



Pure Water Monterey
A Groundwater Replenishment Project

Northern California WaterReuse Chapter Meeting

How Much Can an Indirect Potable Project Change?

Pure Water Monterey A Groundwater Replenishment Project

August 22, 2014



**Monterey Bay
National
Marine
Sanctuary**

**Internal Board
Goal: No
Wastewater
Discharge**

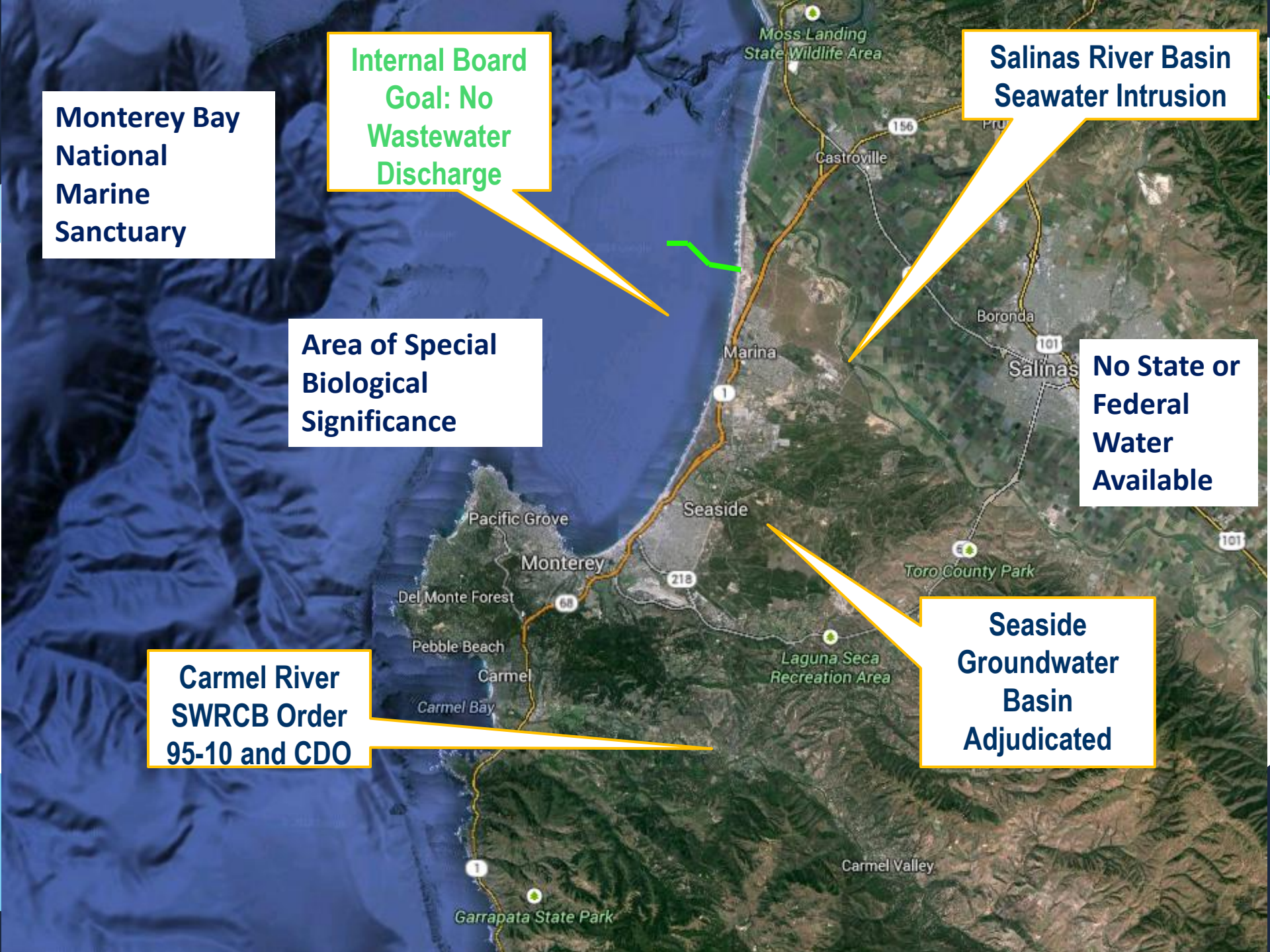
**Area of Special
Biological
Significance**

**Carmel River
SWRCB Order
95-10 and CDO**

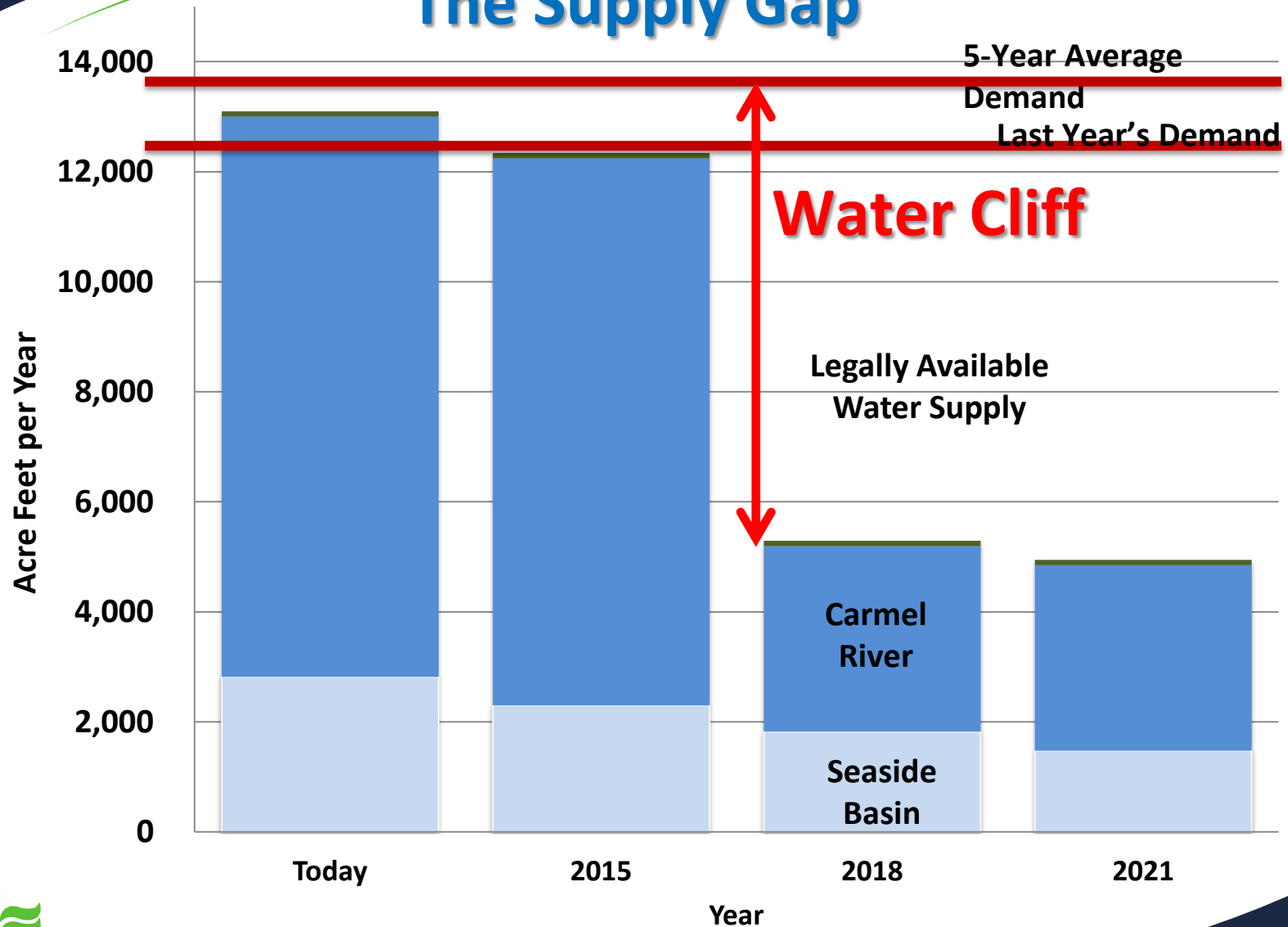
**Salinas River Basin
Seawater Intrusion**

