Source Control – How Deep into the System do we Need to go?

February 24, 2017
Northern California WateReuse Association Meeting

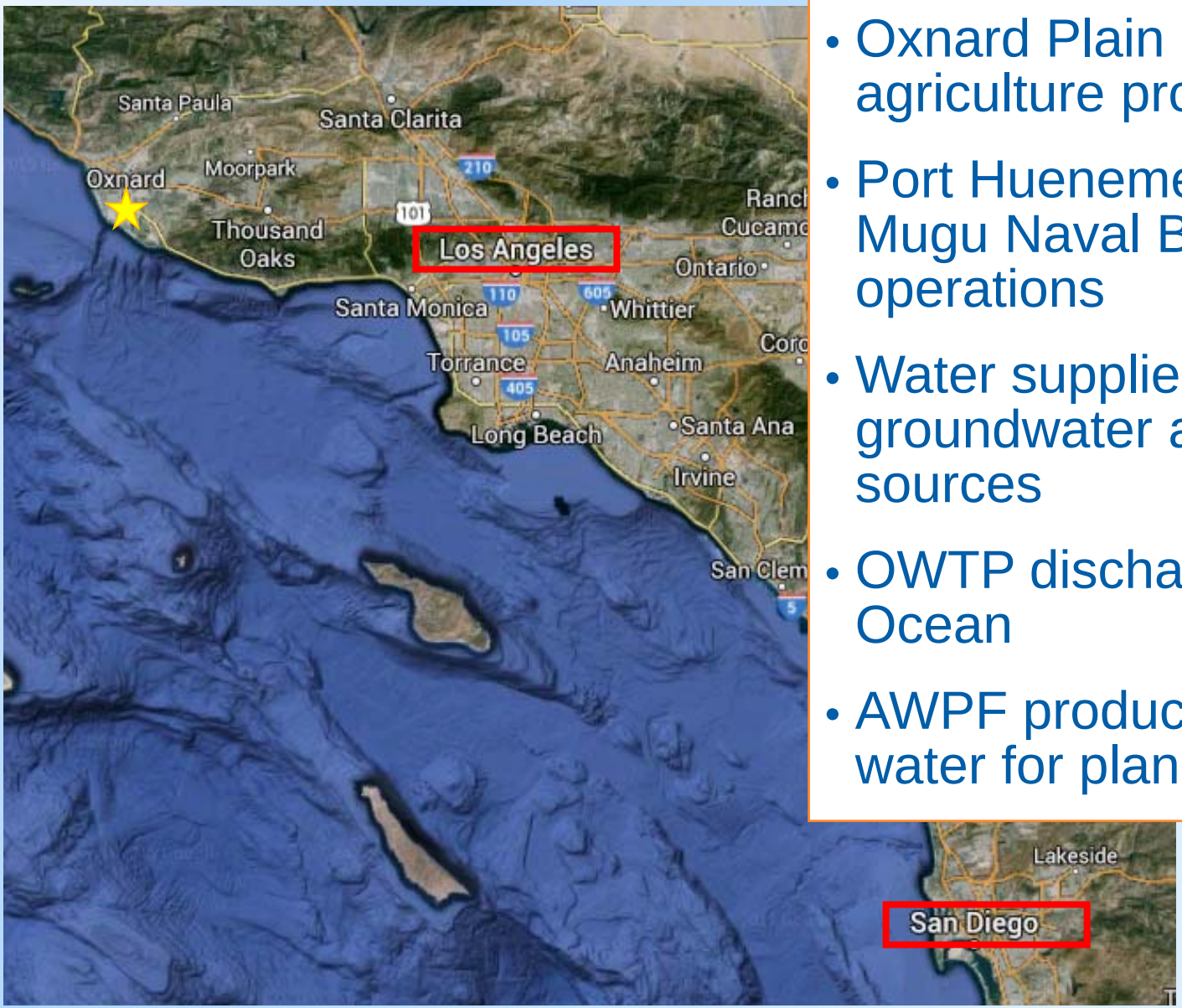
Tracy Clinton, Penny Carlo, Austa Parker

