

Yolo Bypass Water Quality Management – Linking Policy to Science

Stephen McCord, LWA
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CALFED Watershed Grant
Agreement # 4600001691

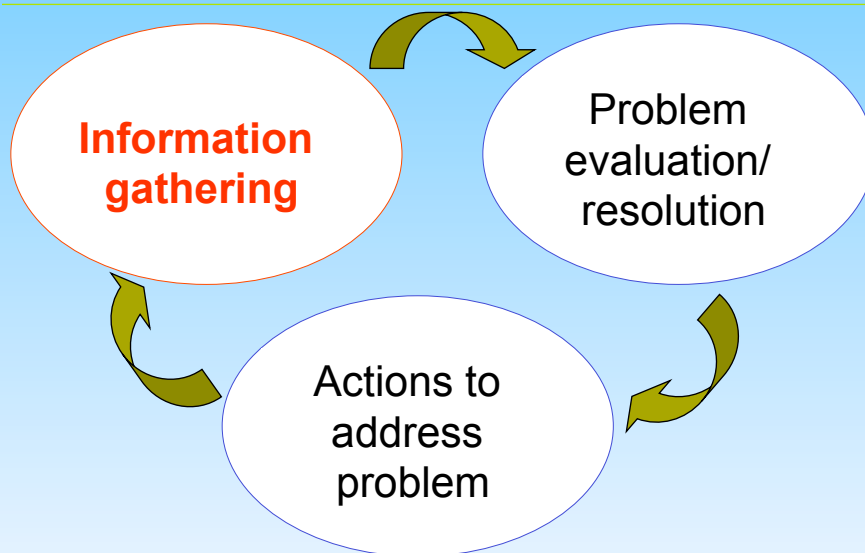


Project Purpose and Objectives

- Involve stakeholders
- Identify pollutants of concern
- Monitor surface water quality
- Identify feasible control measures
- Investigate current water quality criteria
- Produce Water Quality Management Plan



The Planning Process, **Step 1**



Stakeholders Advisory Group

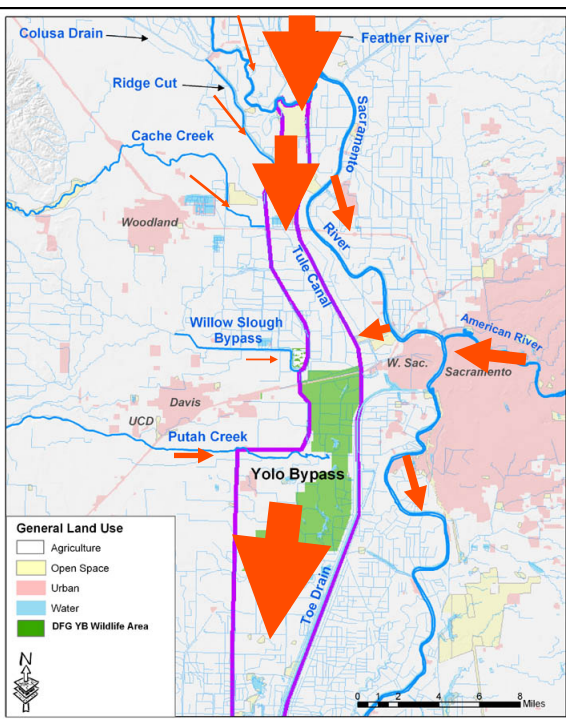
- DWR
- Regional Water Board
- CA Dept. Food & Ag.
- CA Dept. Fish & Game
- UC Davis
- Putah Creek Council
- Yolo Co. Farm Bureau
- City of Davis
- City of Woodland
- Cache Creek Conservancy
- Dixon RCD
- USGS
- Conaway Ranch
- Reclamation District 2068
- Yolo Co. Planning Dept.
- Yolo Basin Foundation
- Yolo Co. Ag. Commissioner
- Lower Putah Creek Coord. Comm.