**No State or
Federal
Water
Available**

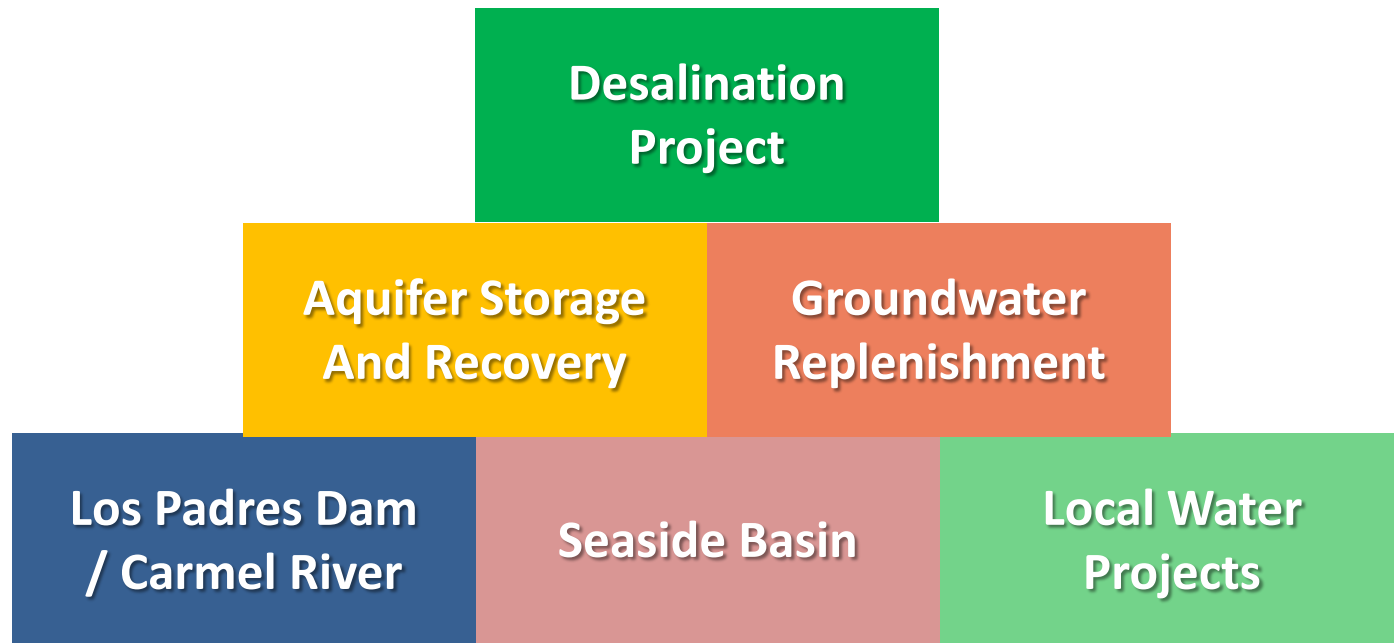
**Seaside
Groundwater
Basin
Adjudicated**



The Supply Gap



Water Supply Portfolio

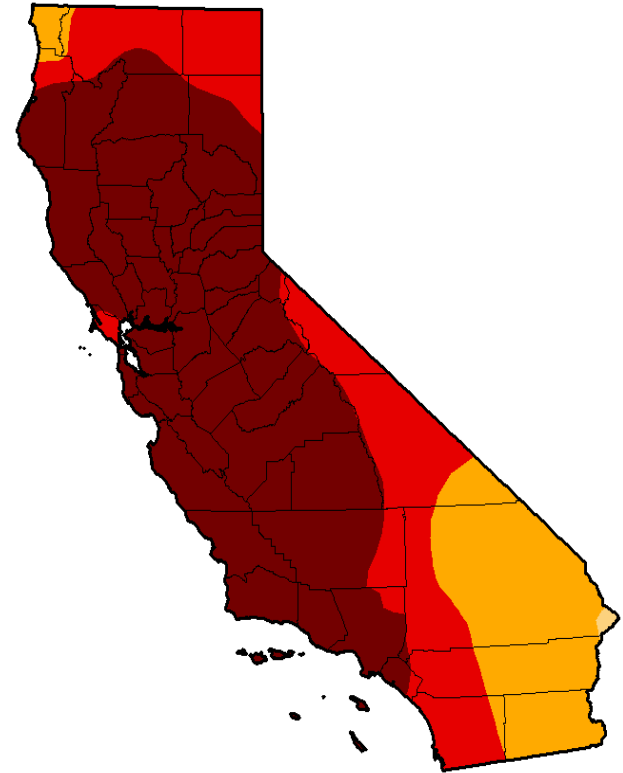


Complications

- **Severe time limit**
- **Water purveyor is private company**
- **California Public Utilities Commission**
- **MRWPCA is a wastewater district**
- **CEQA before feasibility study**
- **Special interest groups**
- **Financing before WPA**
- **Three groundwater basins and multiple aquifers**



Historic Drought



GWR Project Primary Objectives

- Reduce Carmel River pumping by 3,500 AFY and reduce desal size
- To accomplish primary objective, GWR needs to:
 - Commence operation by start of **2017**
 - Be cost effective
 - Comply with public health regulations



GWR Project Components

- **Source water** – diversion, collection, conveyance to RTP
- **Treatment** –Advanced Water Treatment Plant & concentrate disposal
- **Product water conveyance** – pump stations & pipelines
- **Injection** – deep injection and vadose zone wells, backflush facilities
- **Extraction** – Water purveyor facilities needed to convey GWR water to customers



Proposed Project Source Waters

- **Secondary effluent**
- **Produce wash water**
- **Stormwater and urban dry weather runoff**
- **Farm Ditches--Agricultural Tile Drain and Ag Runoff Water**



Salinas Ponds – Produce Wash Water (Then)



Salinas Ponds – Produce Wash Water (Now)