carollo
Engineers...Working Wonders With Water®

Agenda

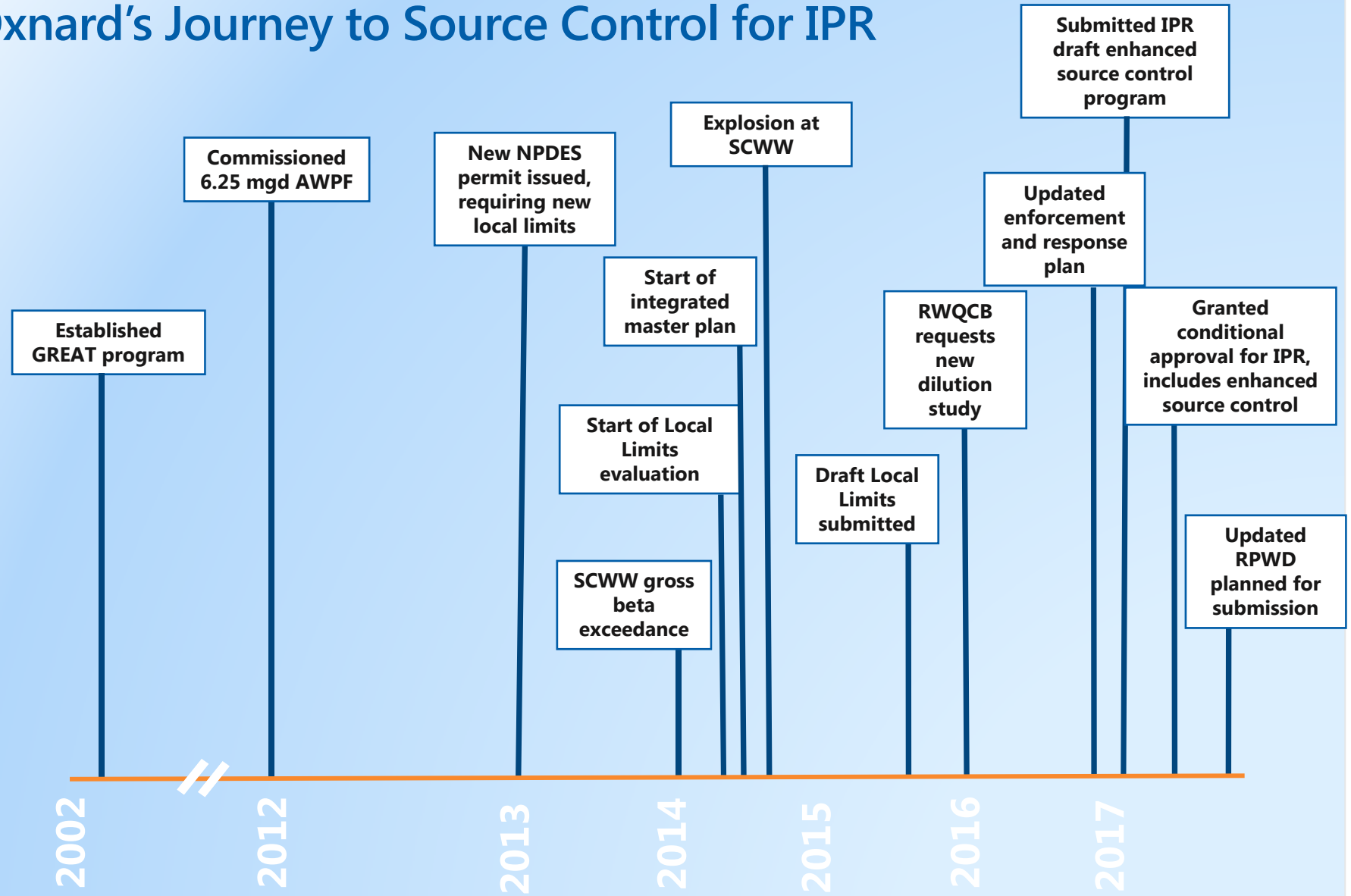
- Presentation on a source control story using the City of Oxnard as a model case study
- Timeline Journey of:
  - GREAT Program
  - Integrated Master Plans
  - Gross Beta violation & explosion
  - Local Limits
  - Enforcement Response Plan
  - Enhanced Source Control Program

City of Oxnard



- 2015 Population ~210,000
- Oxnard Plain has large agriculture production
- Port Hueneme and Point Mugu Naval Base operations
- Water supplied from local groundwater and imported sources
- OWTP discharges to the Ocean
- AWPF produces recycled water for planned IPR/DPR

