REGIONALSAN
TAKING THE WASTE OUT OF WATER
Sacramento Regional County Sanitation District

A Model Multi-Benefit Recycled Water, Groundwater Storage, and Conjunctive Use Project

NorCal Watereuse Chapter Meeting
December 8, 2017

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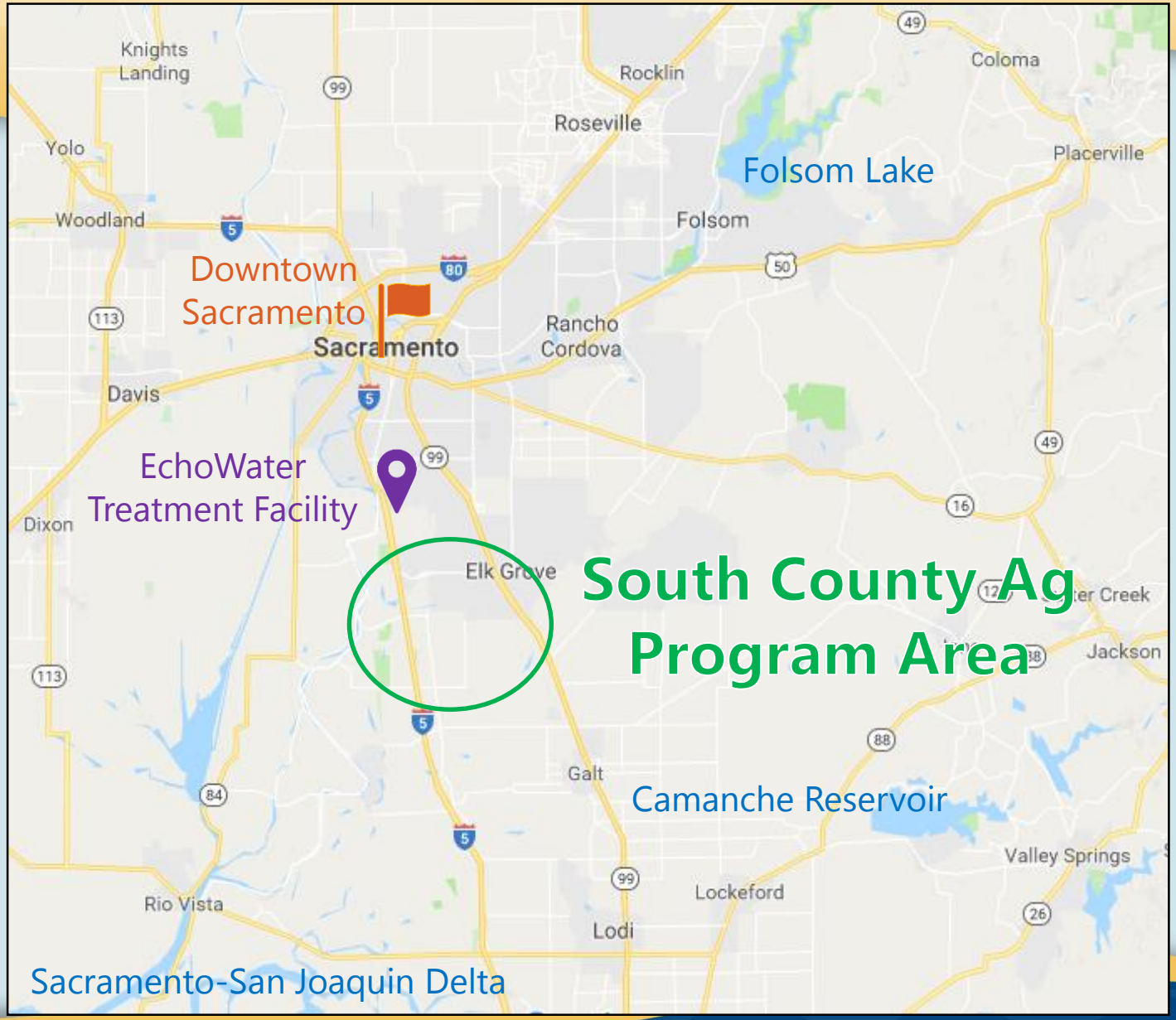
Jose Ramirez, Regional San

Background

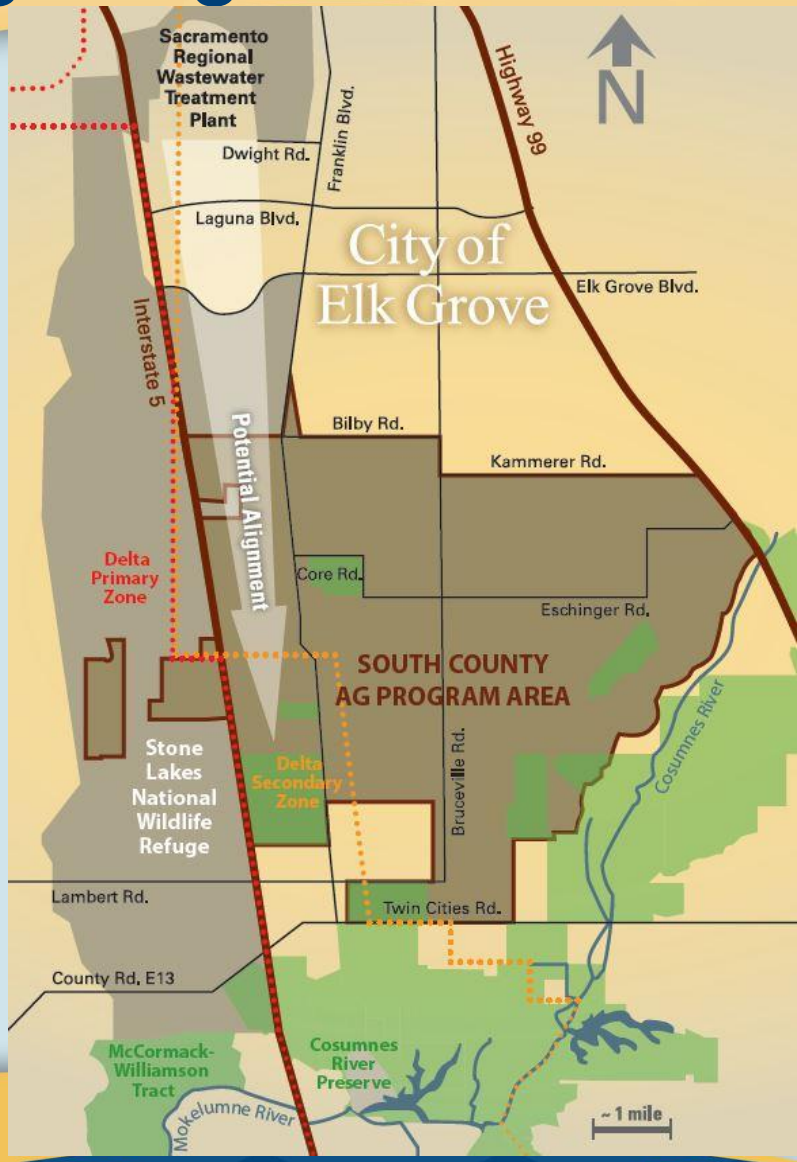
- Water Recycling Goals & Master Planning
  - 2004 – Board of Directors goal
    - 30 to 40 MGD by 2024
  - 2007 – Water Recycling Opportunity Study
- Permitting
  - 2010 NPDES Permit: All effluent tertiary recycled water
- South County Ag Program
  - 2014 – USBR Title XVI Feasibility Study
  - 2015 – Draft Facilities Plan Report
  - 2017 – Completed EIR

