



Prepared By:

The Nature Conservancy



Protecting nature. Preserving life.™

Multi-Benefit Conjunctive Use Concepts for South and Central Sacramento County

Agenda

- Background information
 - The Nature Conservancy and its local interests
 - The groundwater - surface water connection
 - Cosumnes River and Preserve hydrologic conditions
- Potential solutions
 - Regional water banking
 - In-lieu recharge
 - Direct recharge
- Findings, conclusions, next steps, questions



- **Conserving the lands and waters upon which all life depends**

The Conservancy's CA Water Program

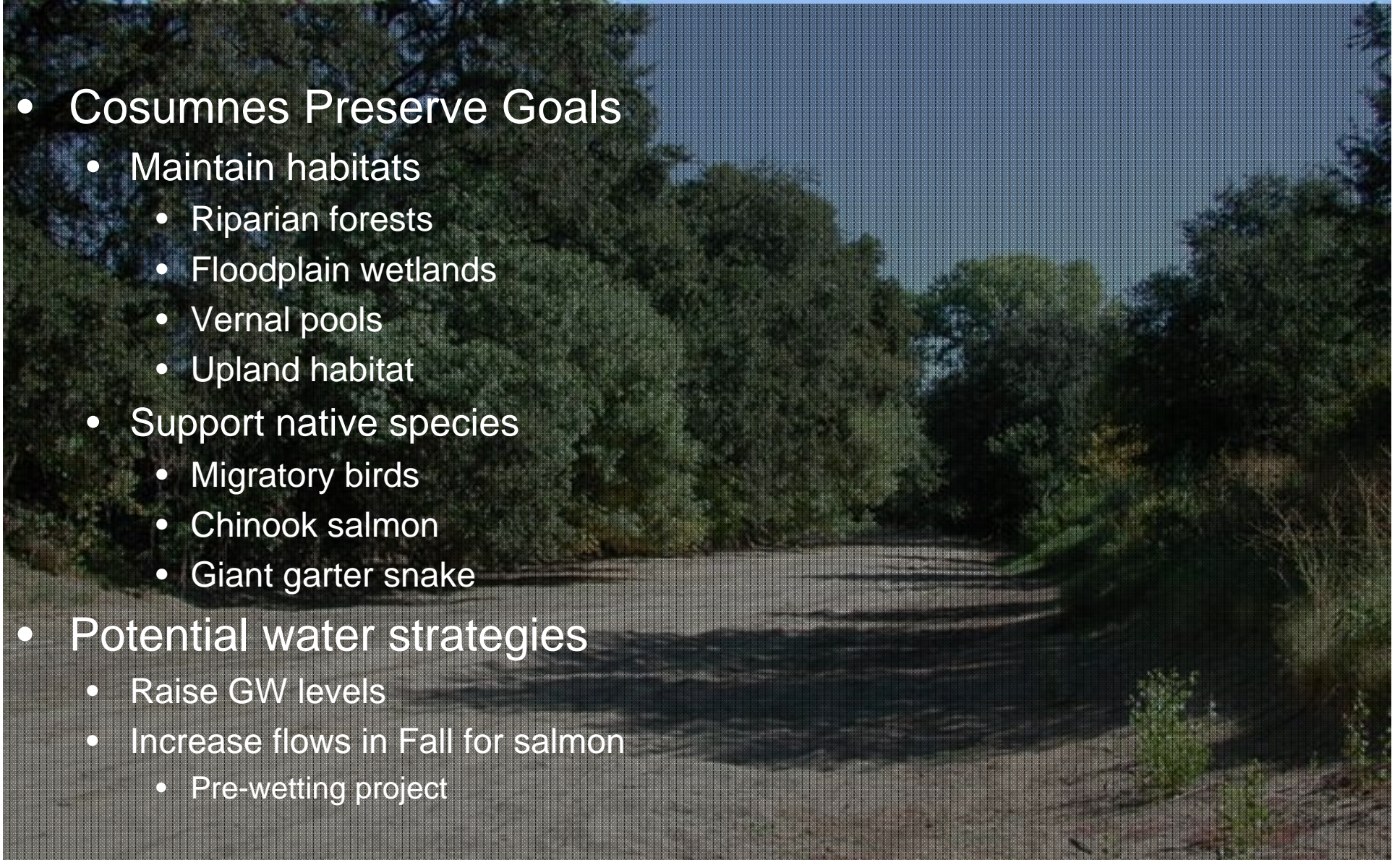