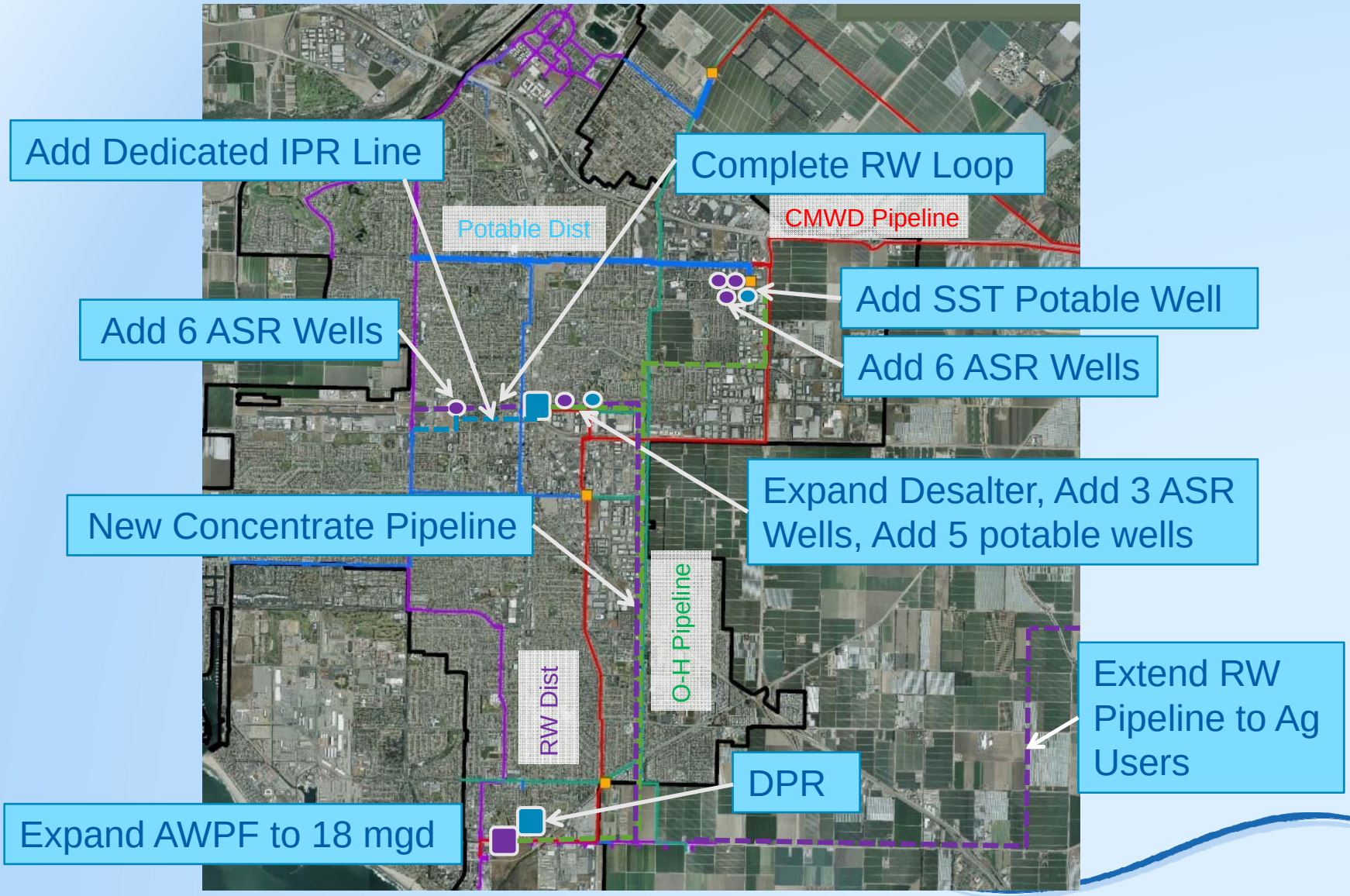
Oxnard's Journey to Source Control for IPR



GREAT Program and Integrated Master Plan

- Groundwater Recovery Enhancement and Treatment Program was established in 2002
- In 2012 Oxnard dedicated its new 6.25 mgd Advanced Water Purification Facility (AWPF)
- With the new AWPF, the City now needed to update their master plans, hence the PWIMP was awarded in 2014 for master planning:
  - Water
  - Wastewater
  - Recycled water
  - Stormwater
- The PWIMP included updating all of the regulatory components as well