Where is South County?



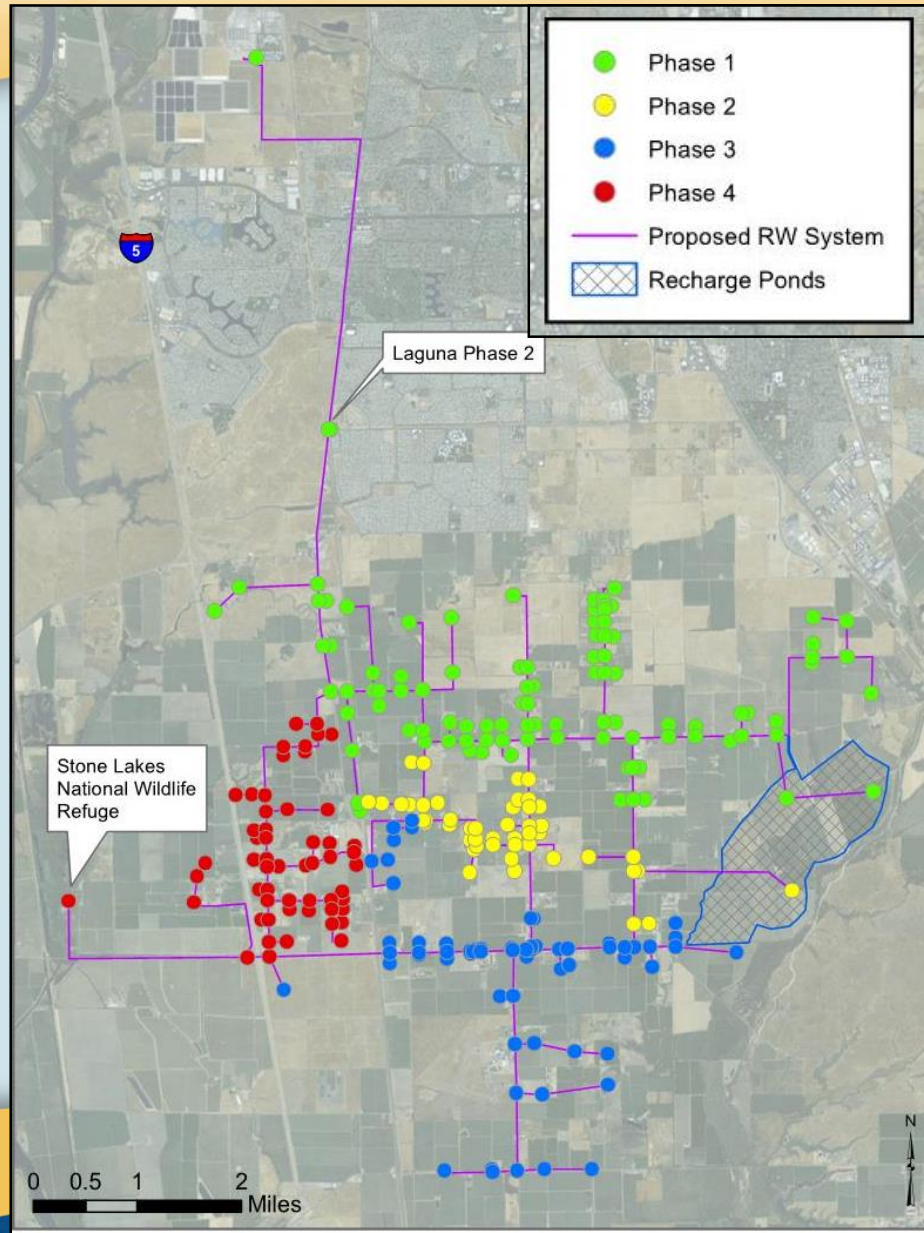
Project Overview
South County Ag Program

- Focus: South Sacramento Co.
- Goals
  - Beneficial use of effluent
  - Sustain agriculture lands
  - Conserve habitat
  - Improve groundwater levels