Sustainable Water for People and Nature



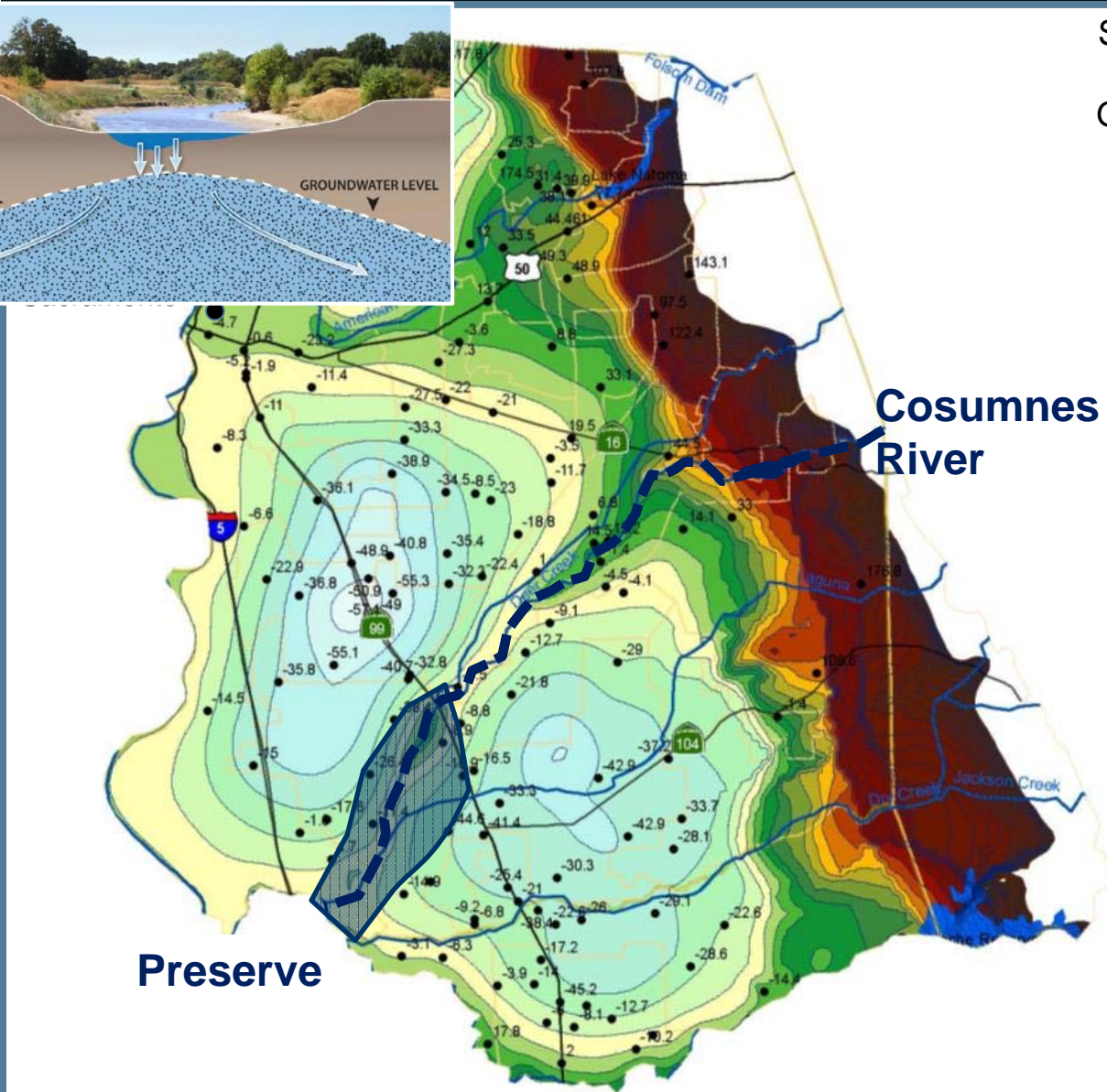
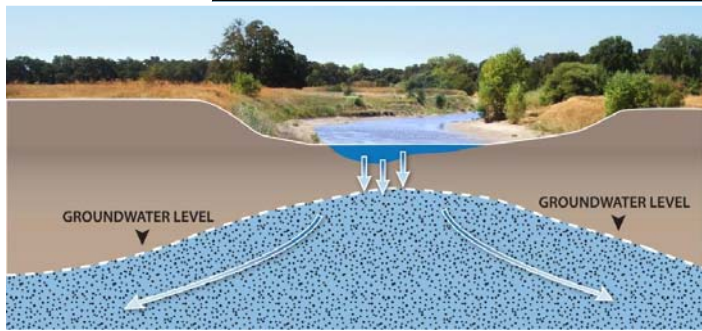
Solutions for ecosystems
Must work for people

The Conservancy's Interest in the Area: Cosumnes River in Late Summer

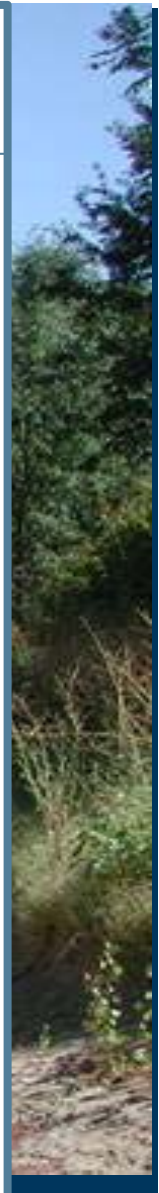
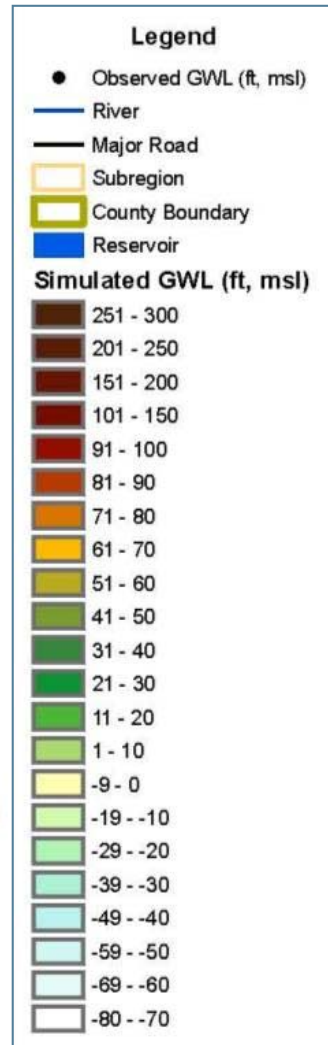
- Cosumnes Preserve Goals
 - Maintain habitats
 - Riparian forests
 - Floodplain wetlands
 - Vernal pools
 - Upland habitat
 - Support native species
 - Migratory birds
 - Chinook salmon
 - Giant garter snake
- Potential water strategies
 - Raise GW levels
 - Increase flows in Fall for salmon
 - Pre-wetting project



