



Cambria Community Services District

SUSTAINABLE WATER
FACILITY TOUR

WATER EDUCATION
FOUNDATION

AUGUST 29, 2019



Outline

Introductions

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Background - Exceptional Drought of 2014

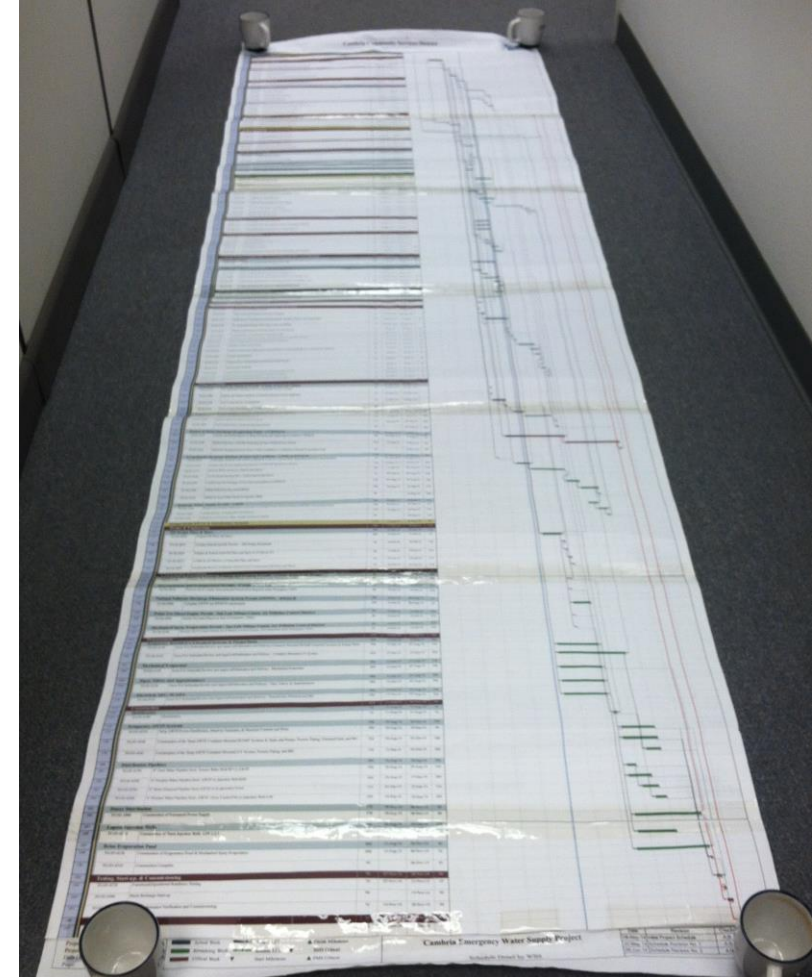
- Drought began in 2011 with 2013 driest year since 1895
- 2014 – “*Ridiculously Resilient High Pressure Ridge*” steers storm path away from Central Coast
- State of emergency declared by governor in January 2014; Executive Orders in April 2014
- Cambria at risk of running out of water by end of year
- CCSD Board enacted Emergency conservation measures included penalties for overuse and a total ban on all outdoor watering
- CCSD Board authorized emergency contracting to complete an Emergency Water Supply Project.



