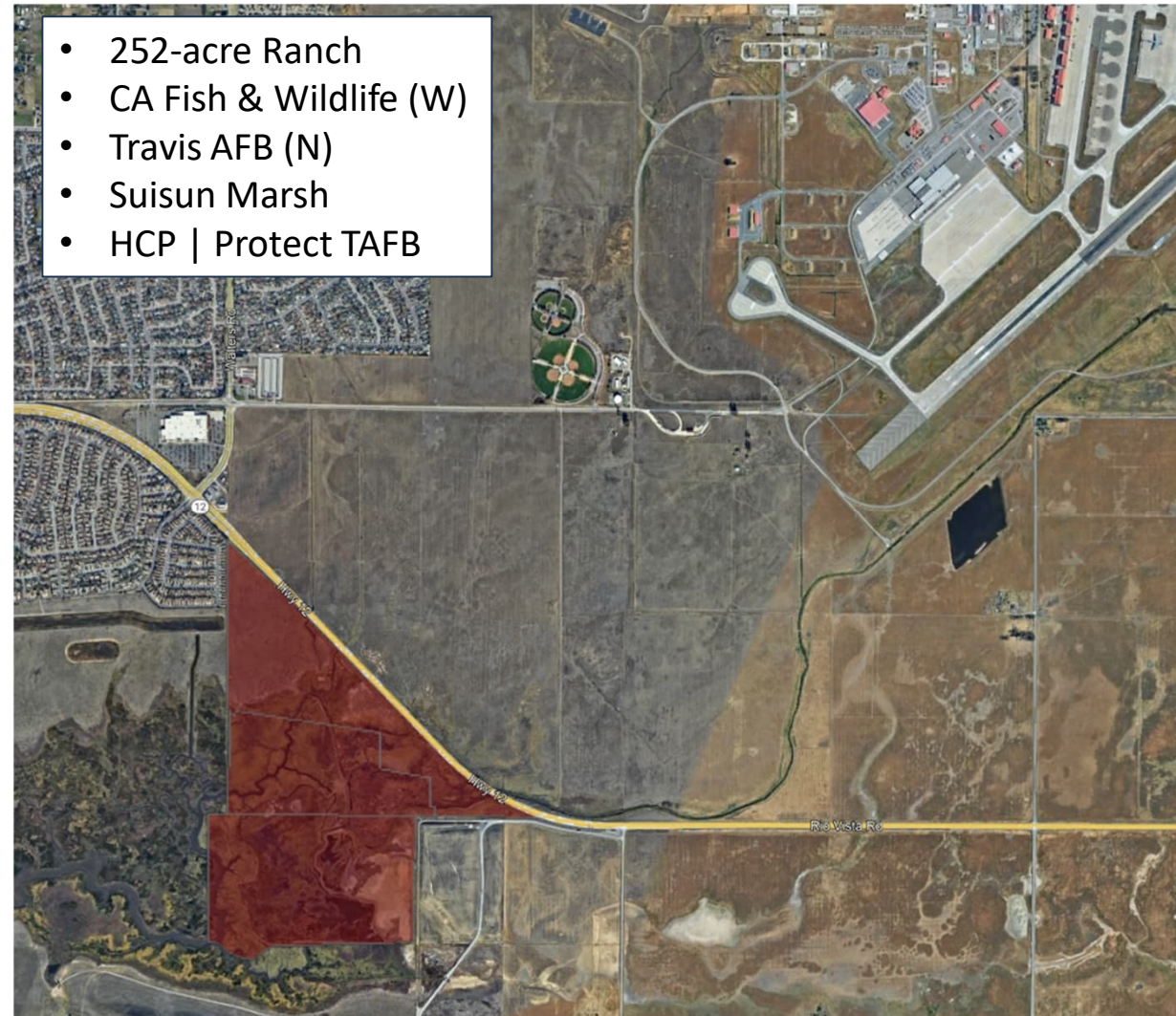
SCWA to lead resident/landowner education

Challenge: All ASW Fund Support (General Fund)