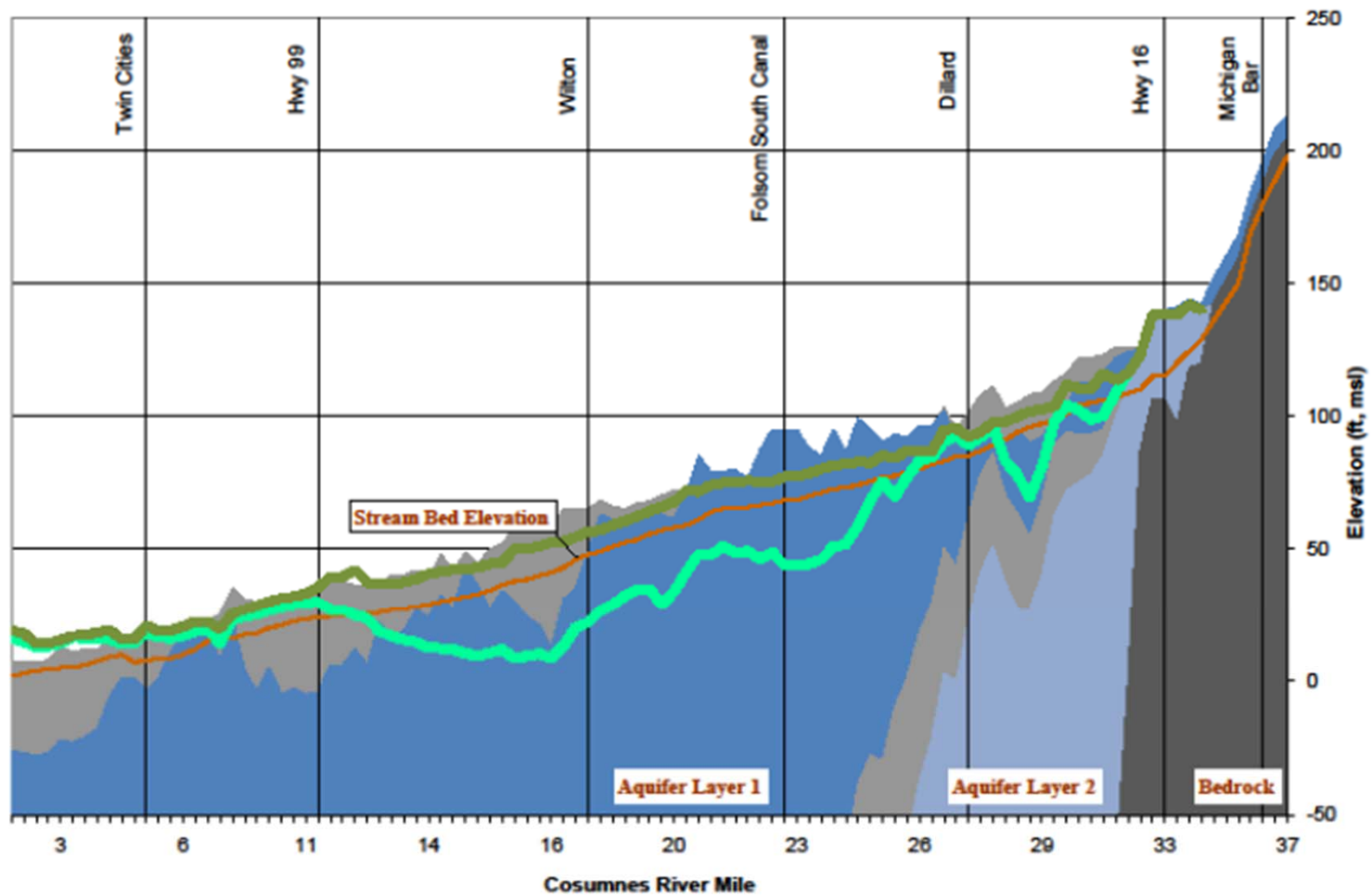
Cosumnes River in Late Summer



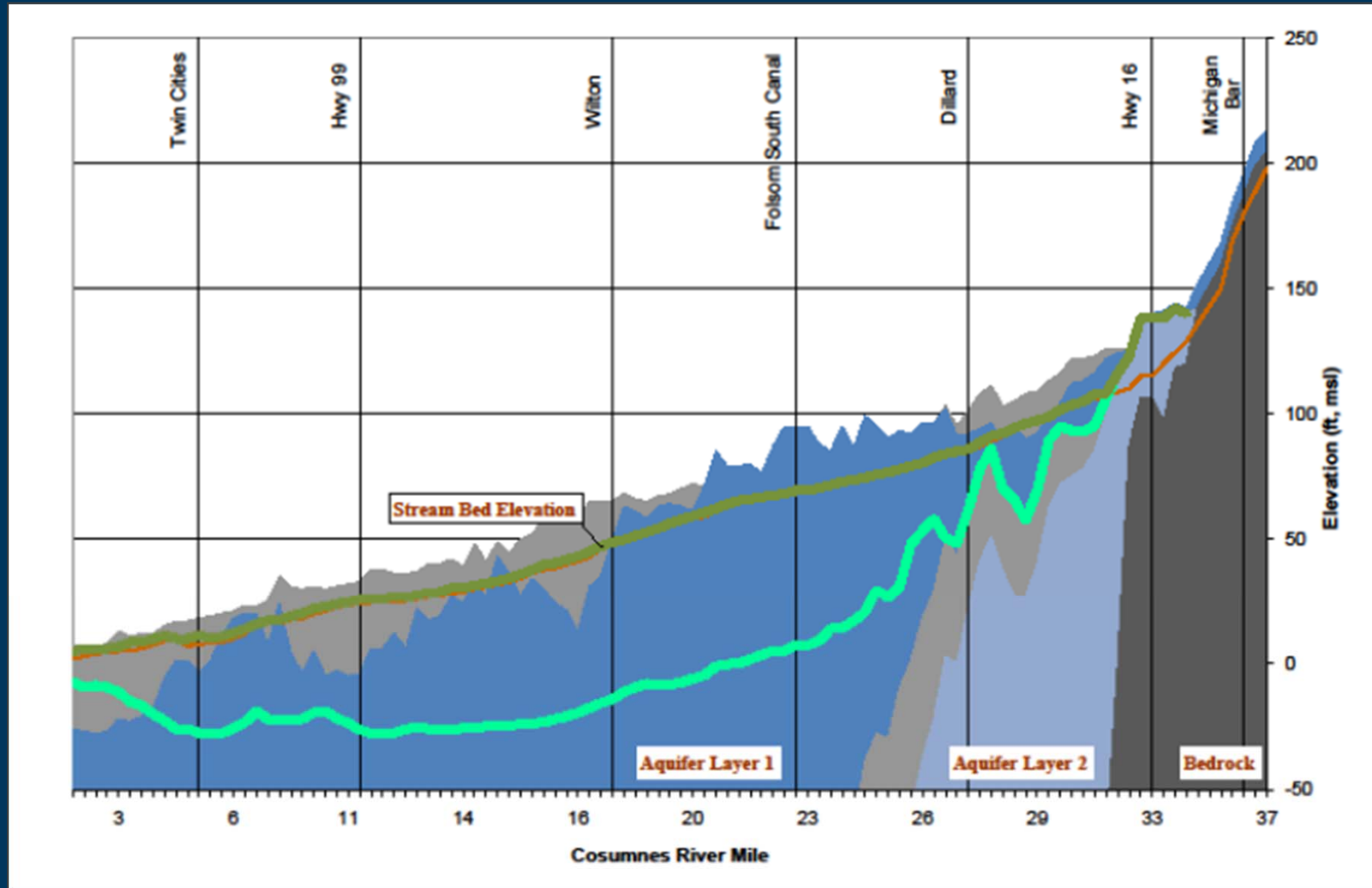
Sacramento County