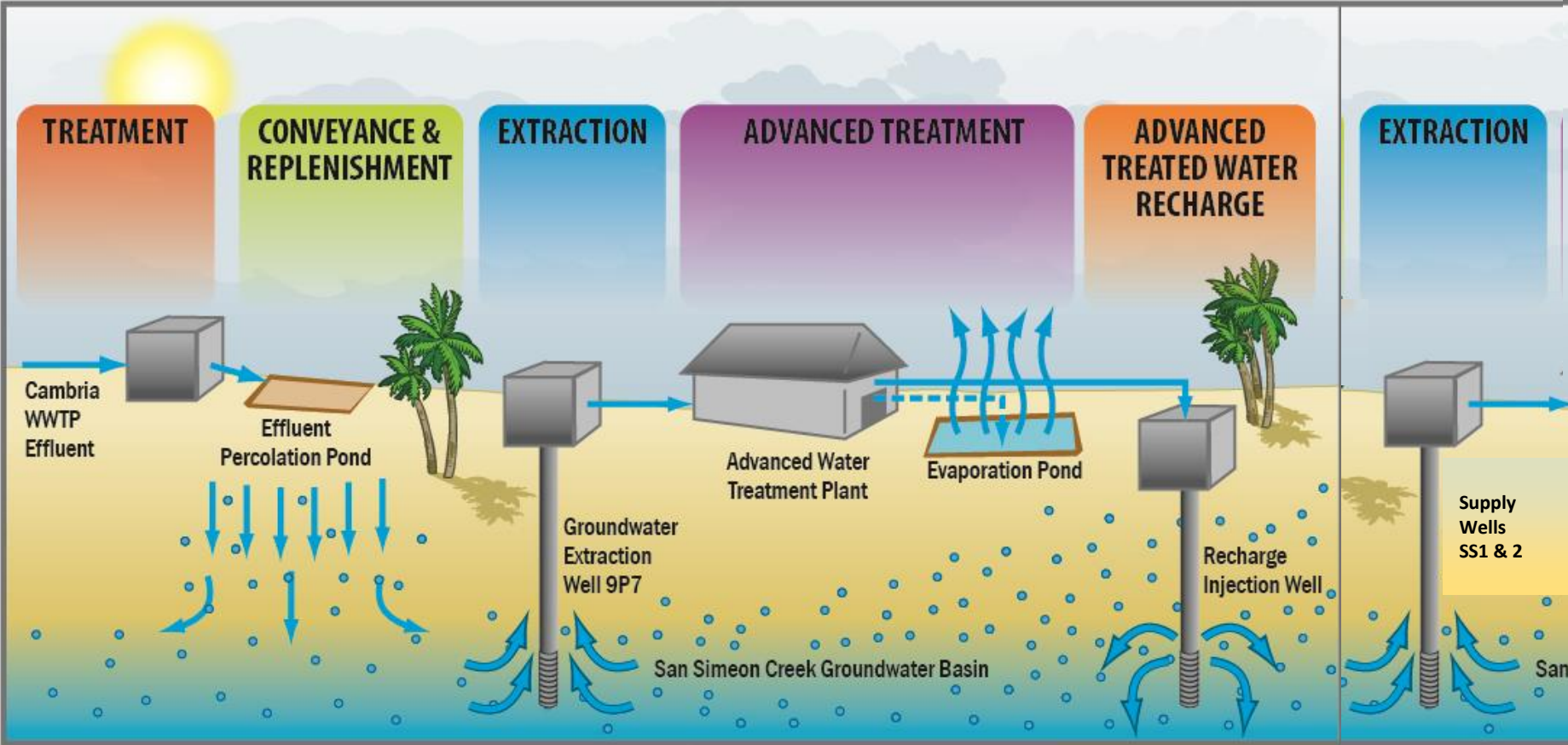
July 14, 2014
US Drought Monitor

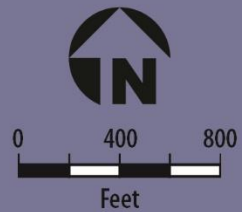
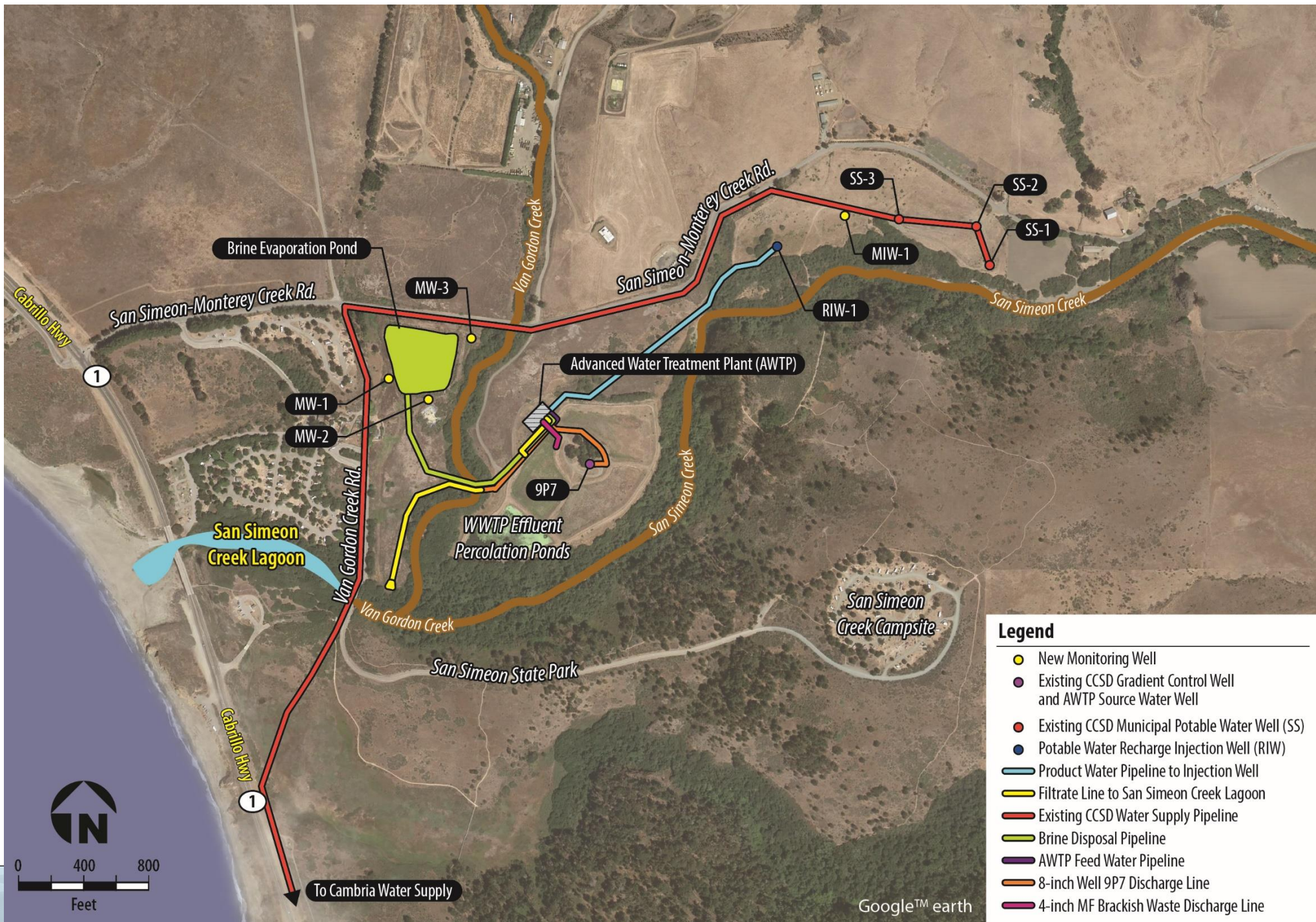
Project Overview - Timeline

- January 17, 2014 – Governor declares state-wide drought emergency
- January 30, 2014 – CCSD Board declares local Stage 3 water shortage emergency & authorizes emergency contracting
- February 7 – Design contract awarded to CDM Smith for Emergency Water Supply
- May 15, 2014 – Emergency Coastal Development Permit approved
- June 18, 2014 – CDPH Groundwater Recharge Reuse Regulations adopted
- June through July 2014 – CCSD Completes 218 rate setting process & obtains a bank loan to fund construction
- August 7, 2014 – Construction contract awarded to CDM Constructors Inc.
- Sept 9, 2014 – Division of Drinking Water conditionally approves Title 22 Engineering Report
- November 14, 2014 – RWQCB issues Permits for Title 22 indirect reuse & Title 27 Evaporation pond
- December 2, 2014 – Plant commissioning begins
- January 20, 2015 – Plant production begins