Git 'er Done Group

- Armand Ruby, LWA / ARC
- Chris Erichsen, LWA
- Tess Dunham, LWA
- Christine Engel, City of Woodland
- RIO volunteers

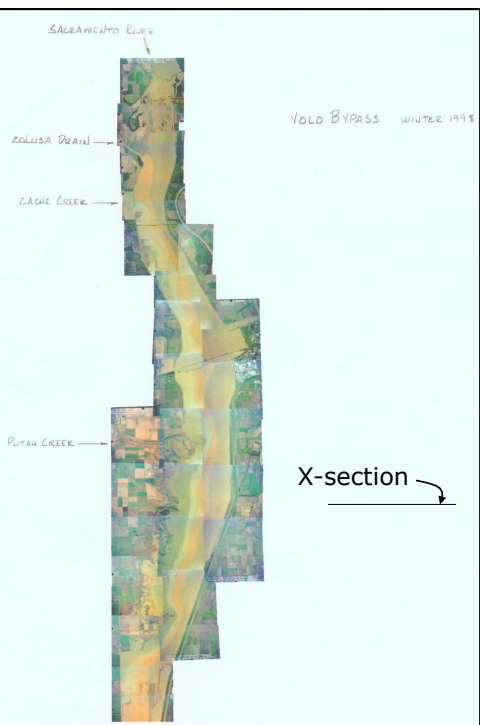


The Bypass Hydrology

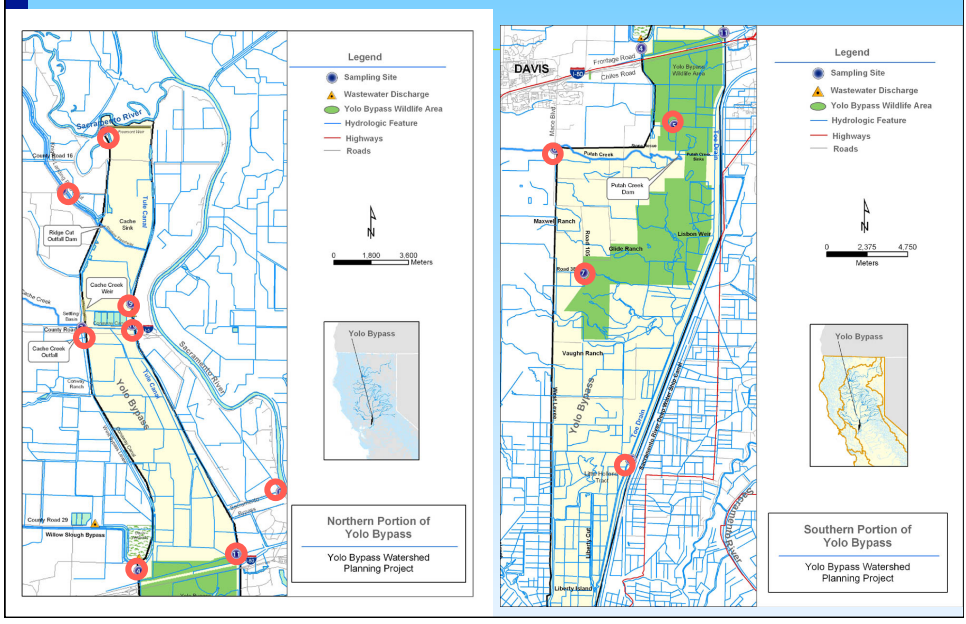


Wide Water Moves in Wondrous Ways

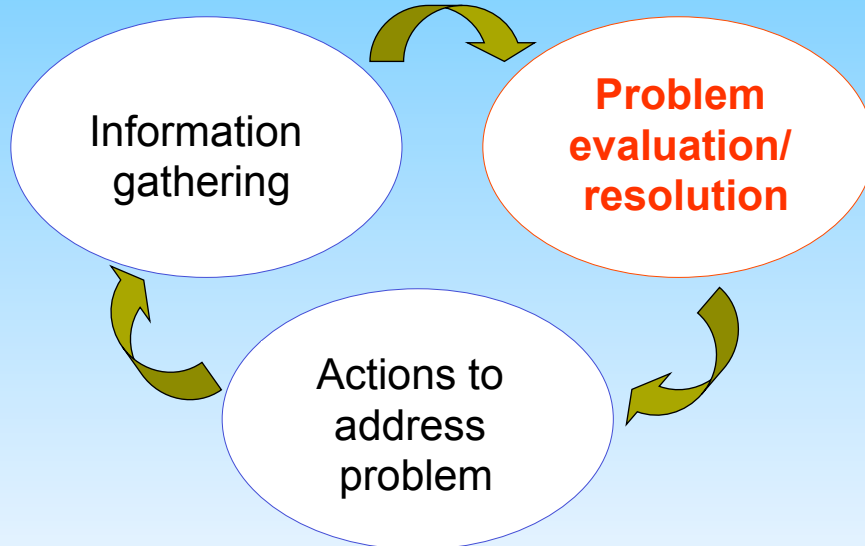
Image courtesy of Ted Sommer, DWR



Monitoring Sites



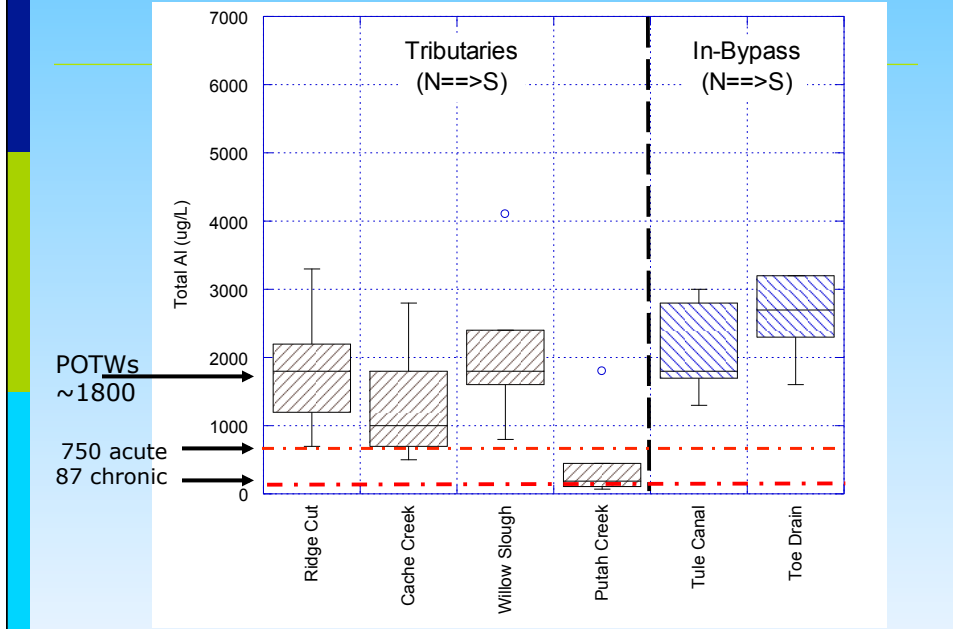
The Planning Process, Step 2