Spring, 2003
Groundwater Levels



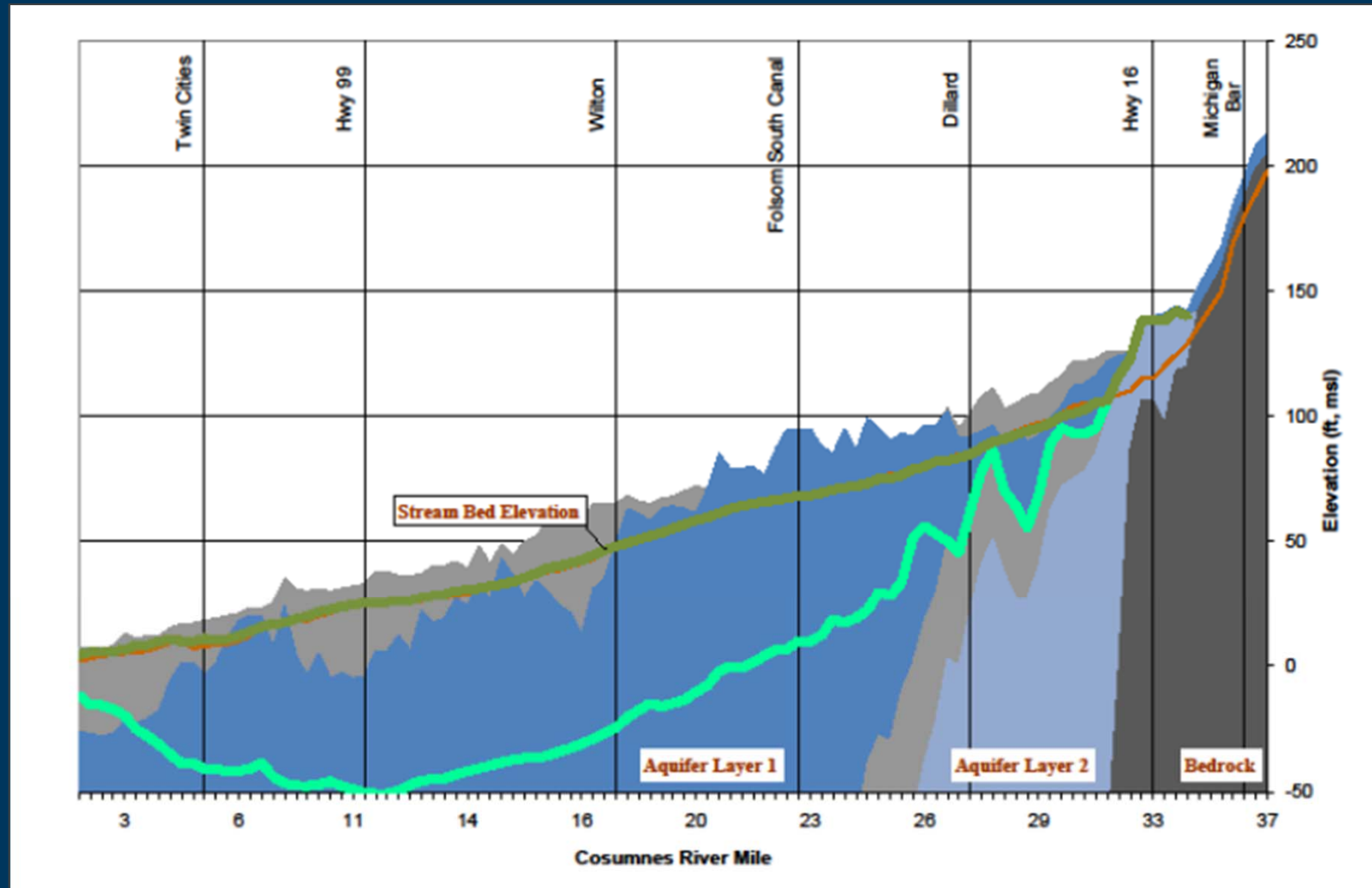
Simulated Hydrology of Cosumnes River *Wet Year*