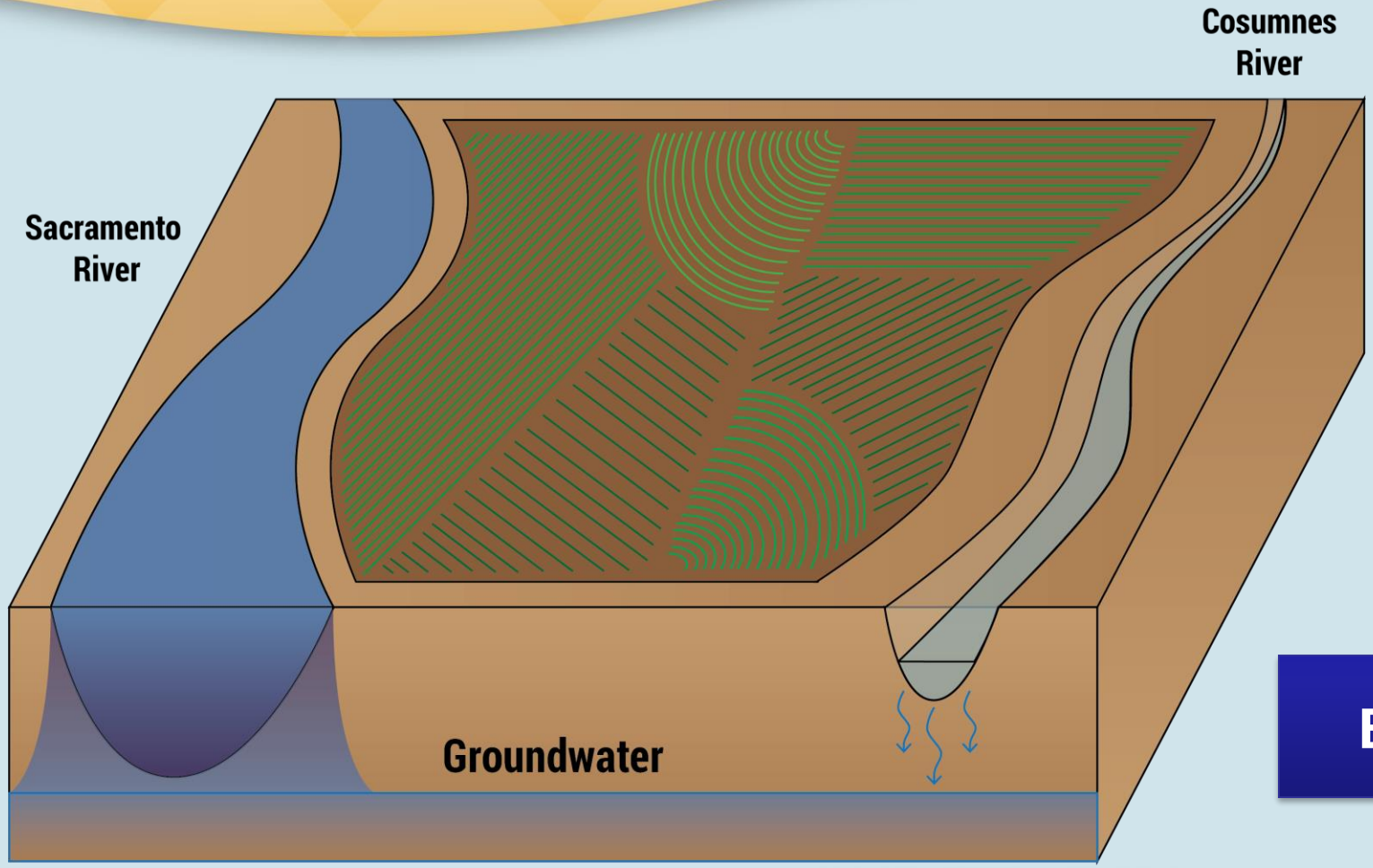


Project Specifics

- Volume: 50,000 acre-feet/year
- Irrigation Area: 16,000 acres
- Total Program: $250 million
  - Phase 1: $128 million
- 60 miles of pipelines
  - 17 mi of 36-in to 54-in
  - 43 mi of 4-in to 3-in
- 4,200-hp pump station
  - 5 +1 pump arrangement
  - 700-hp each