The City of Oxnard is moving from Ocean Discharge to Advanced Water Reuse



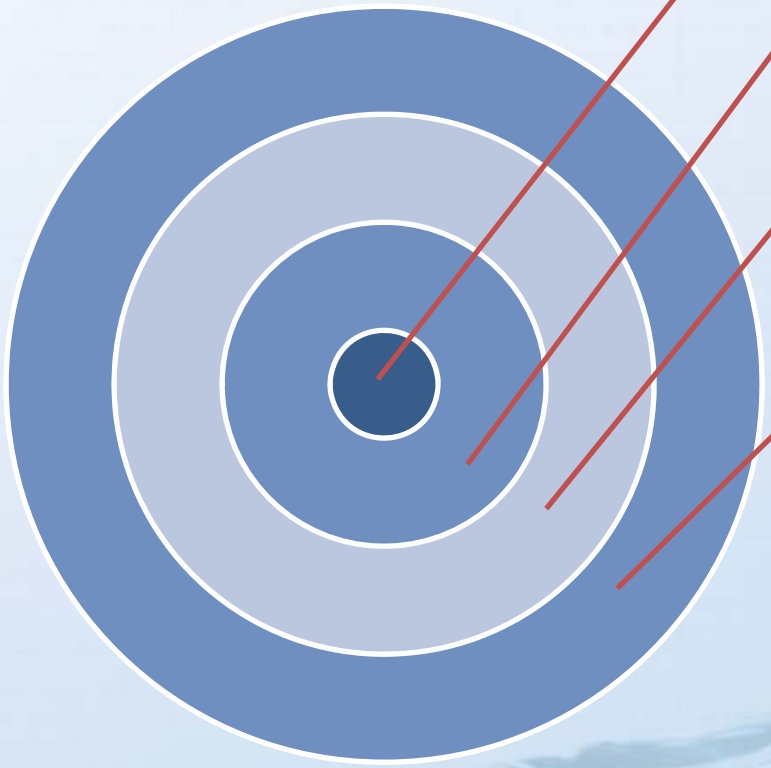
Gross Beta Violation & Explosion

What is a Centralized Waste Treatment Facility (CWT)?

- Defined in 40 CFR 437
  - *Any facility that accepts hazardous or nonhazardous industrial wastes for pretreatment processing before discharge to a Publicly Owned Treatment Works (POTW) or a surface water*
- Four subcategories
  - A - Metals
  - B – Oily Wastes
  - C – Organic wastes
  - D – Multiple wastes (combination of A, B, or C)

CWTs service a variety of industries who want their wastes treated off site.

CWT Discharges Are Regulated at the Federal and Local Level



Federal Limits

Local Limits

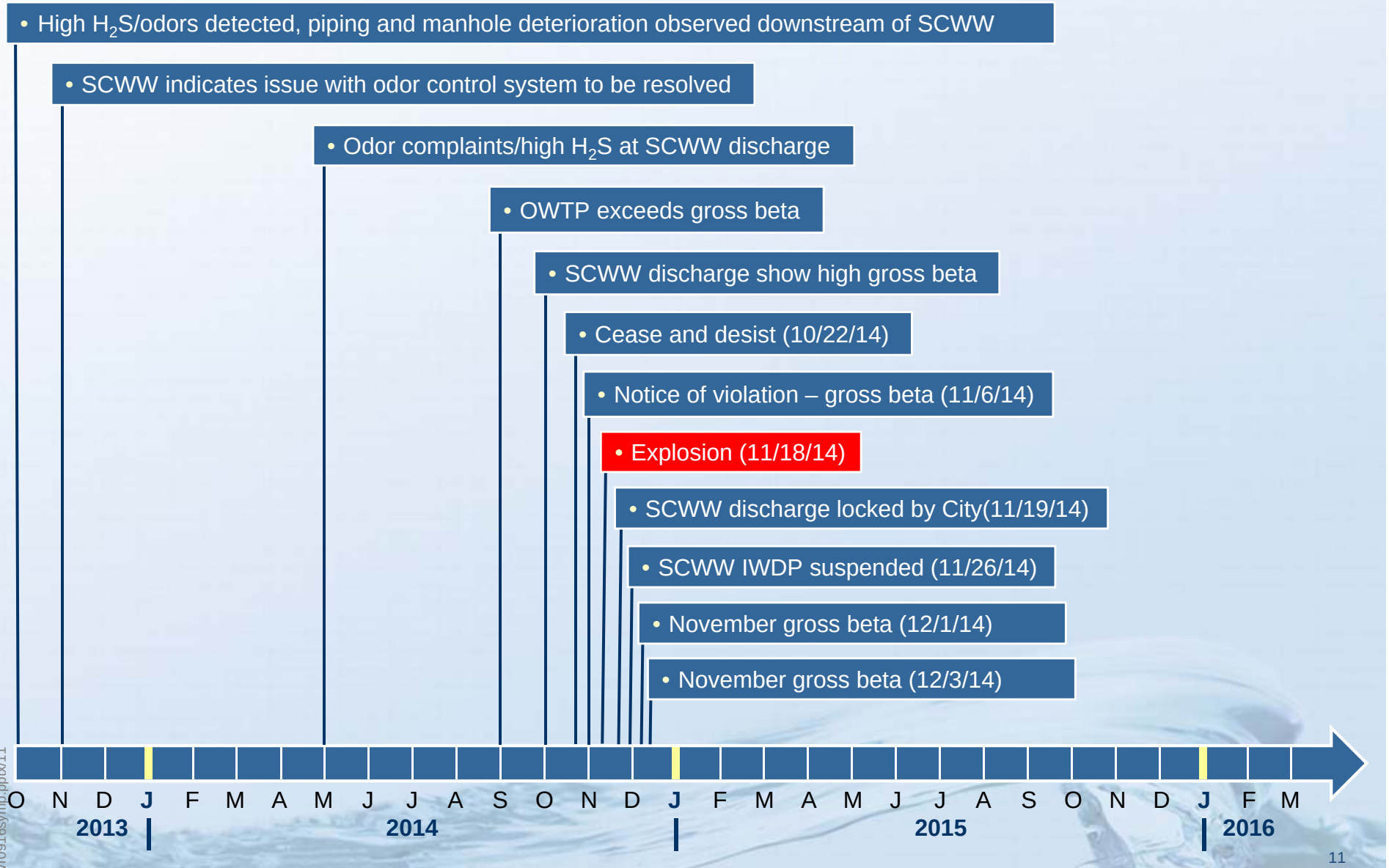
Recommended Removal Efficiencies 40 CFR 437