Simulated Hydrology of Cosumnes River *Normal Year*



Simulated Hydrology of Cosumnes River *Dry Year*

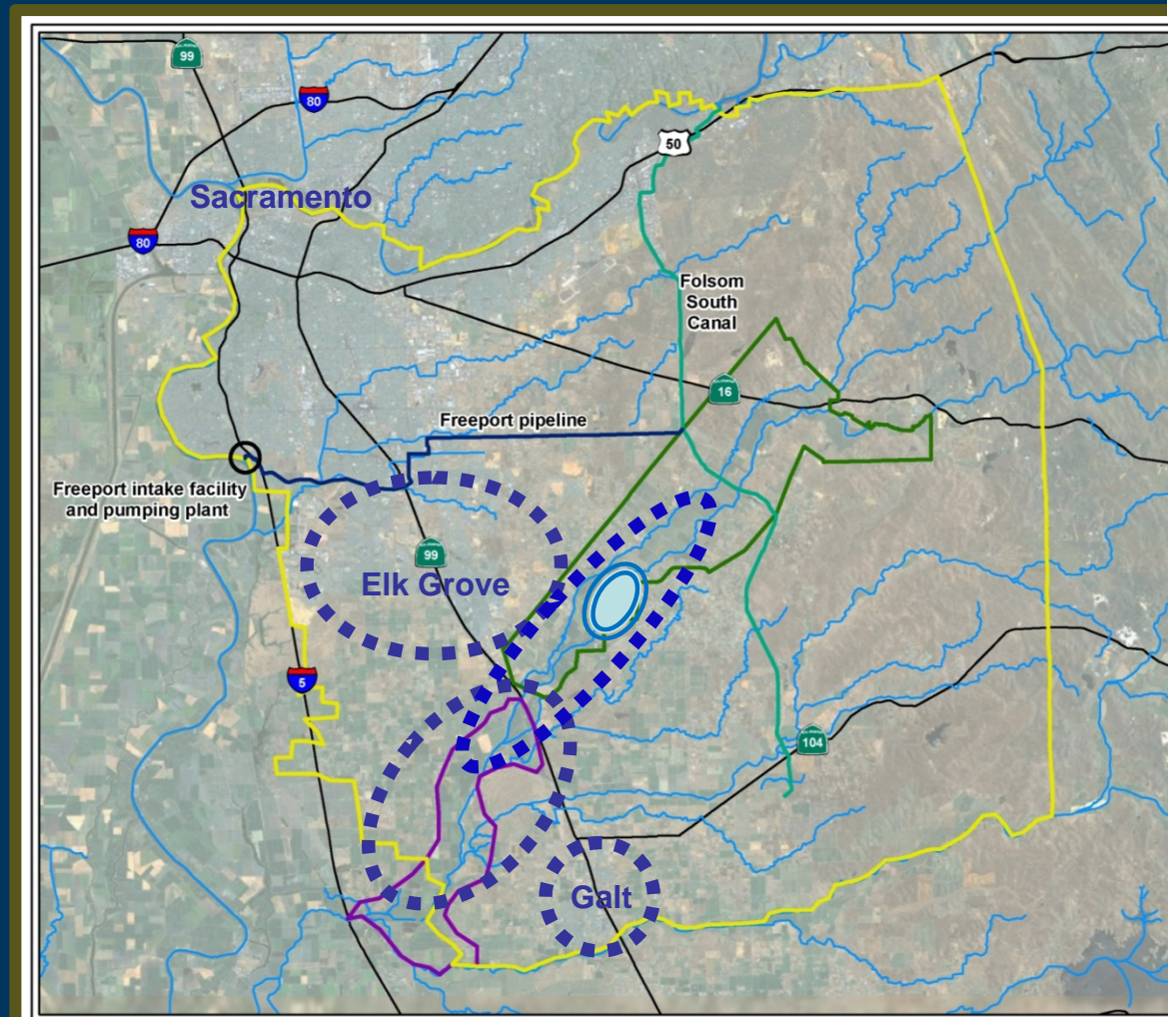


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Groundwater Banking Scenarios In-Lieu and Direct Recharge

1. In-lieu recharge
 1. Near preserve
 2. Elk Grove and Galt
2. Direct recharge
 1. Ponds near river
 2. Ag land flooding