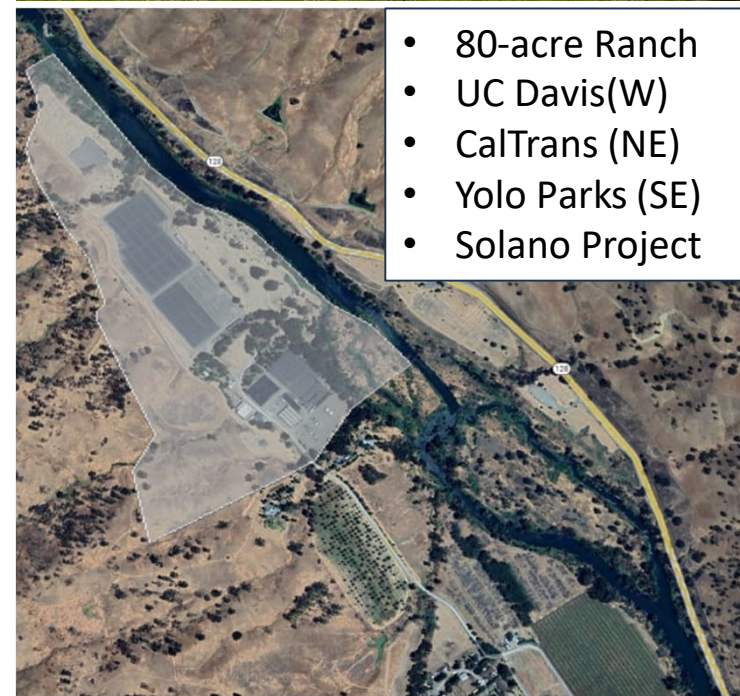
Facilities | Peterson Ranch



Facilities | Lang Tule Ranch



Facilities | Sackett Ranch



- 80-acre Ranch
- UC Davis(W)
- CalTrans (NE)
- Yolo Parks (SE)
- Solano Project

Facilities | Fleet Vehicles & Equipment



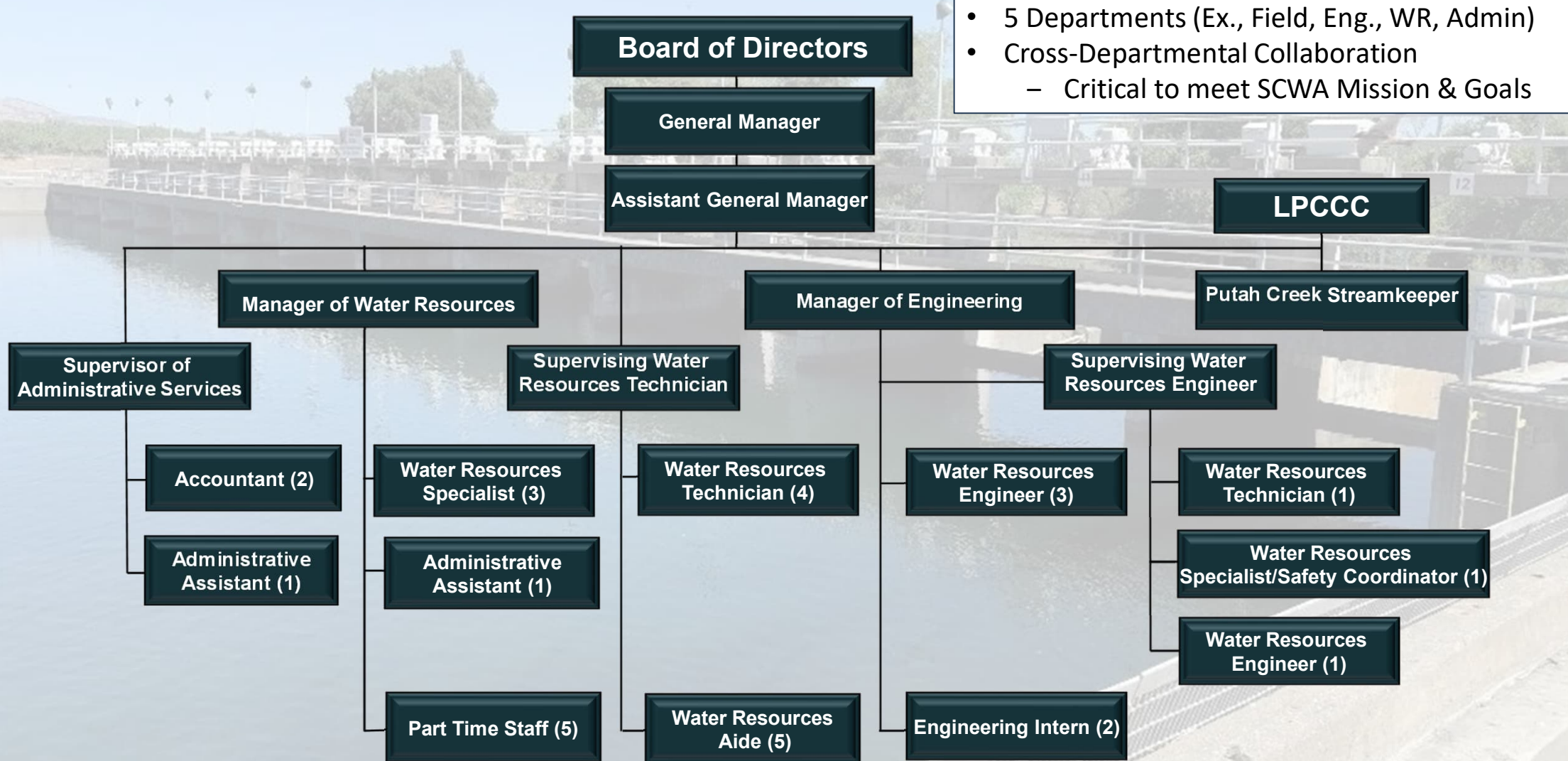
- 22+ Vehicles (Cars, SUVs, Trucks)
- 100+ Field Equipment (Former Military)
 - Low Use Vehicles/Equipment
- Heavy Equipment (Tractors, Dump Trucks,...)
- Solano Project & Ulatis Equipment