Additional Requirements Imposed By Permitting Authority

Santa Clara Wastewater (SCWW) is a Local Industry in Oxnard's Service Area

- One of the largest CWTs in California
  - 0.2 mgd
- Private company
  - Established in 1959
  - Discharges to the City of Oxnard OWTP via the collection system
- Subcategory "D" CWT
  - Metals
  - Organics
  - Oily Waste

The City Suspended SCWW's Permit



Santa Clara Waste Water facility explosion

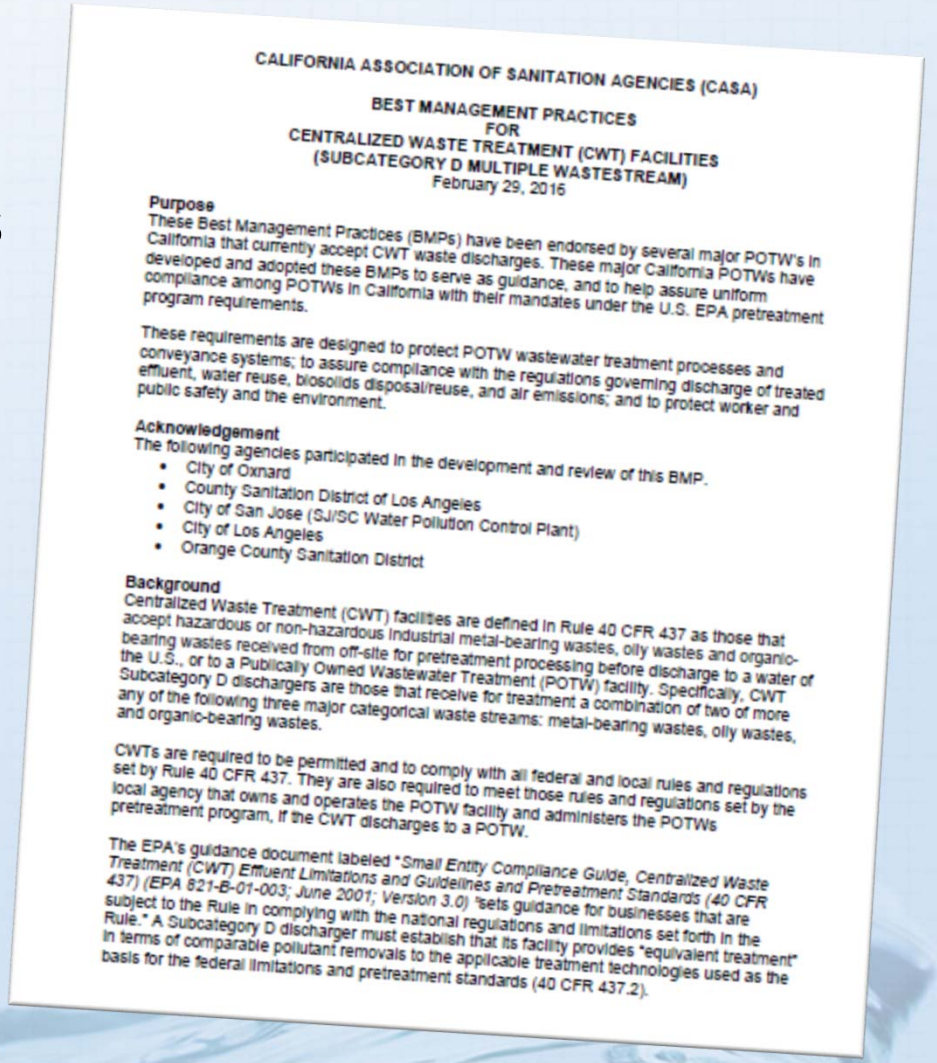
www.manufacturing.net/

More Rigorous Requirements Are Needed to Regulate CWTs

- 6 POTWs with Subcategory D CWTs surveyed
- 10 operating CWTs surveyed
- BMPs were established for CWT permits