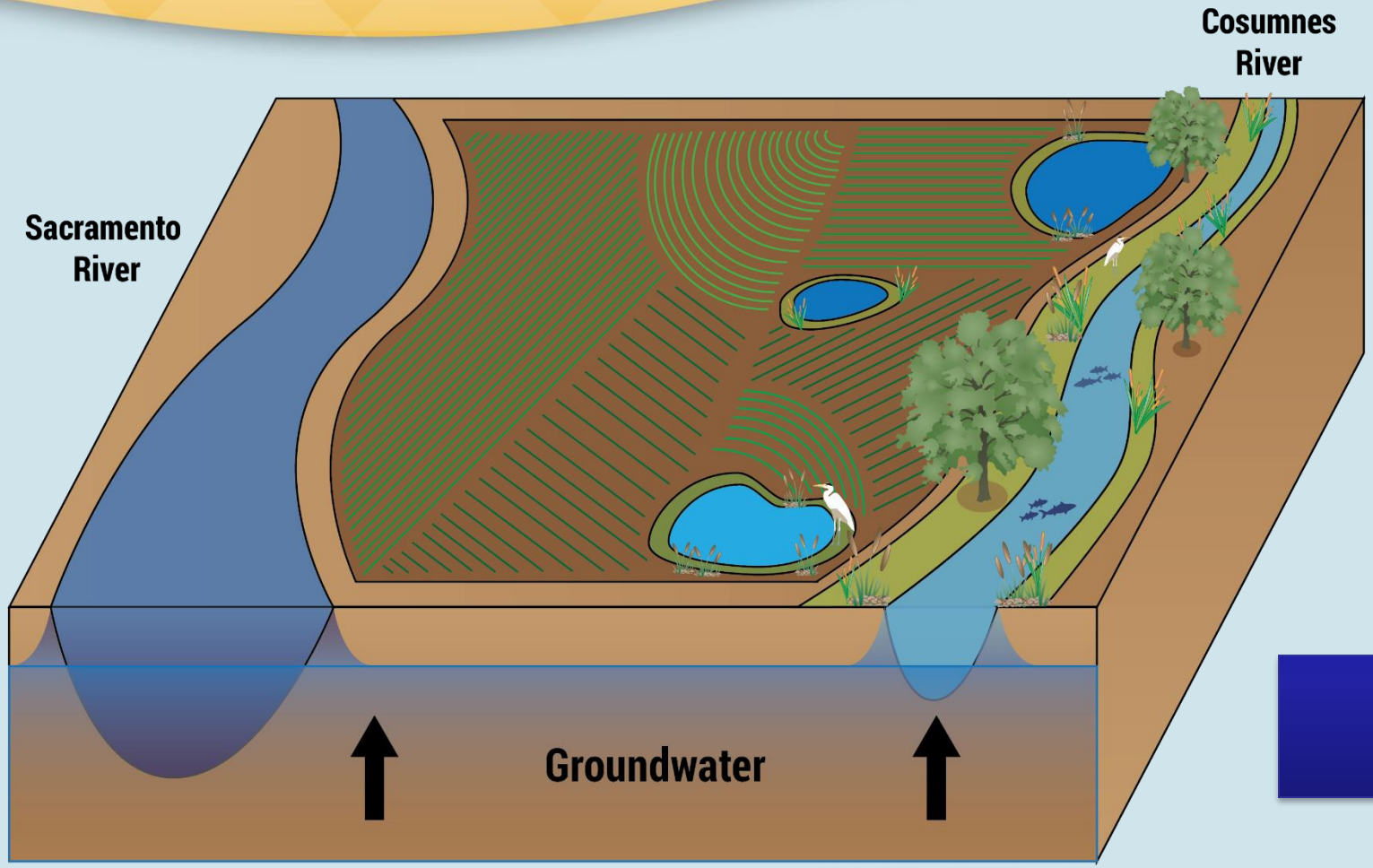


Summary of South County AG Program's Multiple Benefits



Before

Summary of South County AG Program's Multiple Benefits



After

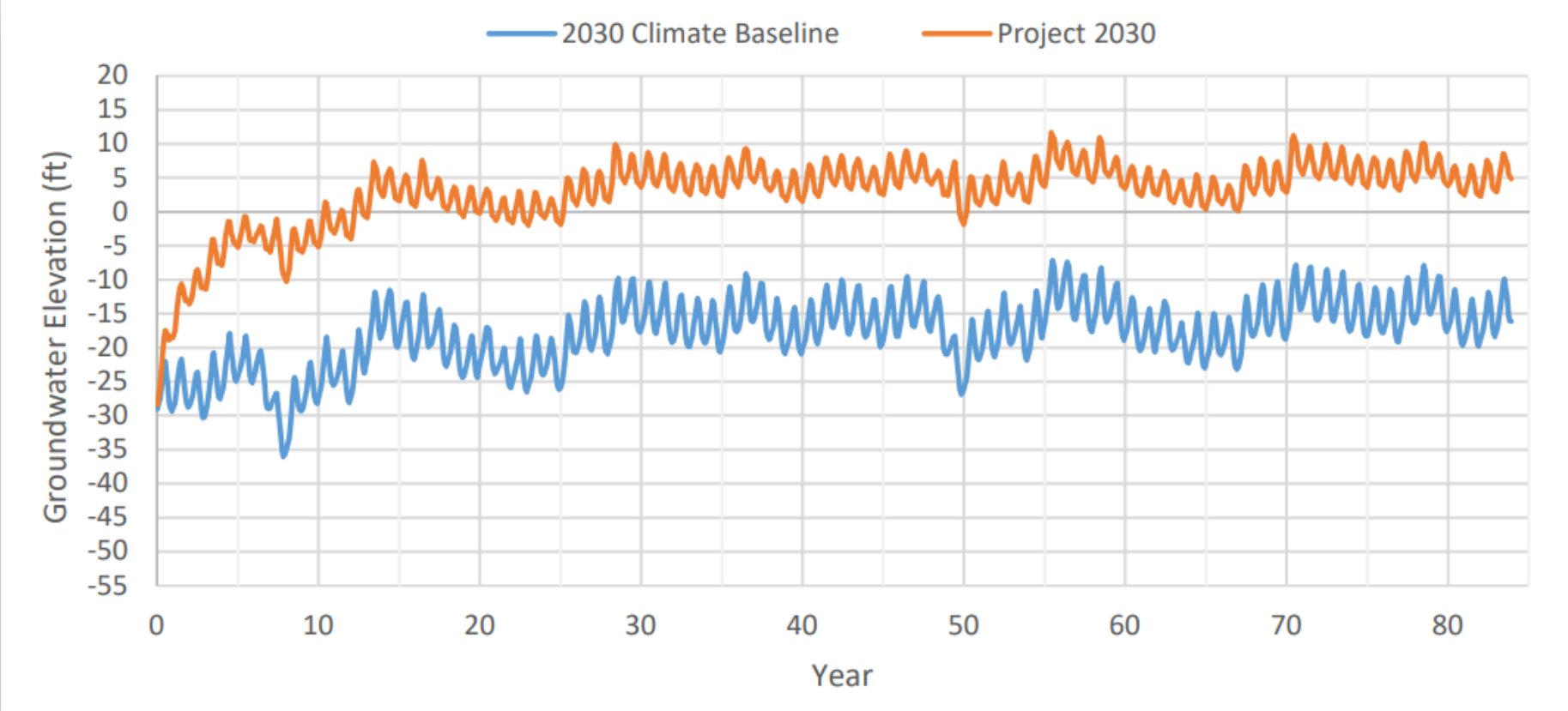
Facilitating Collaboration & Building Partnerships

South County Ag Public Benefits (Over $1B)

Public Benefits

- Groundwater Restoration
- Increased Instream Flow
- Ecosystem
- Water Quality
- Recreation