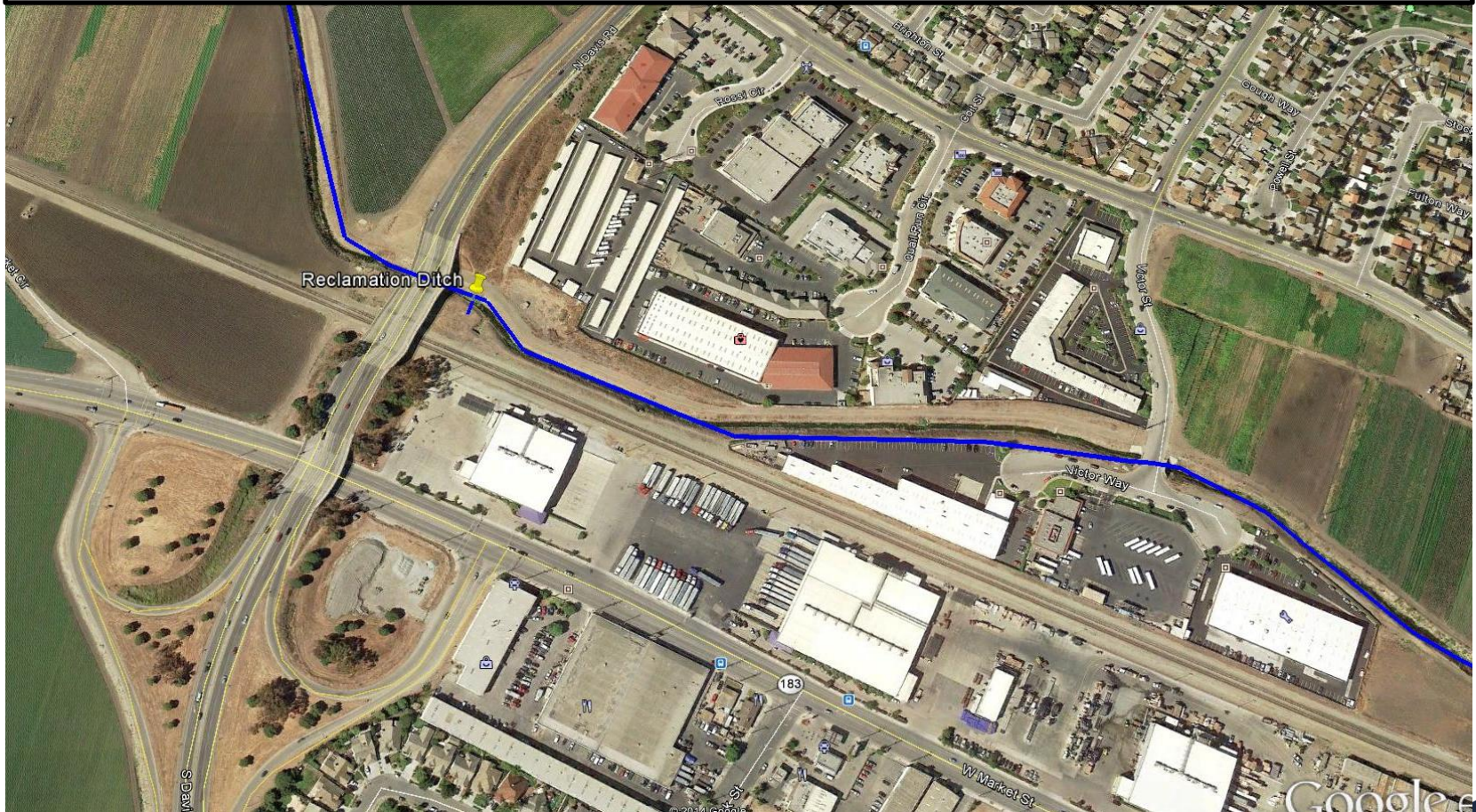
Lake El Estero - Stormwater



Blanco Drain – Ag Drainage Water



Reclamation Ditch - Salinas



Tembladero Slough - Castroville



Our Project is Complicated

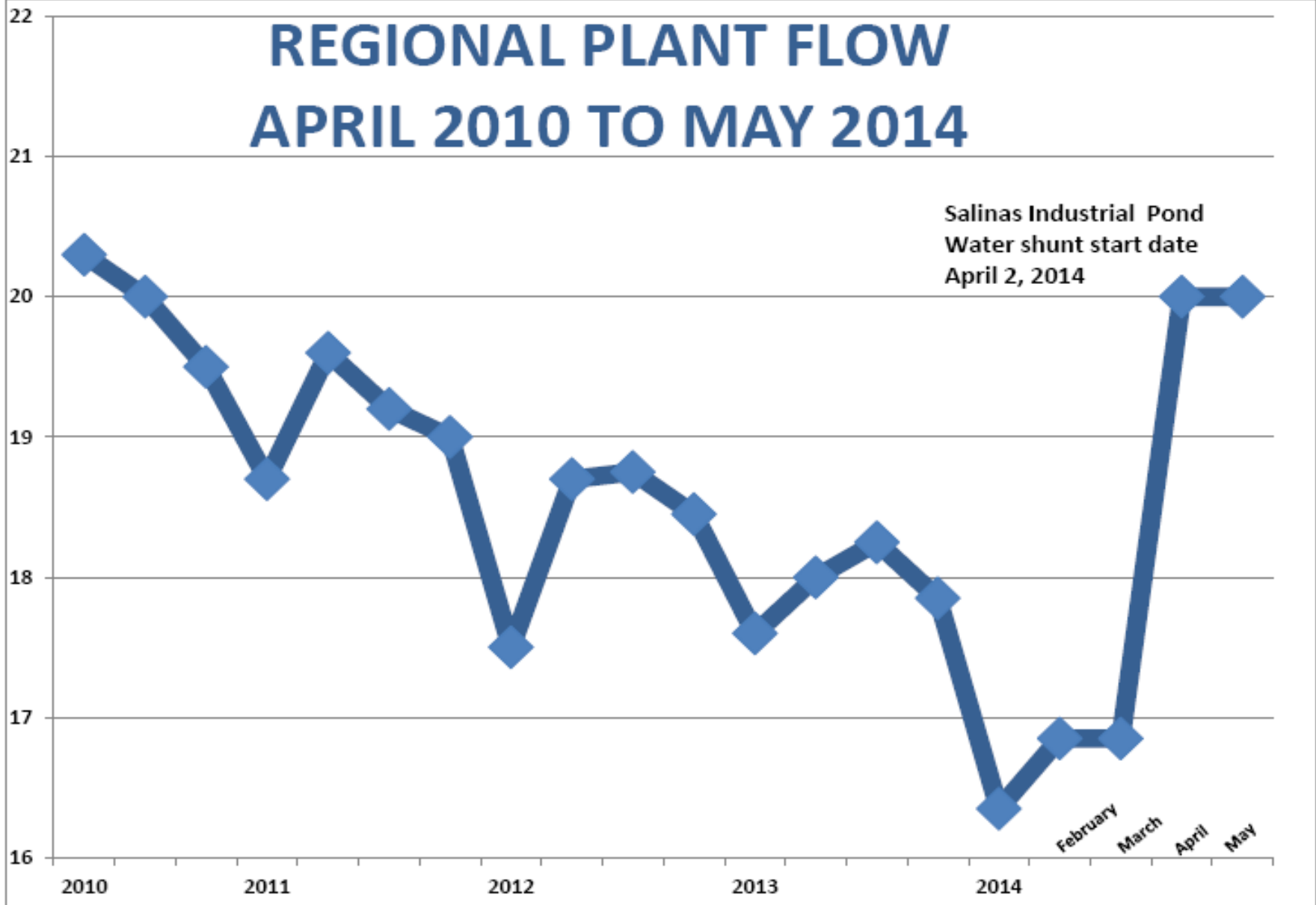
- **Severe water restrictions looming**
- **Declining wastewater flows**
- **Developing New Interruptible Rate for new water sources**
- **Partnerships**
- **Public outreach**
- **Surpassing FAT**