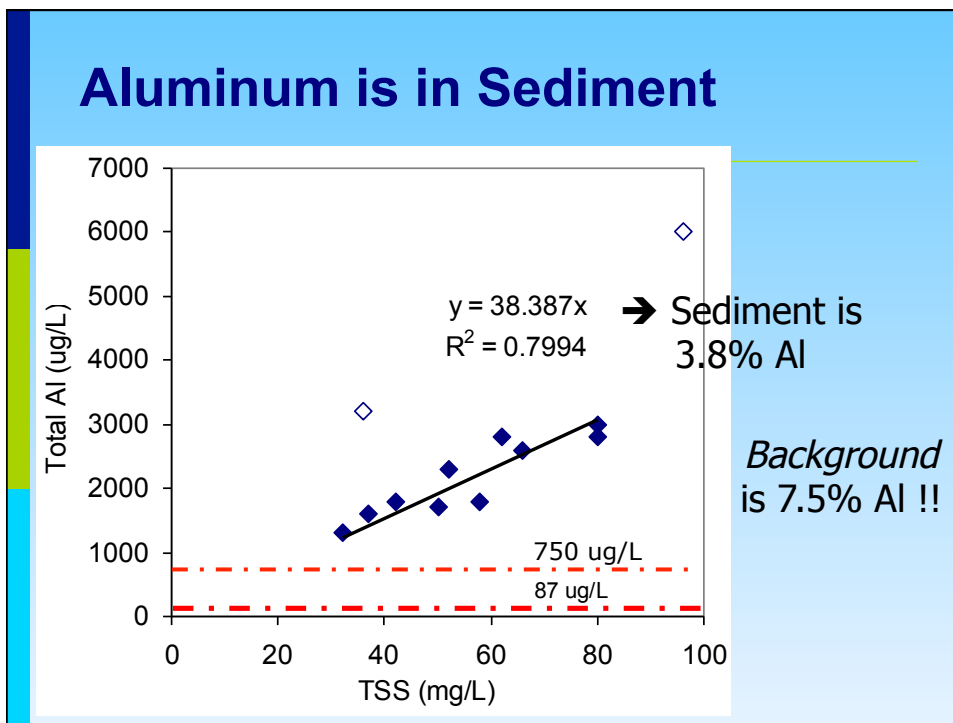
Prioritization

POC	Priority		
	High	Medium	Low
Bacteria			
Total coliform	X		
Fecal coliform			
E. coli			
Boron	X		
Metals			
Aluminum	X		
Chromium			X
Copper			X
Lead			X
Mercury	X		
Selenium			X
Nitrate			X
Organic Carbon			
Total organic carbon		X	
Dissolved organic carbon			
Pesticides and Herbicides			
OCs (DDE and DDT)		X	
OPs (Chlorpyrifos and Diazinon)		X	
Carbamates (Diuron and Methomyl)			X
Salinity	X		
Total Suspended Solids (TSS)			X