GW Elevation with Project
— Comparison to Baseline —



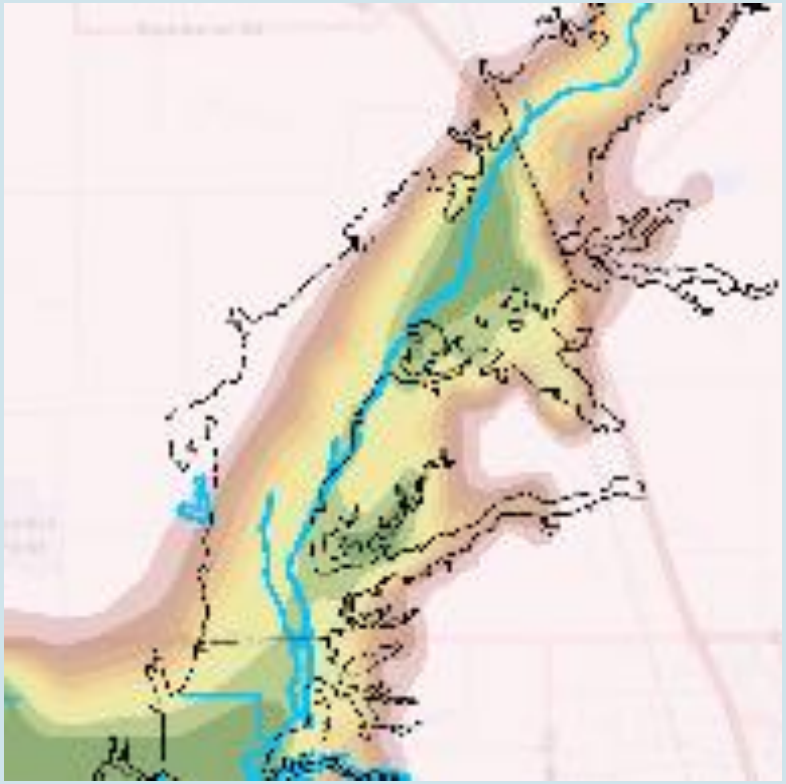
Increase in Groundwater Storage

Difference between Project 2030 versus Baseline 2030

Folsom Dam picture courtesy of Freshwaters Illustrated

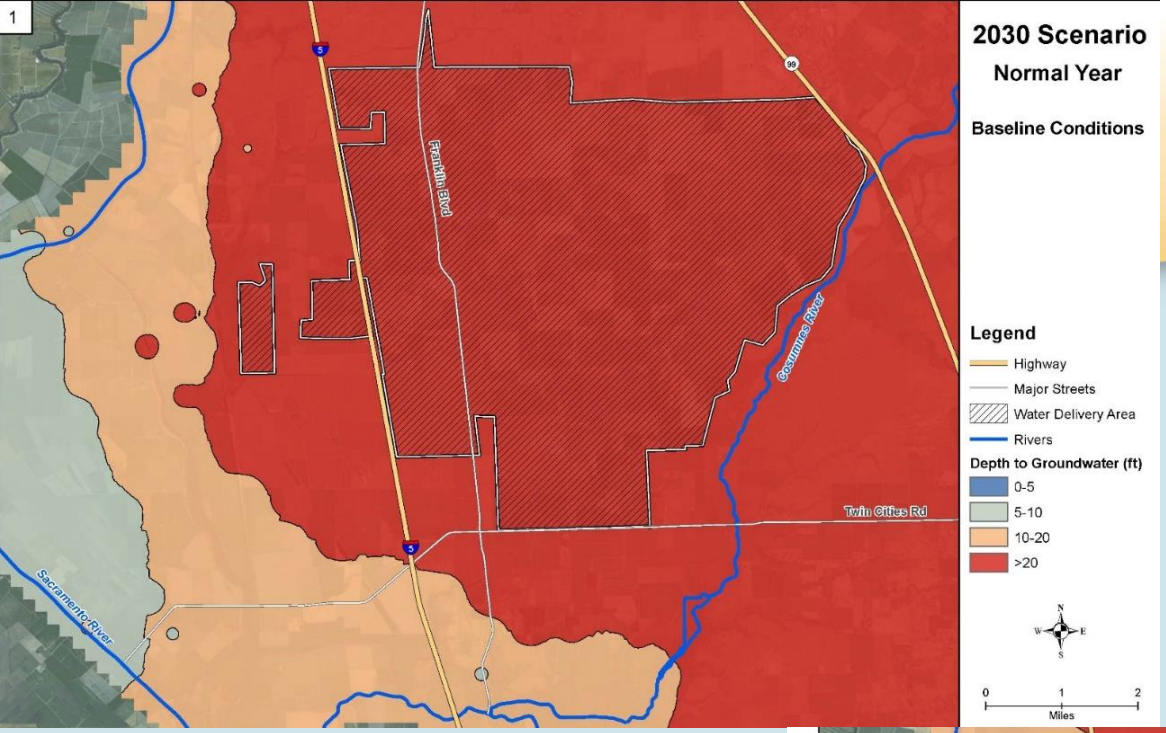
Restore Consumes River Flows

Baseline



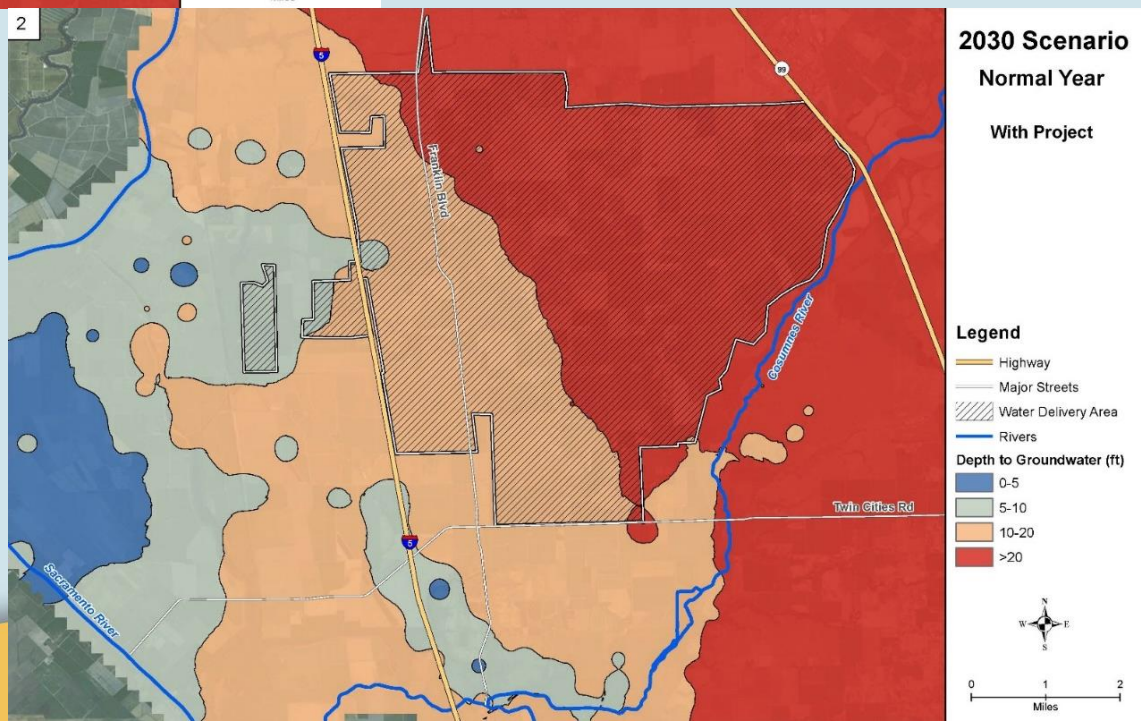
Project

Dark Green: 90-100% Groundwater Elevations within 25’ of surface



2030 Water Table
Baseline
Red - 20 feet below surface or greater

2030 Water Table
With Project
Red - 20 feet below surface or greater



Ecosystem Benefits ($320M)

Additional 3,500 acres of *sandhill crane* habitat, which could support up to 700 additional individuals

Additional 500 acres of *vernal pool* habitat, which supports many listed species

Longer migration window for fall-run *Chinook salmon* as a result of increased flow volume in the Cosumnes River

Improved groundwater conditions and strategic water delivery can improve up to approximately 1,800 acres of *wetlands and riparian forests* by 2030

Other Non-Monetized Public Benefits

- Improved Climate Change Resiliency
- Habitat Connectivity – adjacent to other conservation projects
- Preserving Working Farmlands
- Improving Groundwater Dependent Ecosystem Science
- Emergency Response

South County Ag Non-Public Benefits ($123M)

Non-Public Benefits

- Increased water supply reliability for banking partners and ag users
  - Improved groundwater storage: 290,000 AF within 20 years; 450,000 AF once achieve equilibrium
  - Conjunctive use: up to 32,500 AFY during critical dry years
- Avoided fertilizer costs benefits ag users
- Avoided costs related to pumping treated wastewater to Sacramento River