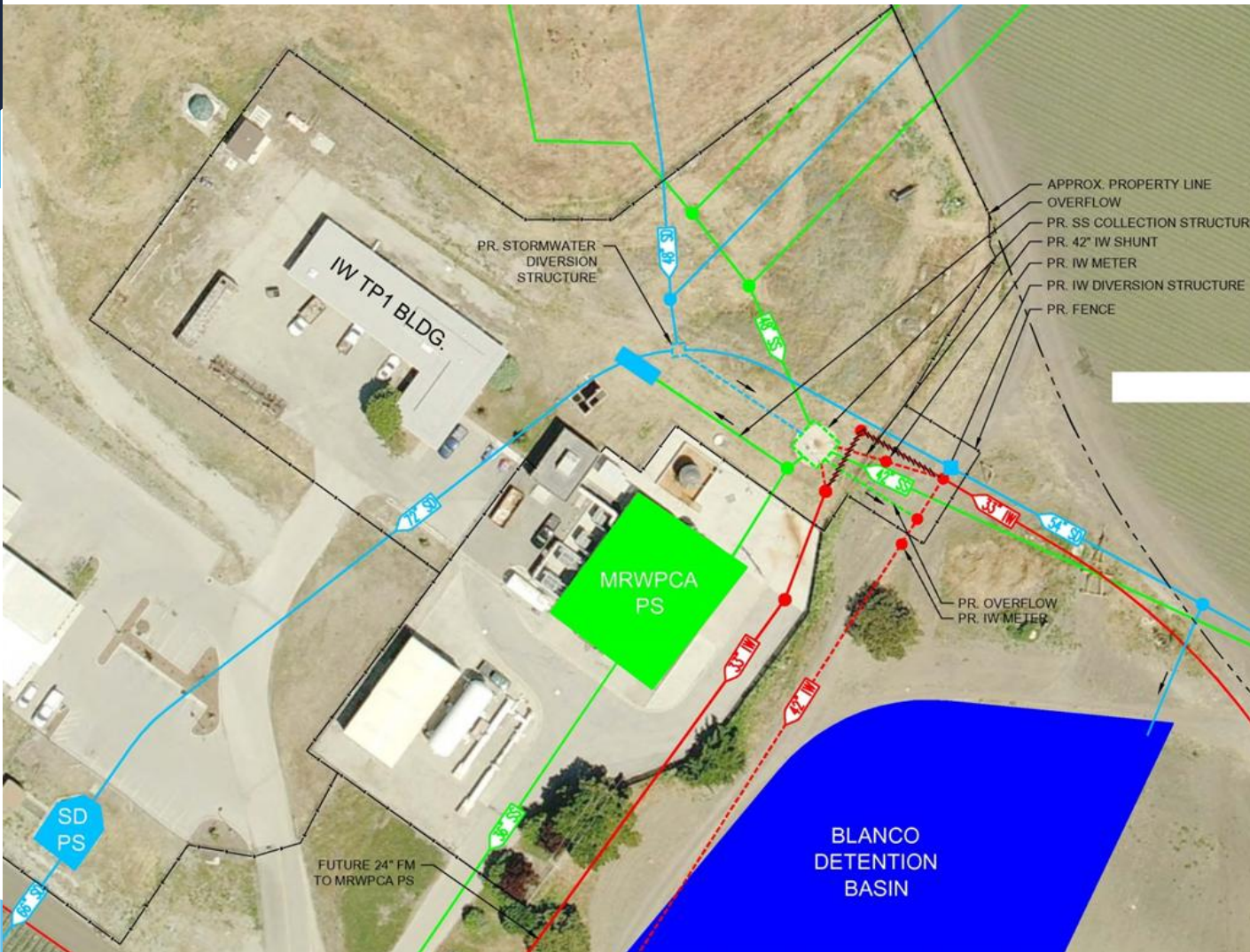
REGIONAL PLANT FLOW

APRIL 2010 TO MAY 2014

Salinas Industrial Pond
Water shunt start date
April 2, 2014



Salinas Sewage Pump Station



LEGEND

STORM DRAIN



SANITARY SEWER



AG WASHWATER



MANHOLES



PROPOSED



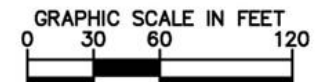
FENCE

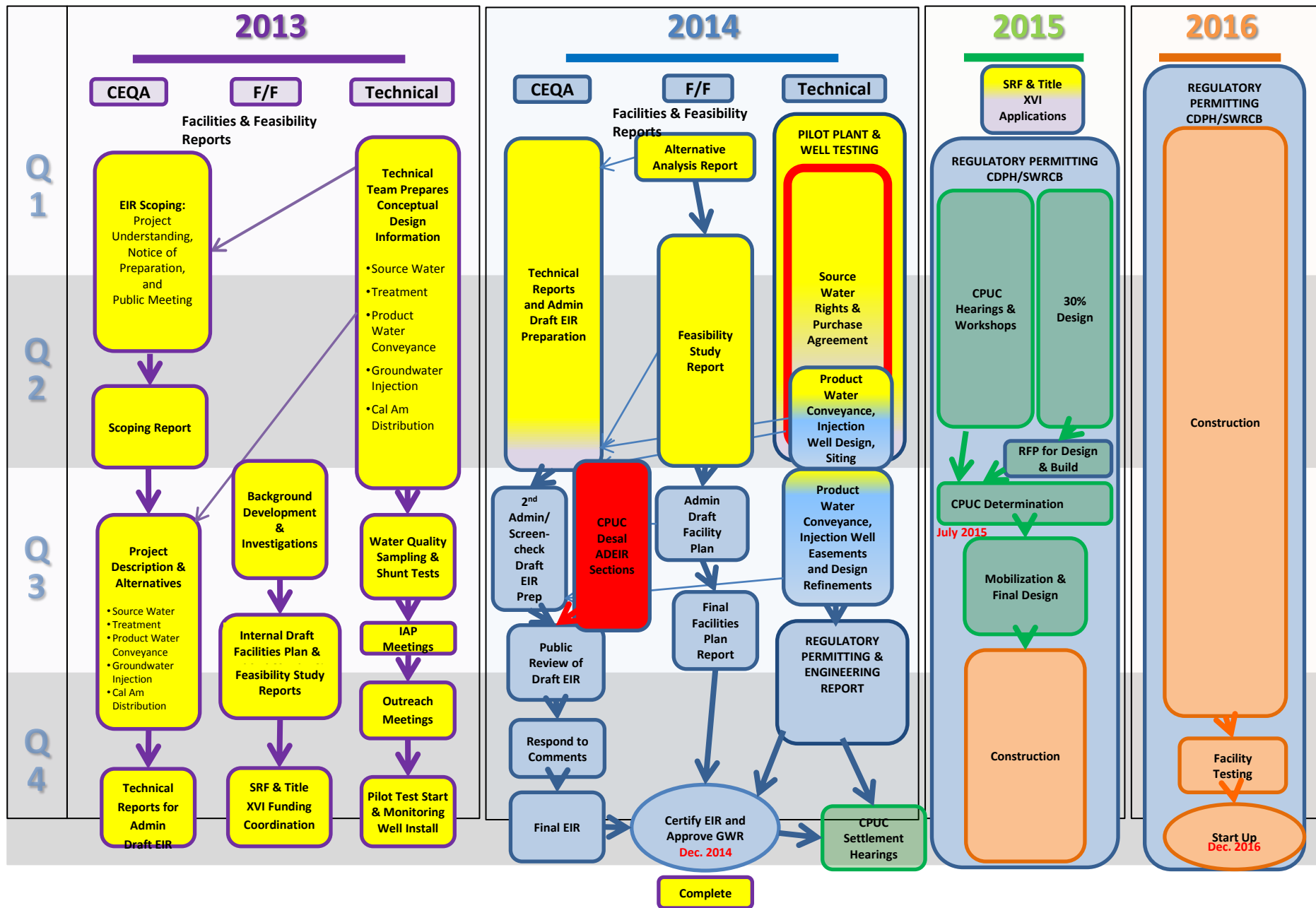


DEMOLISH

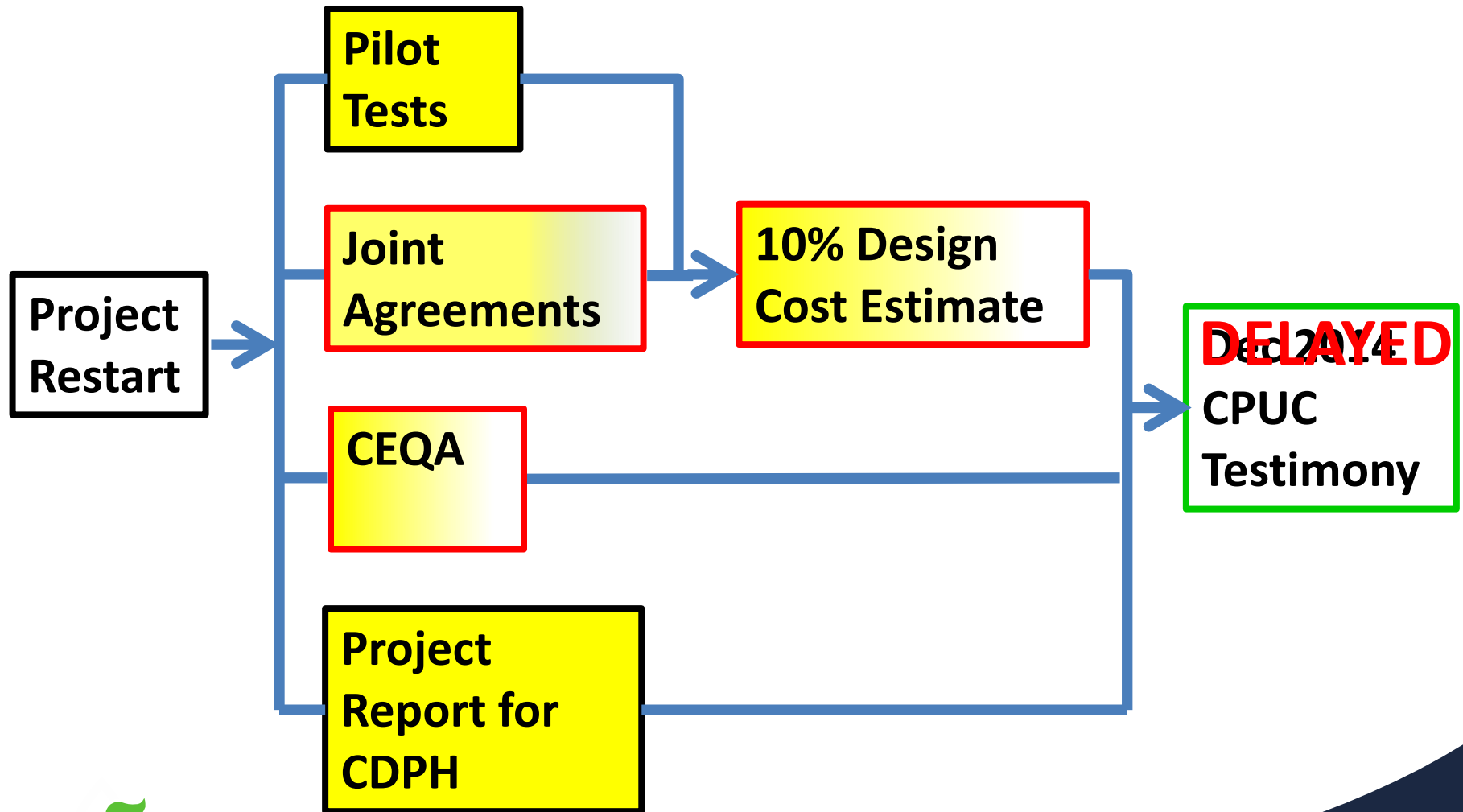


APPROX. PROPERTY LINE





Groundwater Replenishment



Collection System

Monterey Urban Runoff
Salinas Urban Runoff
Salinas Agricultural Wash Water

MRWPCA Wastewater

Existing Regional Treatment Plant (RTP) Process

Primary Treatment

Screening

Primary Sedimentation

Secondary Treatment

Biological Trickle Filters

Bio-flocculation

Secondary Clarification

To existing tertiary treatment

Proposed Advanced Water Treatment Facility (AWTF) Process

Ozonation

Biologically Active Filtration (BAF) *optional*

Membrane Filtration (MF)

Reverse Osmosis (RO)

Advanced Oxidation (AOP)