Project Overview - Supply Concept





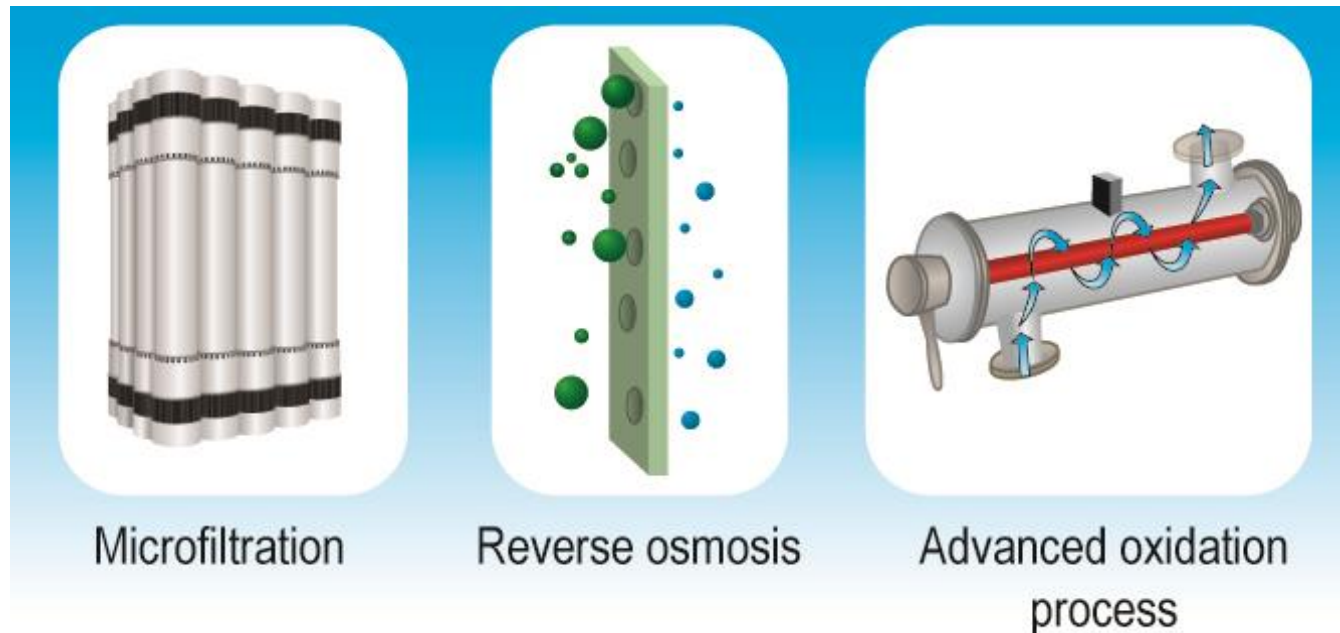
Legend

- New Monitoring Well
- Existing CCSD Gradient Control Well and AWTP Source Water Well
- Existing CCSD Municipal Potable Water Well (SS)
- Potable Water Recharge Injection Well (RIW)
- Product Water Pipeline to Injection Well
- Filtrate Line to San Simeon Creek Lagoon
- Existing CCSD Water Supply Pipeline
- Brine Disposal Pipeline
- AWTP Feed Water Pipeline
- 8-inch Well 9P7 Discharge Line
- 4-inch MF Brackish Waste Discharge Line