In-Lieu Recharge Near Preserve

- 25,000 AF maximum
- 6,500 AFY average net recharge

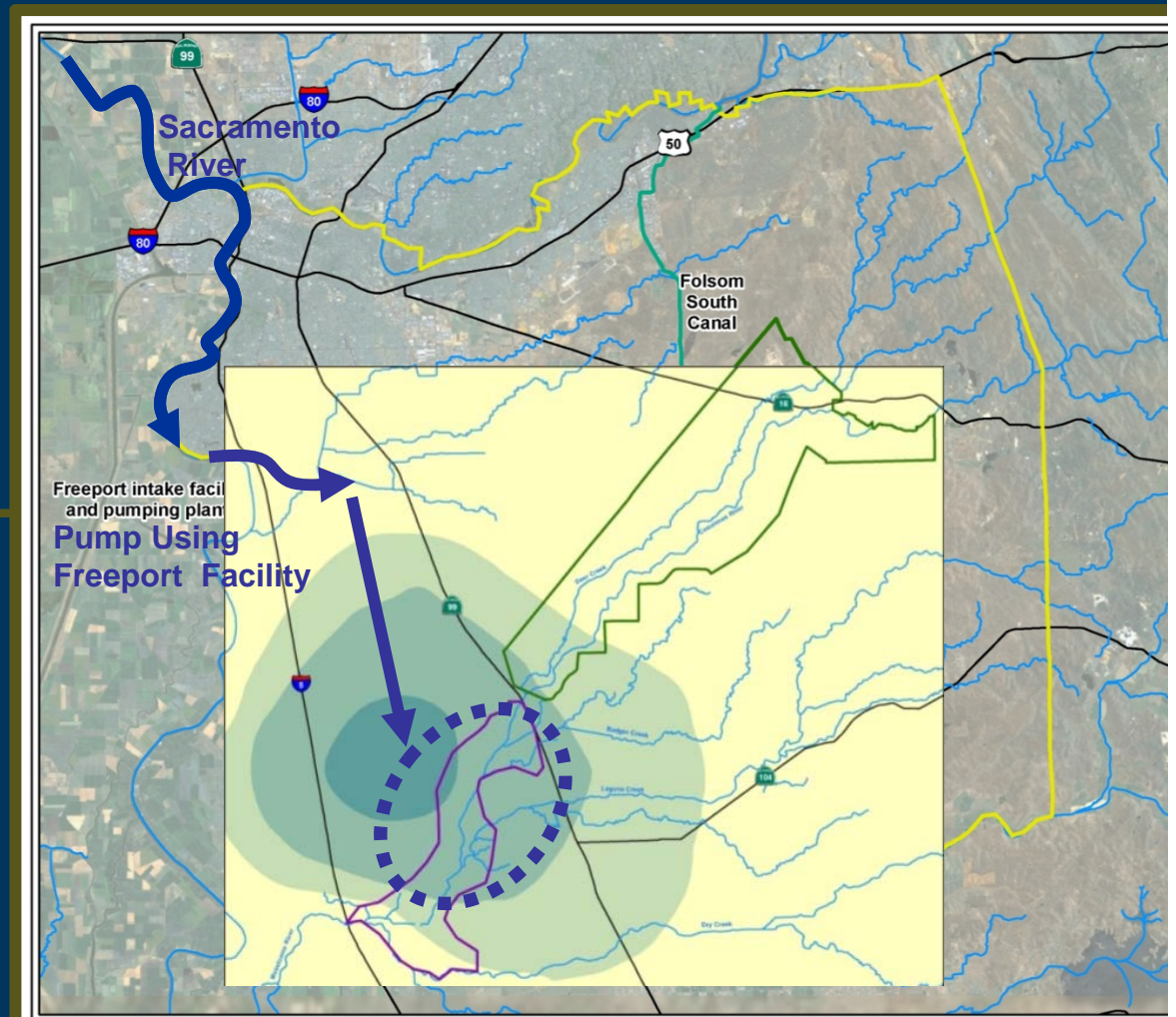
GW Level
Improvement
With Project