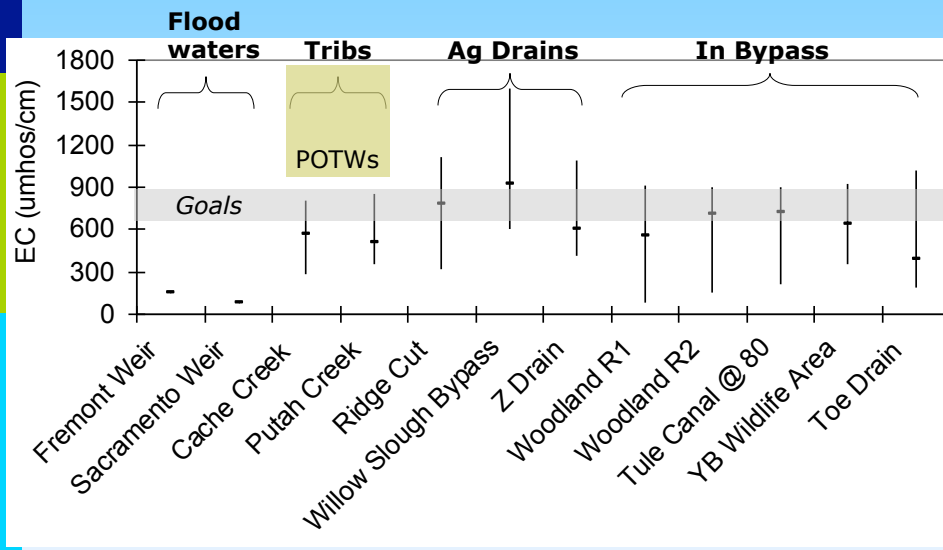
Total Aluminum



Aluminum is in Sediment

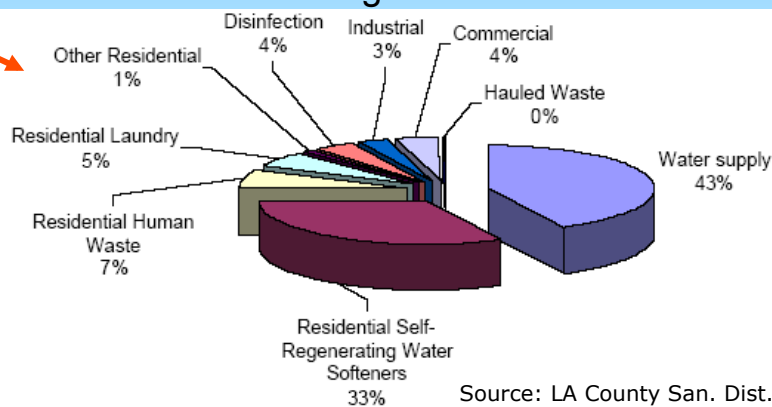


Salinity Levels

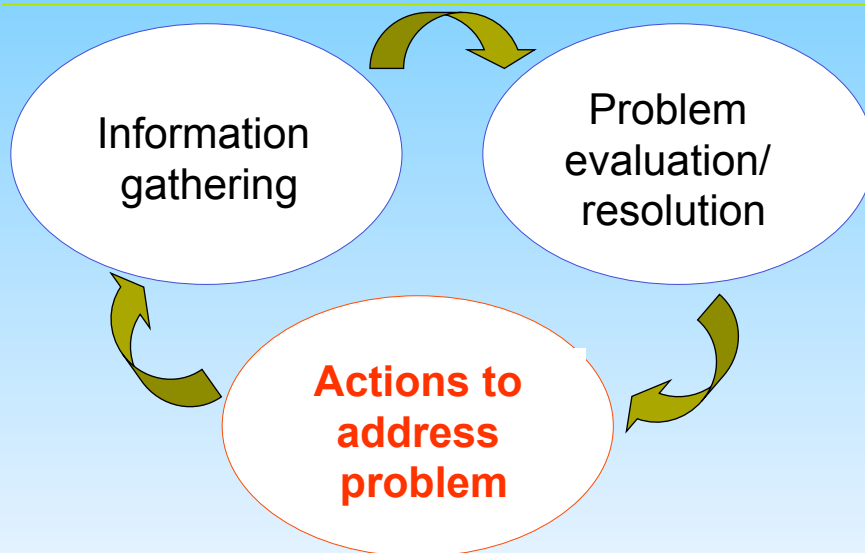


Salinity Sources

- Ag drains: wells + evapoconcentration
- Creeks and floodwaters: snowmelt & rainfall
- POTWs: wells + sewage



The Planning Process, Step 3



The Plan

POC	Recommended Components for Addressing POCs			
	Controls	Study	SSO	Nothing
Bacteria				
Total coliform	X	X		
Fecal coliform				
E. coli				
Boron	X		X	
Metals				
Aluminum	X		X	
Chromium				X
Copper				X
Lead				X
Mercury	X	X		
Selenium				X
Nitrate				X
Organic Carbon				
Total organic carbon	X	X		
Dissolved organic carbon				
Pesticides and Herbicides				
OCs (DDE)				X
OPs (Chlorpyrifos and Diazinon)	X			
Carbamates (Diuron and Methomyl)	X			
Salinity	X		X	