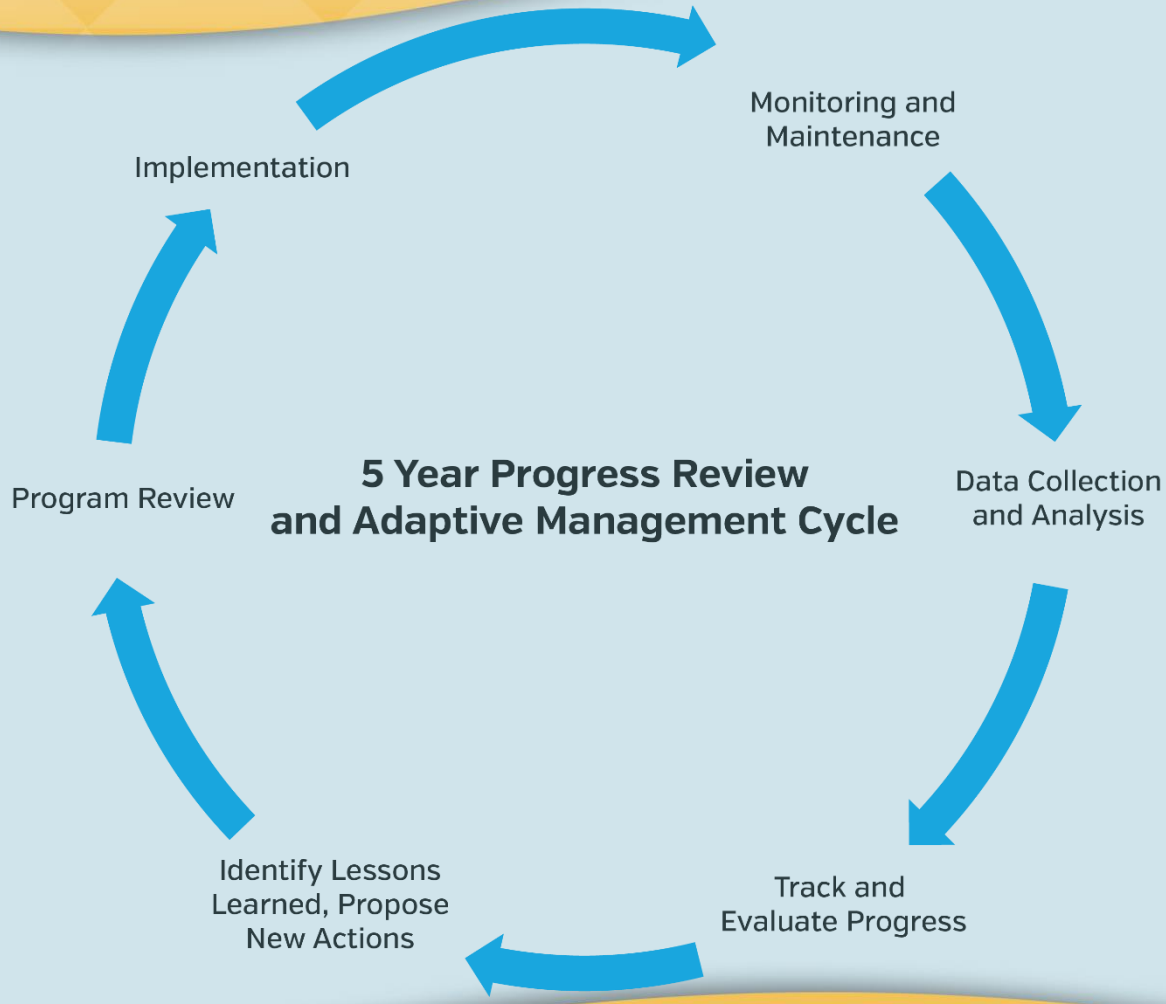
Customer Concerns

- Extraction of banked groundwater
- Water quality & reliability
- Crop marketability
- Market & user assurances
- Governance
  - Need representation
  - Yet another government agency
- Recycled water pricing & onsite retrofit costs

How Will Public Benefits Be Achieved?

- Implement Conjunctive Use Program
  - Contracts with ag users and water suppliers
  - Commitment to use recycled water
  - Targeted Delivery: focus on most ecologically important parcels
  - Establish conservation easements or long-term leases
  - Implement Operations Plan: depending on water year type
  - Focus on timing and location of withdrawals to maintain environmental benefits
- Implement groundwater accounting program & integrate with SGMA
  - 70% to GW recharge & 30% for extraction during critically dry years