>10 ft

4 - 10 ft

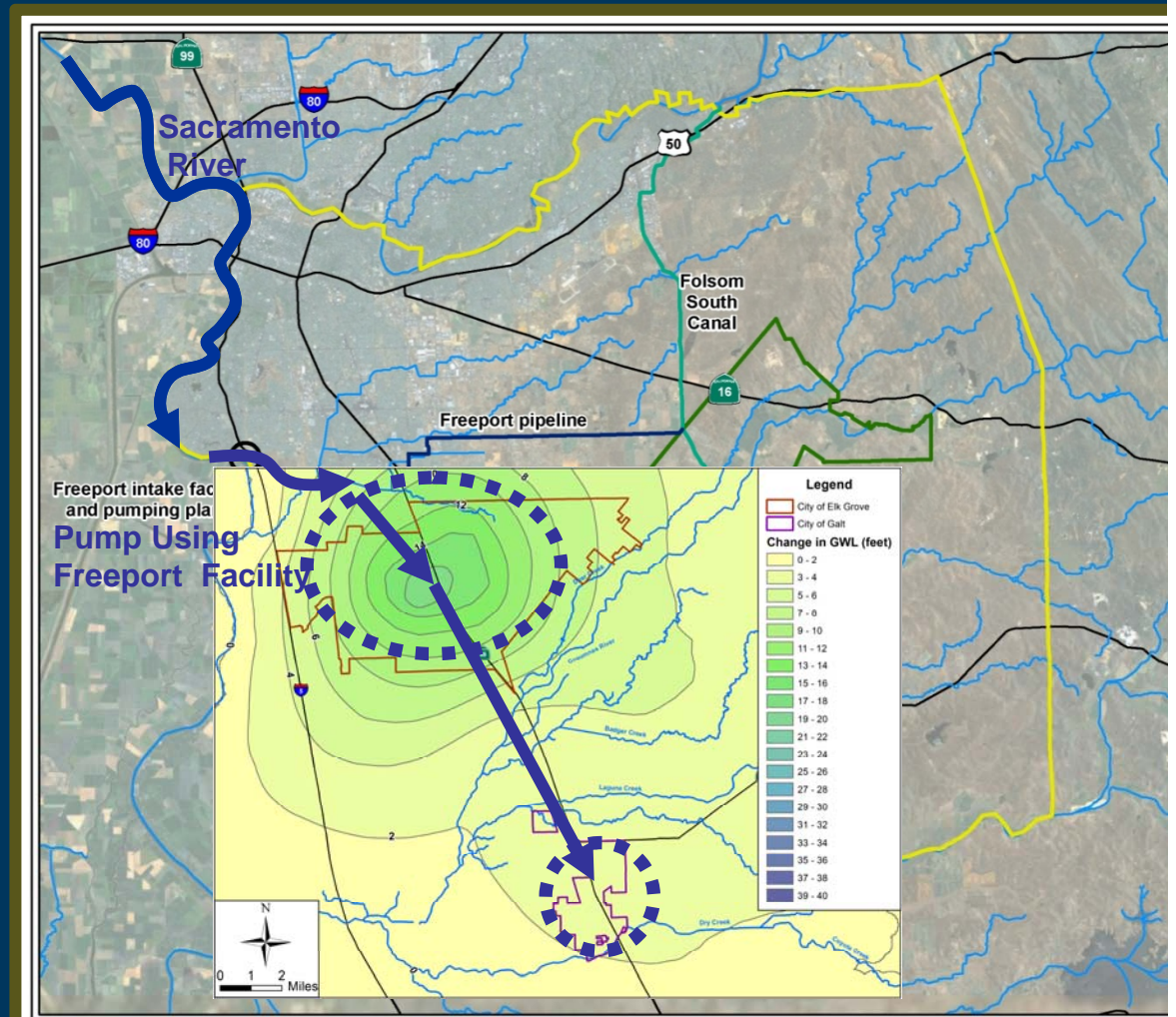
2 - 4 ft

1 - 2 ft



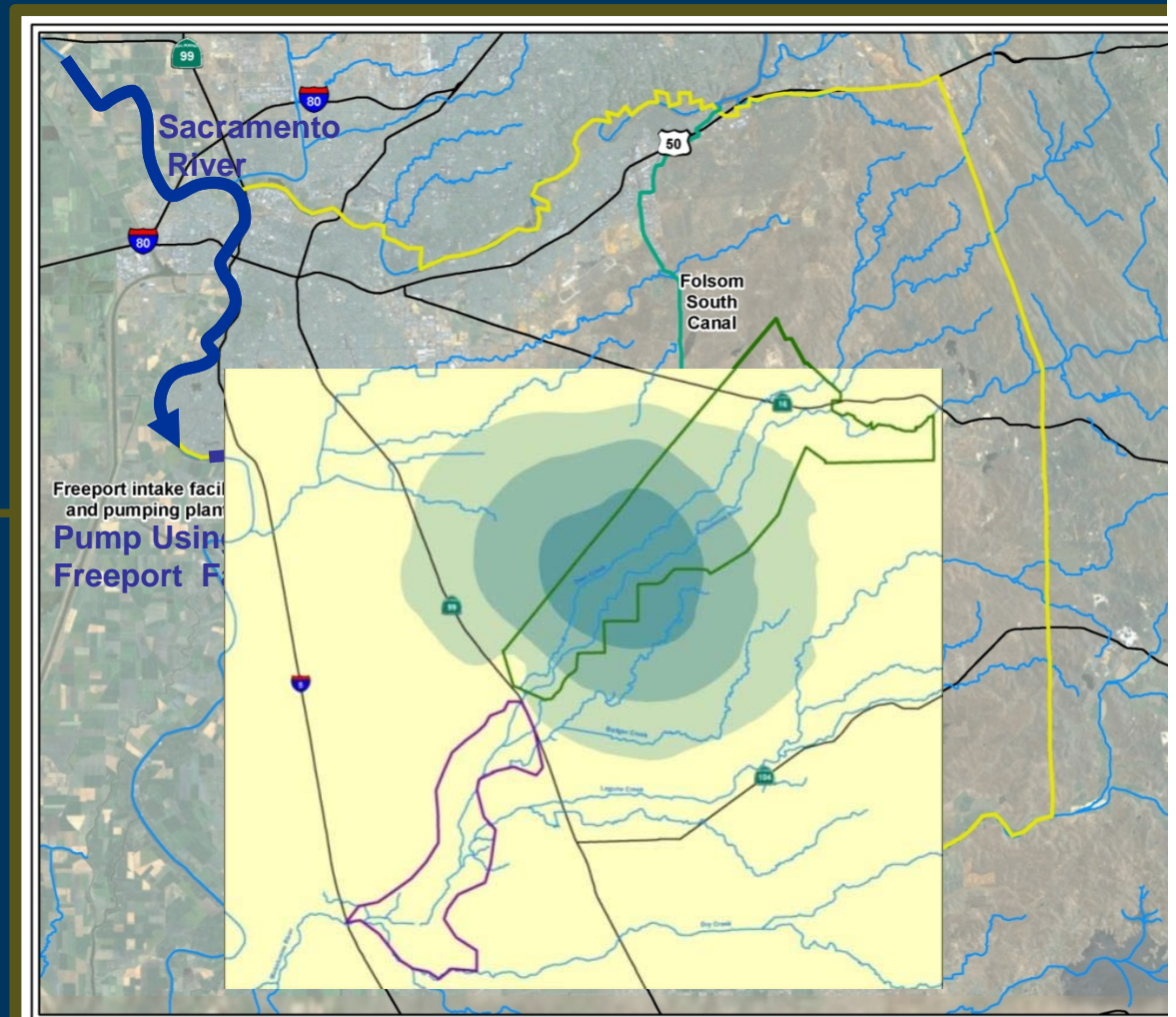
In-lieu Recharge in Elk Grove and Galt Areas