Product Water Stabilization

To product water pump station

Filter backwash returned to primary

RO Concentrate

To ocean outfall

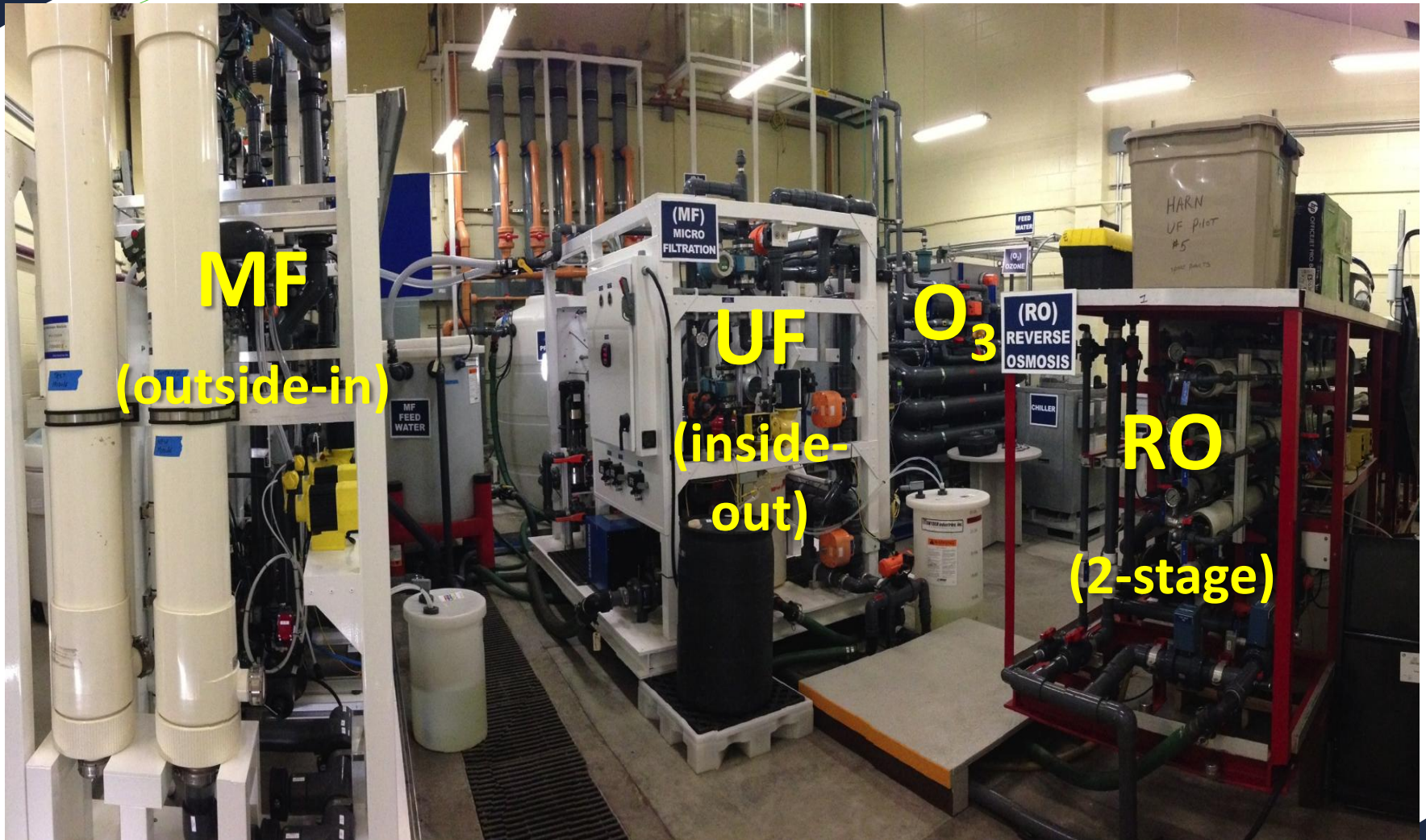
Excess secondary effluent used for concentrate dilution (when available)

Brine Mixing

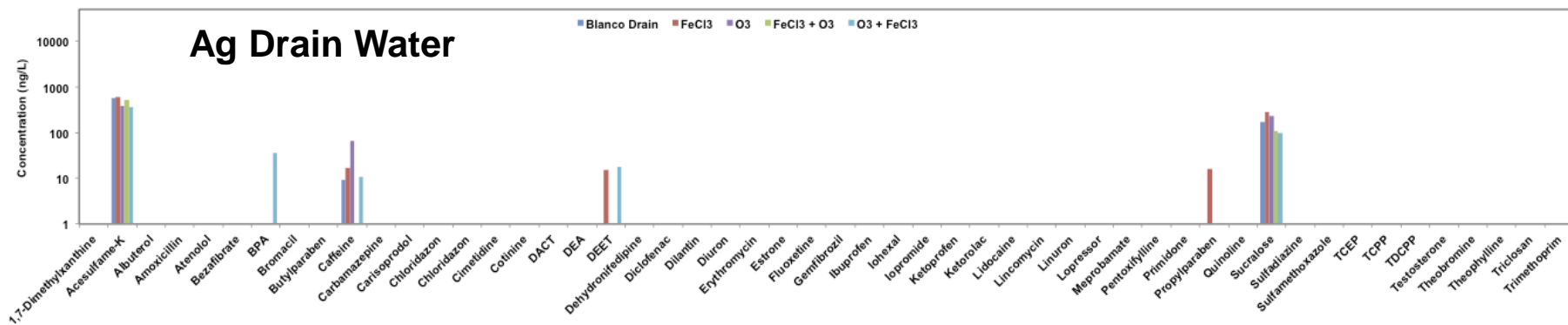
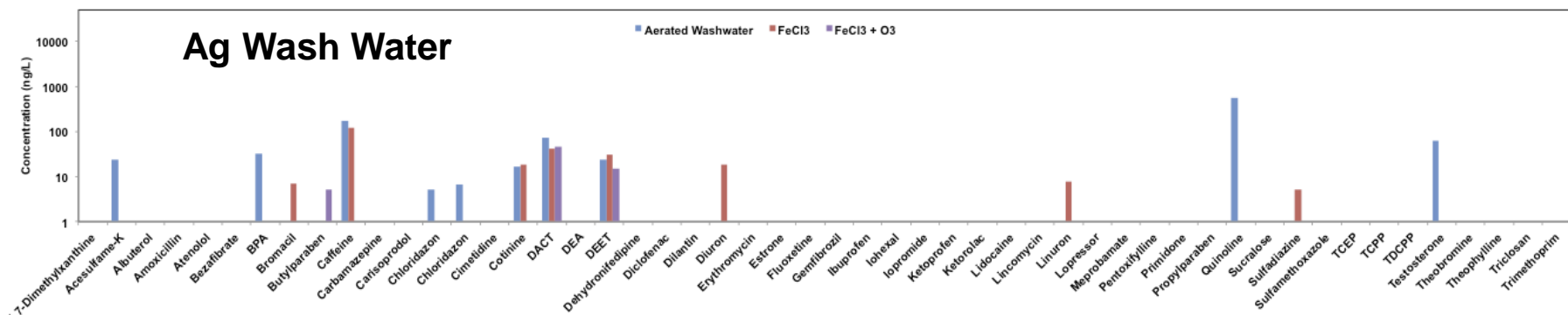
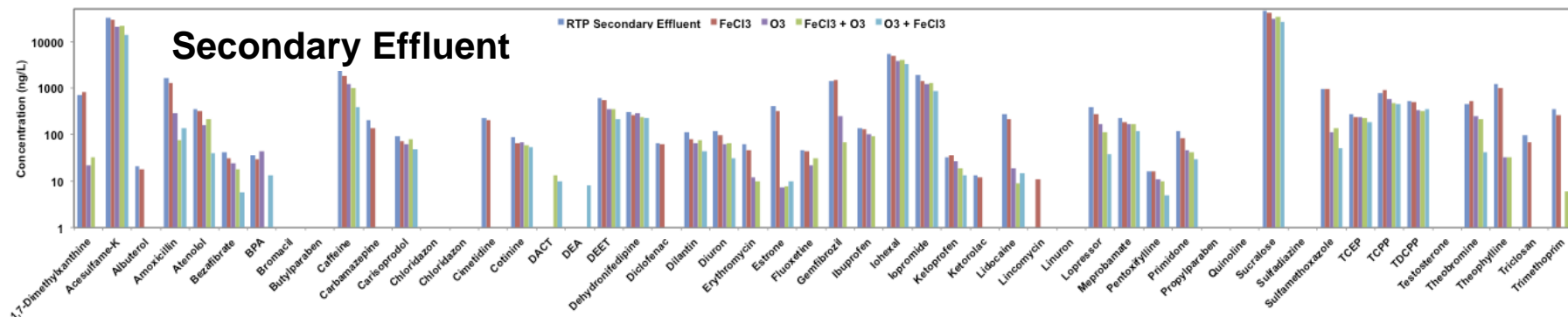