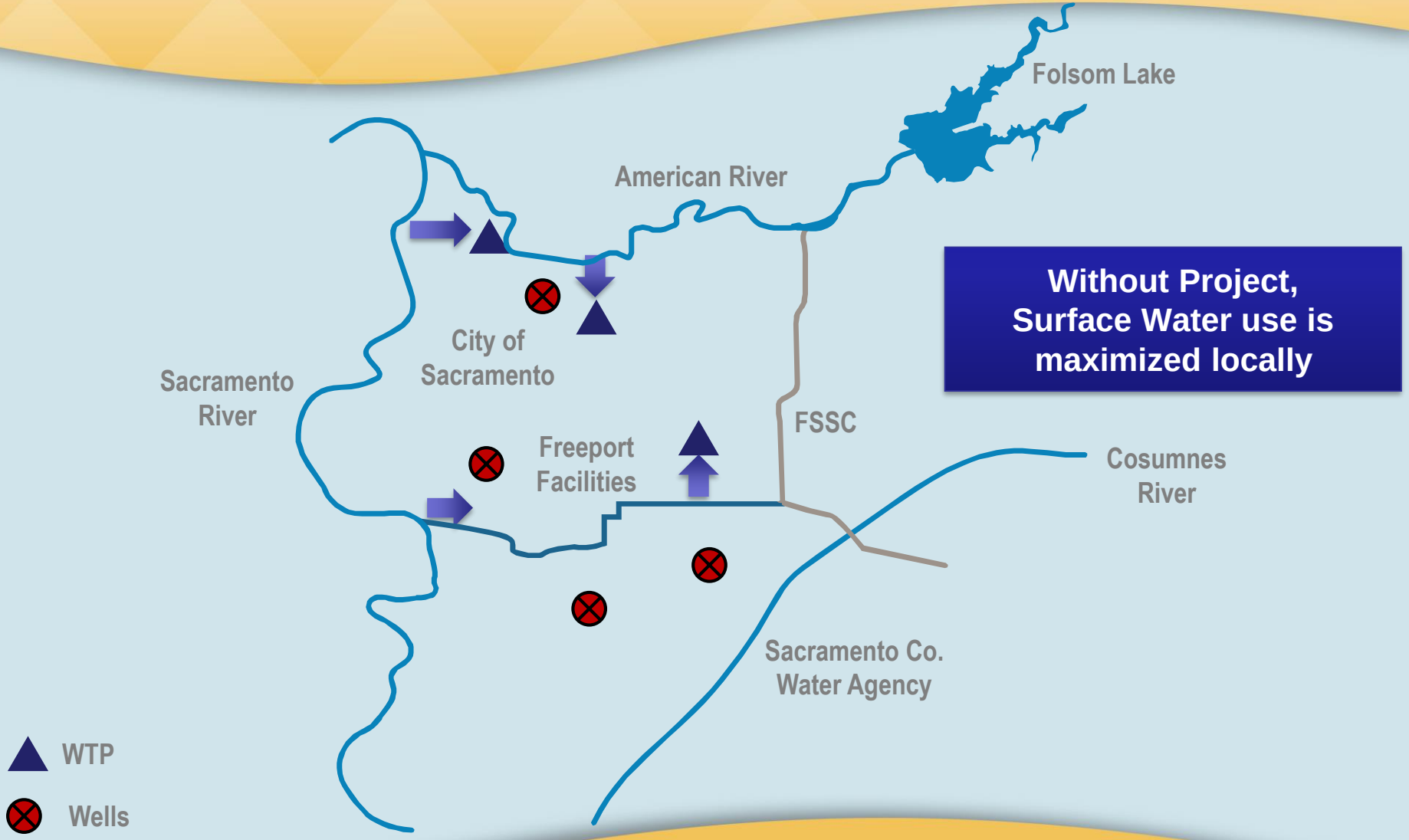
Evaluation & Adaptive Management



Water System Flexibility Benefits & Affected Regional Water Facilities

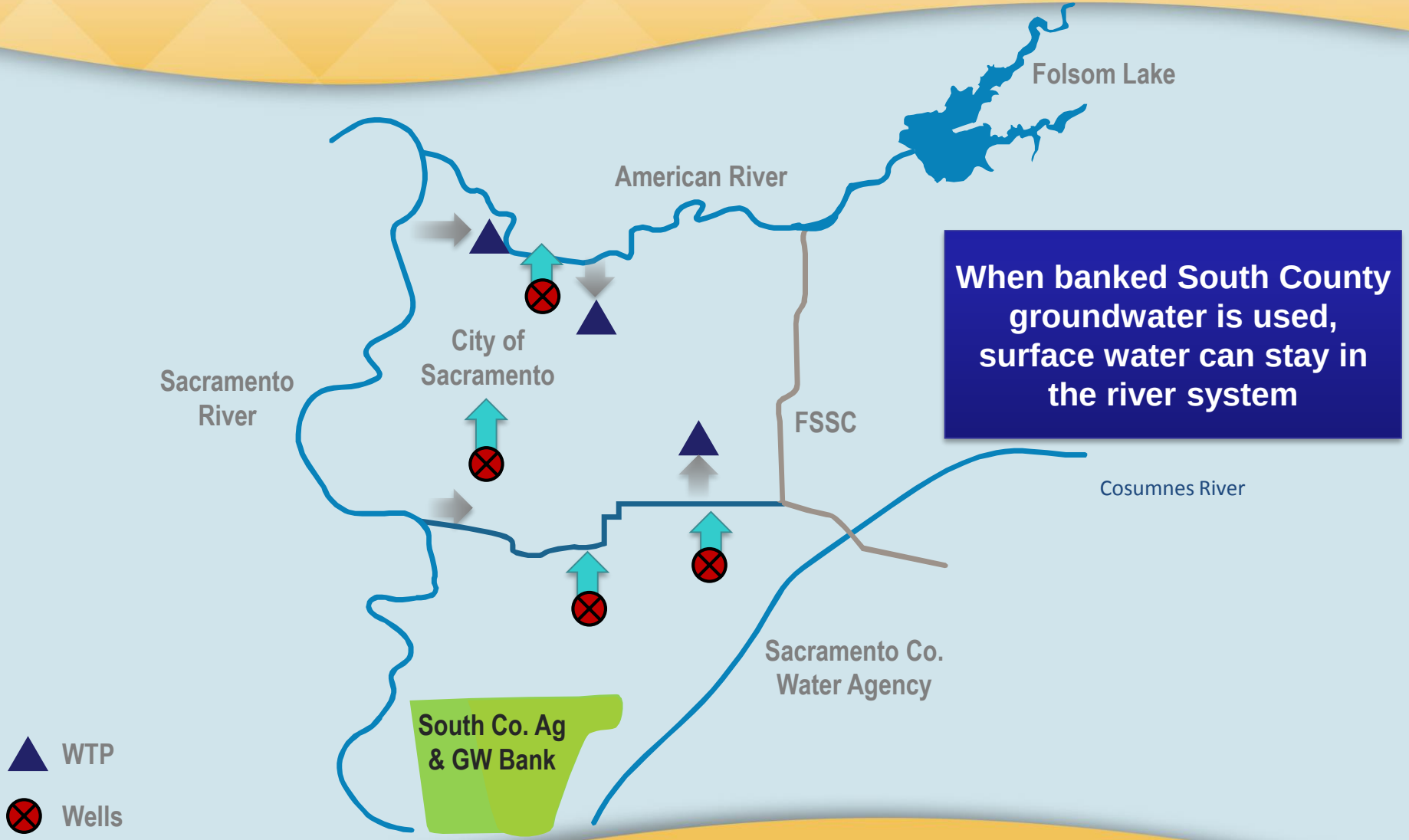
- Conjunctive use provides flexibility to manage water resources during droughts
  - Limits surface water diversions
  - Allows shift to groundwater
- Use existing extraction wells and distribution systems
- Reduced surface water diversions could be used by other entities for environmental, municipal or ag uses outside of the region

Water System Flexibility Benefits the Affected Regional Water Facilities



Without Project, Surface Water use is maximized locally

Water System Flexibility Benefits
Affected Regional Water Facilities



State and Federal Funding

- **State**