Google™ earth

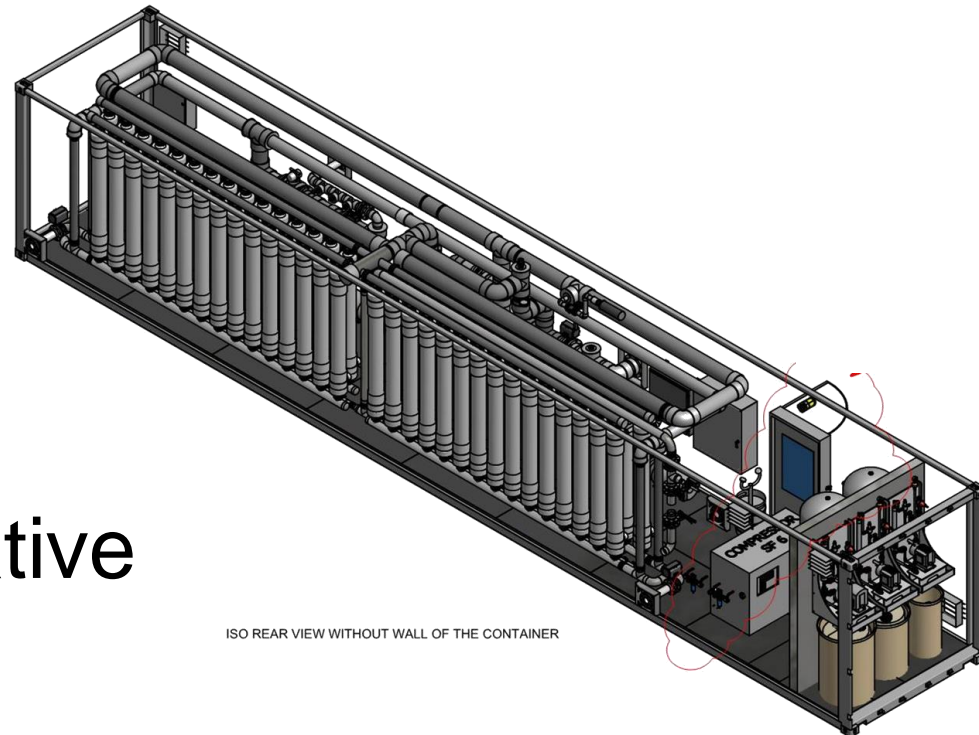
Advanced Water Treatment

- Uses 3-step process similar to other California Indirect Potable Reuse projects
- Built on previous projects for more efficient and flexible facility



Membrane Filtration

- Universal Ultra Filtration rack by H2O Innovations
- Using Toray HFU membranes
 - PVDF
 - 0.01 micron
 - 30 gfd
 - 92% Recovery
 - Used at San Diego Demo Plant
- Can also be fit with alternative membranes



Reverse Osmosis

- Hydranautics ESPA4 membranes
 - Lower rejection than traditional ESPA2
 - 14 gfd flux higher than traditional IPR, allowing trailer mounted system
 - 85% recovery for primary
 - Secondary RO achieves 92.5% overall recovery
 - Brine sent for evaporation



Advanced Oxidation

- Trojan UVPhox system similar to larger facilities
- Provides redundant pathogen barrier and CEC destruction
- Working with DDW to convert to first full-scale UV/Chlorine installation



Permitting

- Project Permits Included:
 - Emergency Coastal Development Permit
 - Title 22 Permit - jointly developed by the RWQCB and Division of Drinking Water
 - Title 27 Permit – issued by RWQCB for evaporation pond.
 - Enrollment into NPDES General Permit for Low Threat Discharges – Further conditioned and required by RWQCB for mitigation water
 - Modification of Waste Discharge Order to allow filter backwash into percolation pond
 - Storm Water Pollution Prevention Plan

Costs

Project costs to date:

Project soft costs(*)	~ \$2,480,000
Original Construction Contract.....	\$6,647,919
Change orders	~ \$ 666,000
Total	~ \$9,800,000

* Includes some early construction work on wells.

Future Steps/Considerations

- Regular Coastal Development Permit & Supporting EIR for Emergency Project (Per County Land Use Ordinance)
- Coordination with Army Corps on Long-term Supply
 - Environmental Impact Statement
 - Can an alternative be found to the current evaporation pond?
 - Renewable energy
- Will future regulations allow for direct reuse?

Questions?