Welcome
to the
Future of
Water

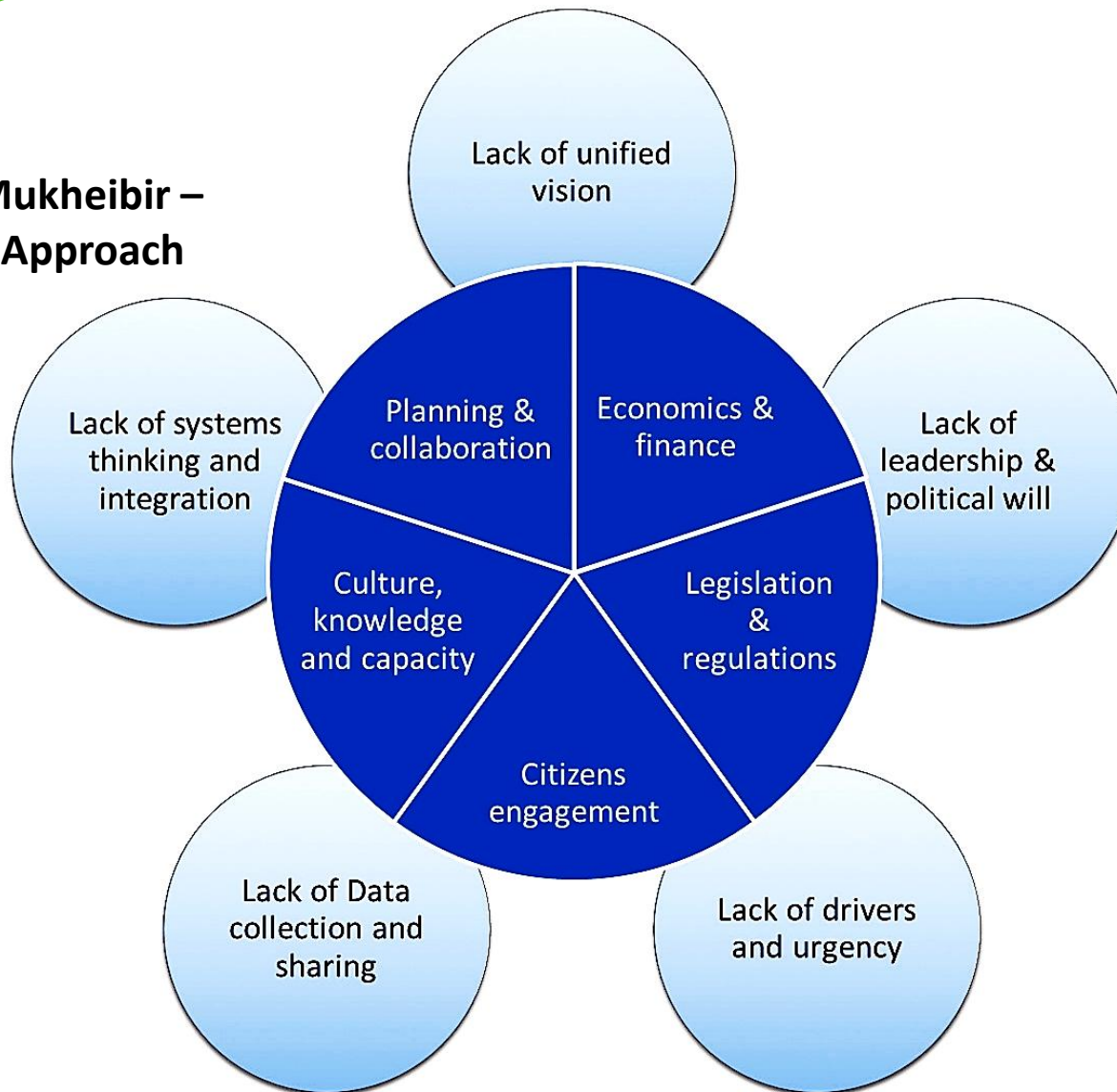


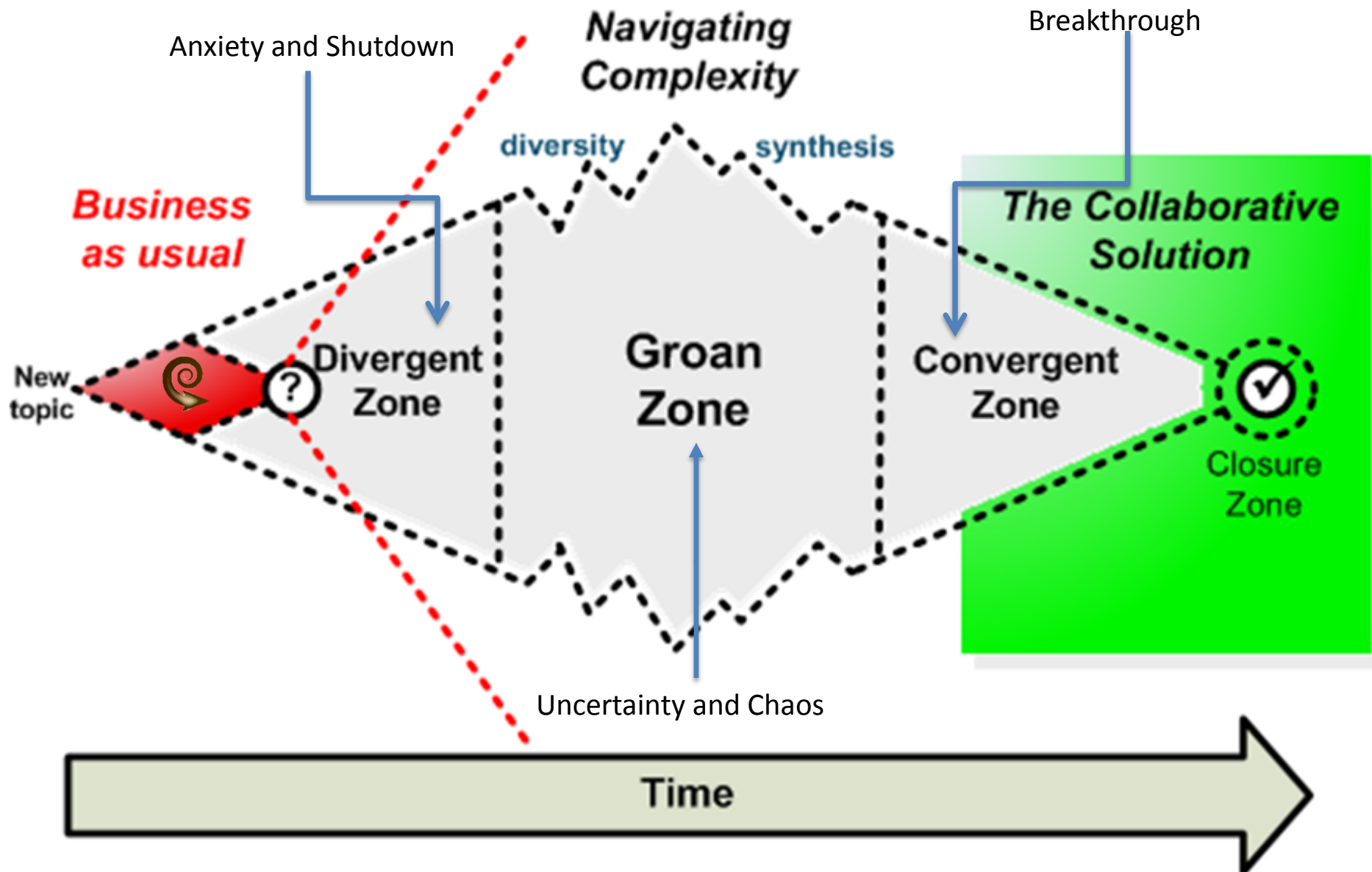


Contaminants of Emerging Concern - CECs

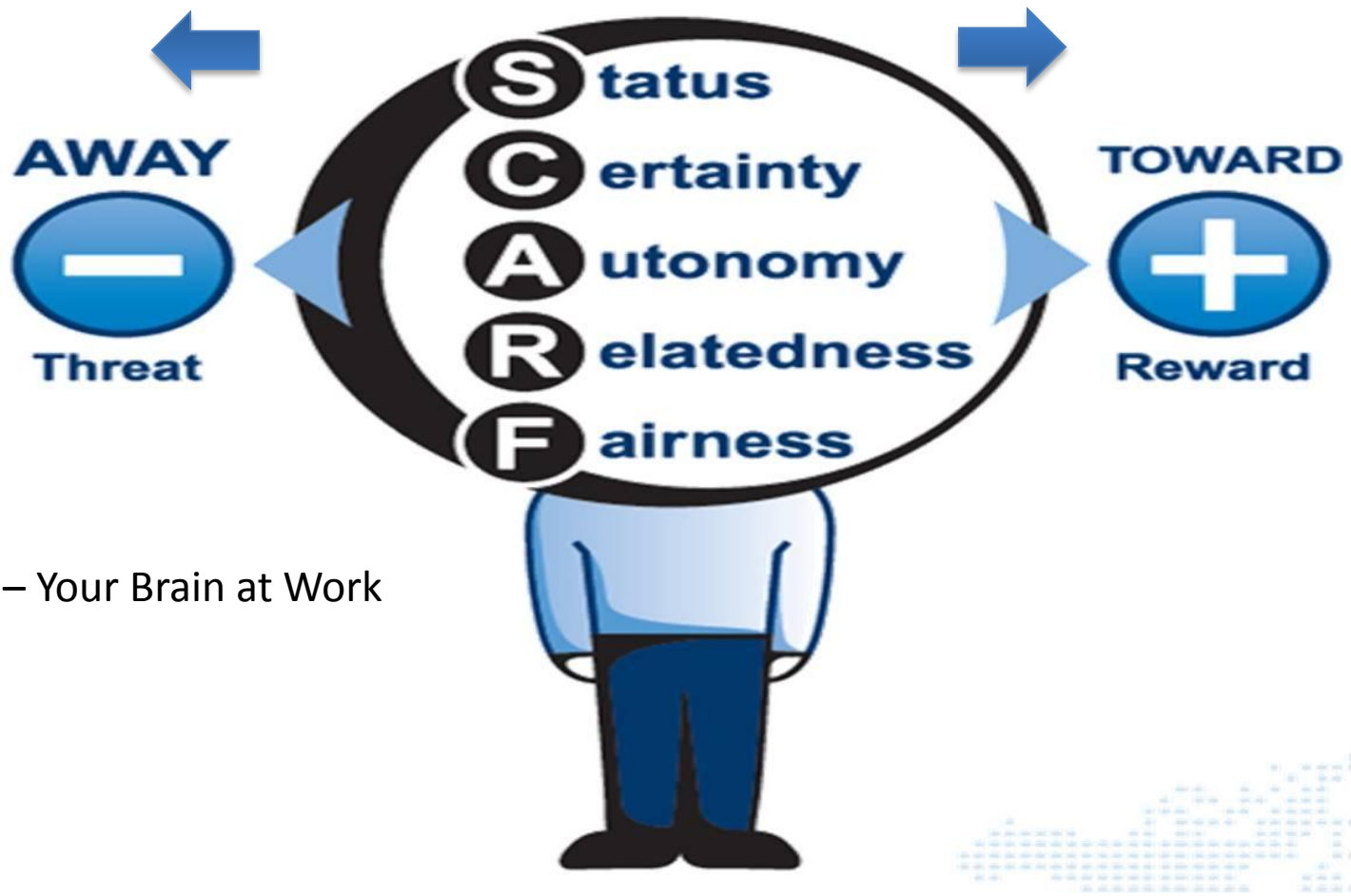


Dr. Pierre Mukheibir – One Water Approach





Minimize Danger – Maximize Reward



David Rock – Your Brain at Work



SCARF Definitions

- Status – importance to others
- Certainty – predicting the future
- Autonomy – Control over events
- Relatedness – Safety with others
- Fairness – Fair exchanges between people



SCARF Threats

- Reduces capacity to make decisions
- Reduces ability to solve problems
- Reduce ability to collaborate
- Err on the side of pessimism



SCARF Rewards

- Larger Group means better memory/knowing
- Creates a more insightful experience for group
- More and Better Ideas
- Creates a larger field of vision



SCARF – A Winning Formula

- Status – be aware of what you say and do to bring safety to the status of others
- Certainty – be very clear and consistent in messaging
- Autonomy – No micromanaging, commit to engaging others in the decision making process
- Relatedness – help to create a feeling of inclusion and sense of belonging
- Fairness – Transparency is non-negotiable



Questions?



Pure Water Monterey

A Groundwater Replenishment Project