BMPs Strengthen Local Control of CWTs

- Endorsed by the California Association of Sanitation Agencies (CASA)
- More stringent than federal regulations
- Strengthens a POTW's Pretreatment Program



CALIFORNIA ASSOCIATION OF SANITATION AGENCIES (CASA)

BEST MANAGEMENT PRACTICES
FOR
CENTRALIZED WASTE TREATMENT (CWT) FACILITIES
(SUBCATEGORY D MULTIPLE WASTESTREAM)
February 29, 2016

Purpose
These Best Management Practices (BMPs) have been endorsed by several major POTW's in California that currently accept CWT waste discharges. These major California POTWs have developed and adopted these BMPs to serve as guidance, and to help assure uniform compliance among POTWs in California with their mandates under the U.S. EPA pretreatment program requirements.

These requirements are designed to protect POTW wastewater treatment processes and conveyance systems; to assure compliance with the regulations governing discharge of treated effluent, water reuse, biosolids disposal/reuse, and air emissions; and to protect worker and public safety and the environment.

Acknowledgement
The following agencies participated in the development and review of this BMP.

- City of Oxnard
- County Sanitation District of Los Angeles
- City of San Jose (SJ/SC Water Pollution Control Plant)
- City of Los Angeles
- Orange County Sanitation District

Background
Centralized Waste Treatment (CWT) facilities are defined in Rule 40 CFR 437 as those that accept hazardous or non-hazardous industrial metal-bearing wastes, oily wastes and organic-bearing wastes received from off-site for pretreatment processing before discharge to a water of the U.S., or to a Publically Owned Wastewater Treatment (POTW) facility. Specifically, CWT Subcategory D dischargers are those that receive for treatment a combination of two of more any of the following three major categorical waste streams: metal-bearing wastes, oily wastes, and organic-bearing wastes.

CWTs are required to be permitted and to comply with all federal and local rules and regulations set by Rule 40 CFR 437. They are also required to meet those rules and regulations set by the local agency that owns and operates the POTW facility and administers the POTWs pretreatment program, if the CWT discharges to a POTW.

The EPA's guidance document labeled "*Small Entity Compliance Guide, Centralized Waste Treatment (CWT) Effluent Limitations and Guidelines and Pretreatment Standards (40 CFR 437) (EPA 821-B-01-003; June 2001; Version 3.0)* "sets guidance for businesses that are subject to the Rule in complying with the national regulations and limitations set forth in the Rule." A Subcategory D discharger must establish that its facility provides "equivalent treatment" in terms of comparable pollutant removals to the applicable treatment technologies used as the basis for the federal limitations and pretreatment standards (40 CFR 437.2).

SCWW - Outcome

- Investigated by:
  - Ventura Co DA
  - US EPA
  - US DOT
  - Ventura Co Environmental Health
  - Ventura Co Fire Dept
- Indictment of 9 individuals & 2 corporate entities
- 67 individuals testified before the Grand Jury
- Charges:
  - Conspiracy to dispose of hazardous waste
  - Failure to warn of a serious concealed danger
  - Handling haz waste w/ reckless disregard for human life
  - Withholding info re: substantial danger to public safety
  - Filing a false or forged instrument
  - Dissuading a witness