  - Clean Water State Revolving Fund
  - Water Storage Investment Program
  - Integrated Regional Water Management Plan

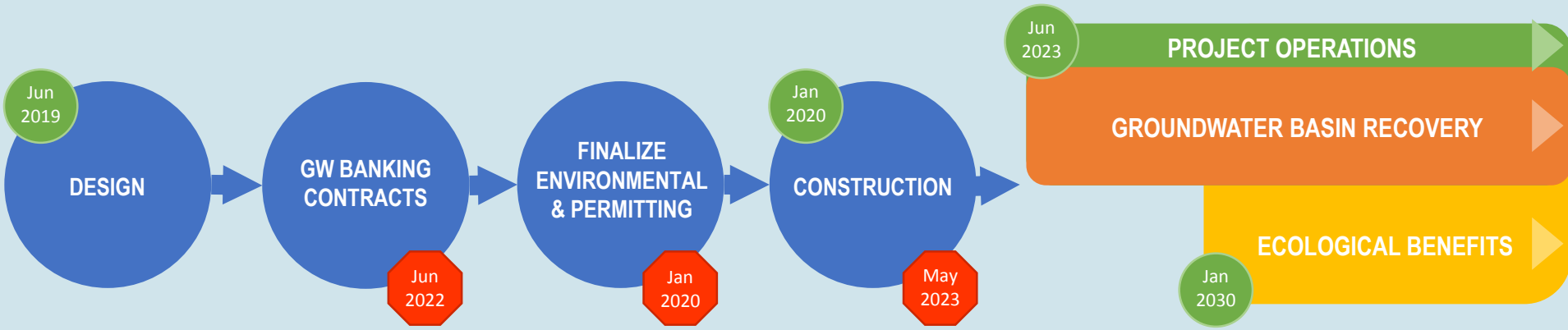
- **Federal**
  - USBR Title XVI and WaterSMART Programs
  - Water Infrastructure and Improvement for the Nation Act (WIIN, S.612)

Timeline and Milestones

Key milestones achieved to date with Program:

- Completed and approved USBR Feasibility Study
- Authorized under Title XVI and is included in list of eligible projects
- Completed 10% Facility Design Report
- Final and certified Environmental Impact Report
- Identified as a high-priority project in the Region’s IRWMP

Project Timeline and Milestones



Questions?

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www.regionalsan.com/water-recycling