Field Support | Other Projects



Administration | Organizational Chart



Administration | Human Resources



Administration | Safety & Risk Management

Safety Committee Formation and Meetings

- Updated IIPP
- Discuss safety improvements

Safety Policy Updates

- Evacuation Plans
- Wildfire Smoke Policy
- Workplace Violence Policy

Job Hazard Analysis (JHA)

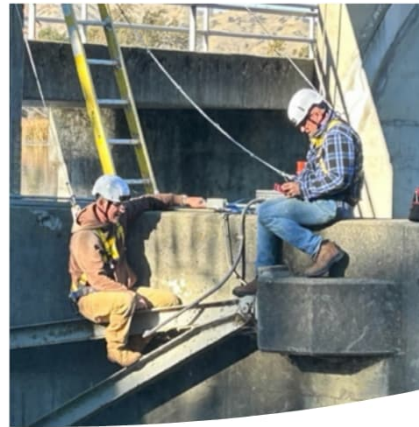
- Review hazards for high-risk projects

Toolbox Talk

- Hard Hat, Heat Illness Prevention, etc.

Heavy Equipment Certifications

- Forklift, tractor, etc.



Administration | Accounting & Budget

4 General Ledger funds – Balance of \$64 million

- **Solano Project (General Fund/Unrestricted)** – This fund accounts for the OM&R for the Solano Project. Also includes costs for Flood Control, Water Conservation, AIS (Mussel) Program, Putah Creek (Non-Accord), and the Habitat Conservation Plan.
 - **Fund Balance of \$14 million**
- **State Water Project (Restricted)** – This fund accounts for SCWA's water supply contract with DWR for repayment of all costs associated with the NBA.
 - **Fund Balance of \$37 million**
- **Ulati Flood Control (Restricted)** – This fund accounts for the OM&R for the Ulati Flood Control Facilities.
 - **Fund Balance of \$11.5 million**
- **Green Valley Flood Control (Restricted)** – This fund accounts for the OM&R for the Green Valley Flood Control Facilities.
 - **Fund Balance of \$500K**

Accounts
Payable/Receivable

Payroll

Expense
Management

Forecasting

Budget

Audit



Financial Reports



Closing Thoughts & Questions

Mission focused Agency (Water Resources)

Large Breadth of Activities (Water)

**Passionate & Dedicated Multi Disciplinary
& Multi-Generational Team**

Ever-Changing Conditions