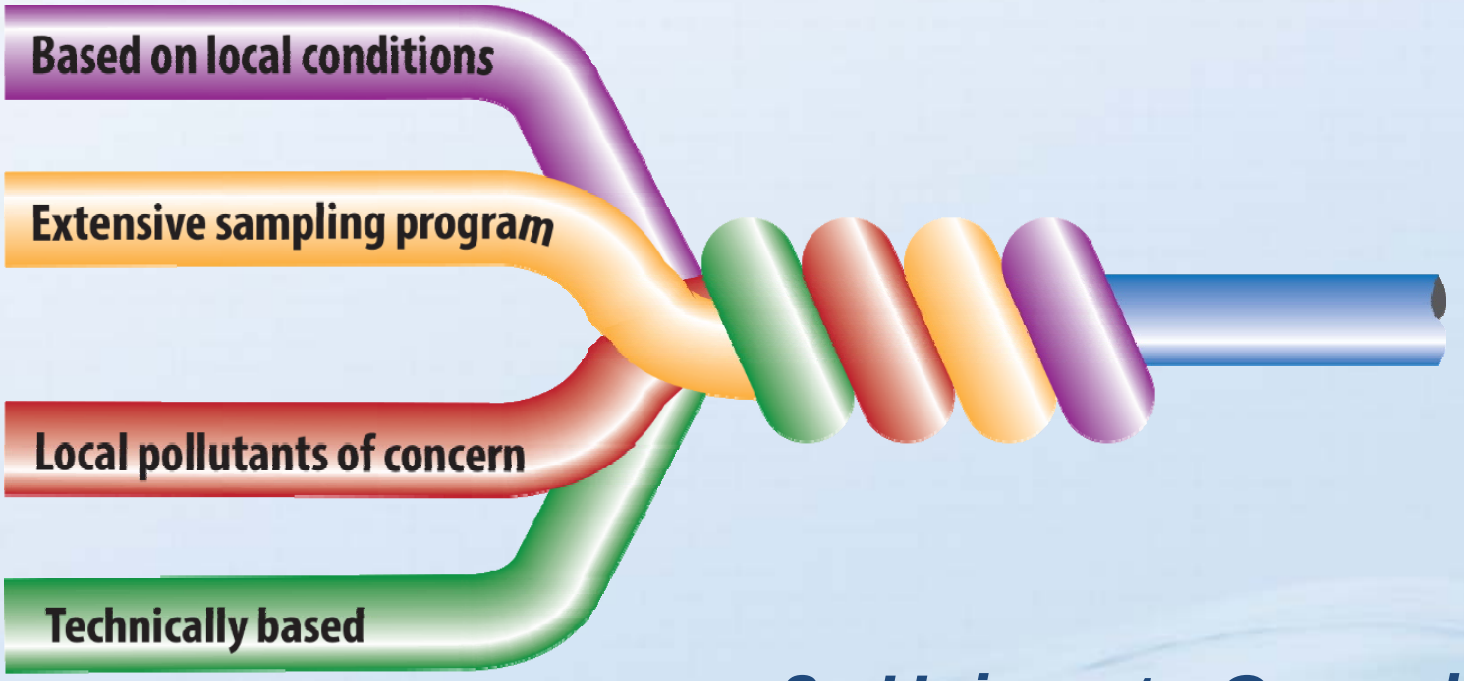
Local Limits for Oxnard

Oxnard Wastewater Treatment Facility

- EPA-Approved Pretreatment Program
- Permitted Capacity 31.7 mgd
- Existing Flows 16 mgd
- 35 Significant Industrial Dischargers

Local Limits – What Are They?

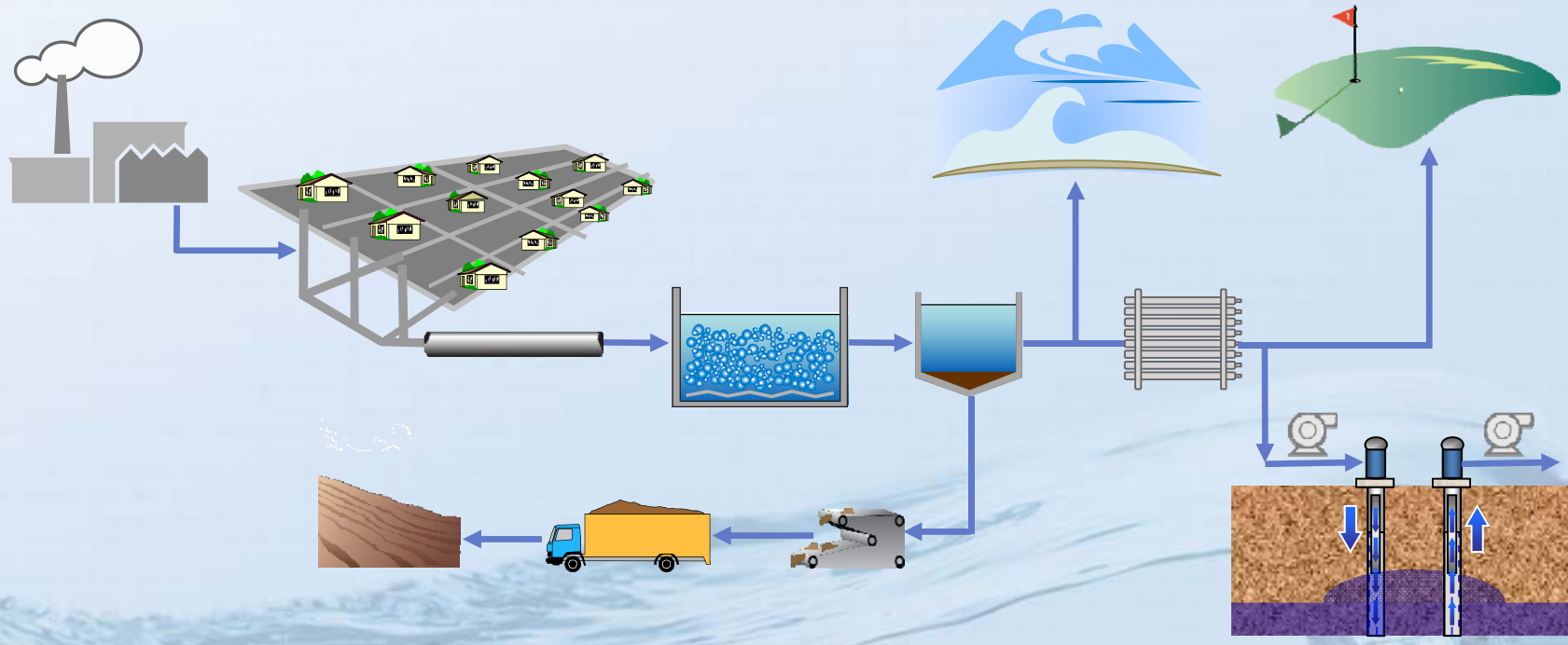
1. Maximum discharge concentrations
2. Apply to all nondomestic dischargers to a POTW