- 25,000 AF maximum
- 8,300 AFY average net recharge



Direct Recharge via Ponds

- 1,000 AFM maximum recharge capacity
- 2,900 AFY average net recharge



GW Level Improvement With Project

>10 ft

4 - 10 ft

2 - 4 ft

1 - 2 ft

Direct Recharge via Off-Season Recharge (“Flood Irrigation”) on Ag Lands

- 25,000 AF maximum recharge capacity
- 6,800 AFY average net recharge

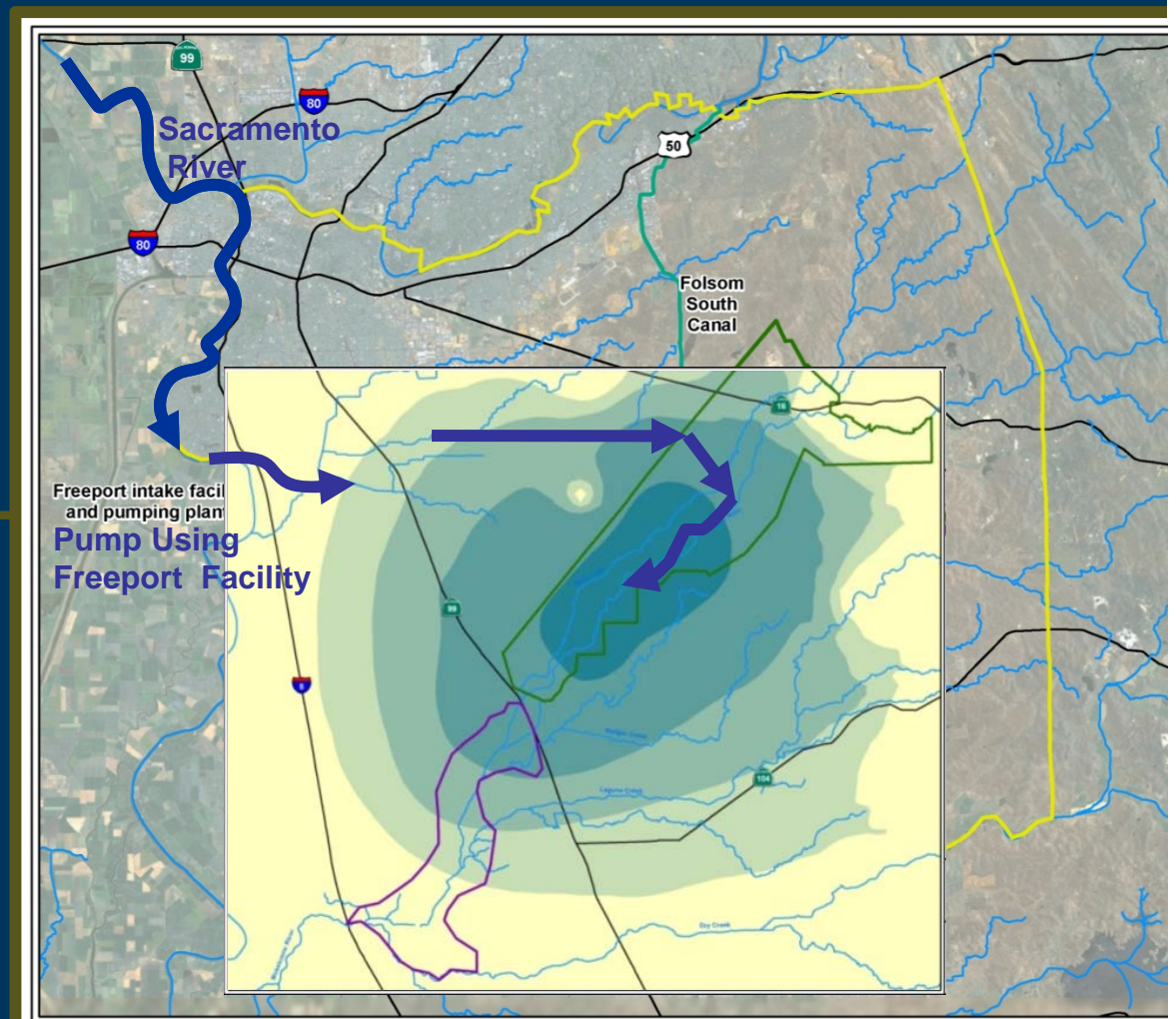
GW Level
Improvement
With Project

>10 ft

4 -10 ft

2 - 4 ft

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Findings

- In-Lieu Recharge
 - Near Preserve
 - Significant GW level benefits near Preserve
 - Elk Grove and Galt areas
 - Significant WL benefit in Elk Grove, limited at Preserve
- Direct Recharge
 - Significant GW level benefits along river
 - Fairly inexpensive
 - Limited suitable areas for recharge

Findings

- In-lieu: Surface water availability limits potential recharge
 - Evaluate other potential water sources
- Direct recharge limited by:
 - Suitable lands for direct recharge
- Economic issues
 - Direct recharge relatively inexpensive
 - In-lieu relatively expensive

Conclusions

- Technically feasible
 - Significant facilities already in place
 - Direct recharge costs are relatively low
- Provides multiple benefits
 - Increases water supply reliability for drought and emergencies
 - Decreased pumping lifts / costs
 - Ecosystem benefits
- Could benefit numerous water agencies
 - SCWA, SRCSD, local purveyors, others

Next Steps

- Assess other potential water sources
- Identify potential partners
 - Coordinate with SCGA on Water Acct Framework
 - Other municipal purveyors
- Conduct feasibility study to assess key issues
 - Institutional, financial and legal
 - Outstanding technical issues
 - Ecological benefits

Thank you