Total Suspended Solids (TSS)				X

Plan for Aluminum & Salinity

- Controls:
 - Cache Creek Settling Basin
 - **Improve source water quality**
 - Outreach & education
 - Minimize irrigation & POTW discharges

- Research/Study:
 - **Aluminum Water-Effects Ratio**
 - Sediment source tracking
 - Tertiary / RO treatment benefits
 - Water quality modeling

- Site-specific Objectives:
 - **Salinity (Bypass ≠ desert)**

The Only Constant is Change...

- Fish ladders
- Urban expansion & Eminent Domain
- WWTP expansions & improvements
- Special projects...

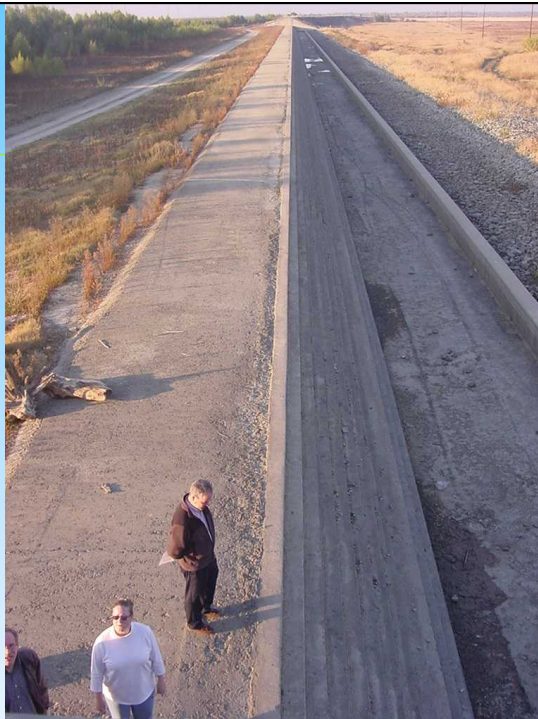
Colusa Basin Drain



Cache Creek Mercury Mines



Cache Creek Settling Basin



Concluding Remarks

- Aim before shooting
- Multi-pronged Plan: control measures, focused studies, monitoring, SSOs
- Adaptively manage this complex system
- Link to IWRMPs