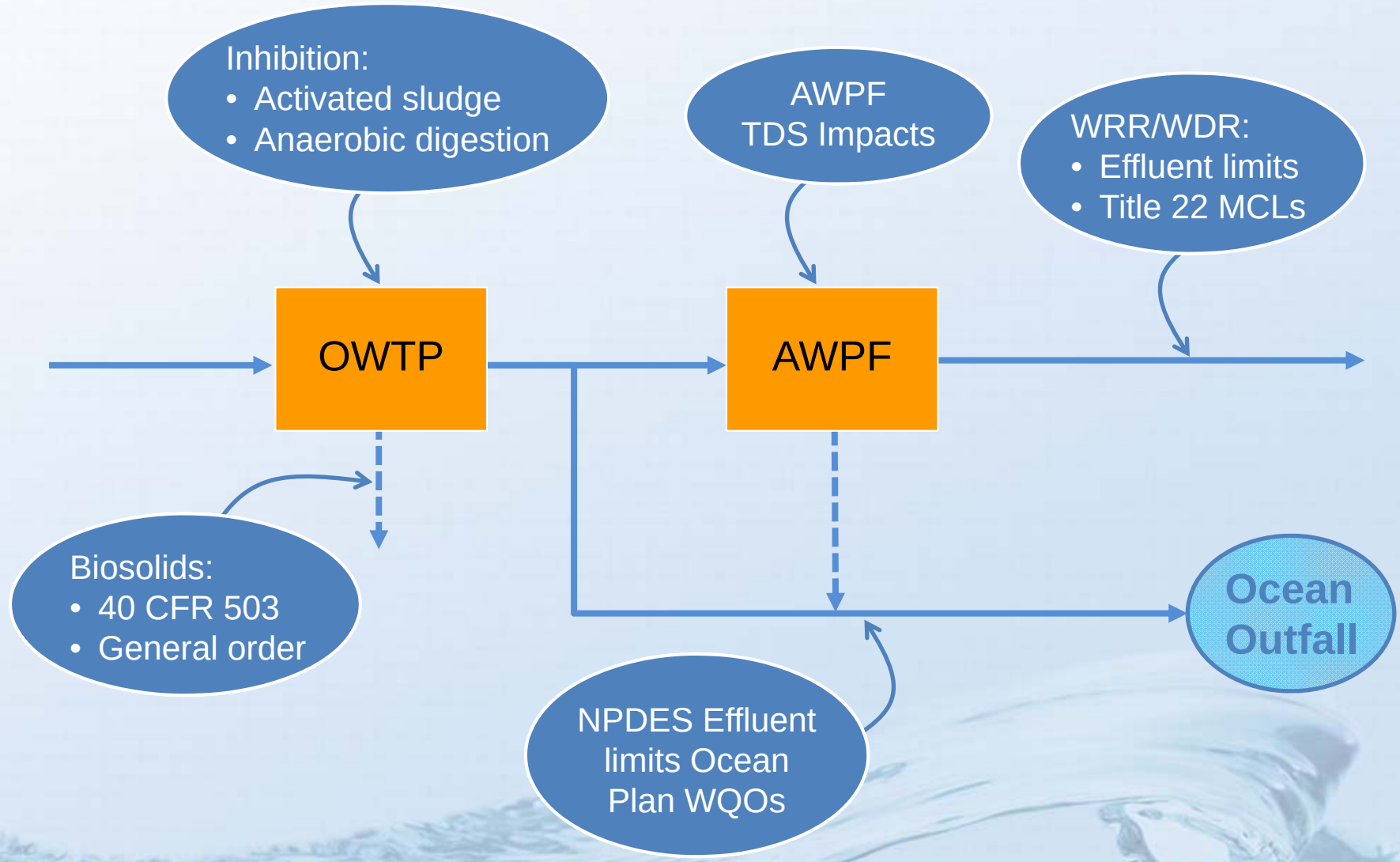
3. Unique to Oxnard

Oxnard's Local Limits are Designed to Protect the City's Water Supply

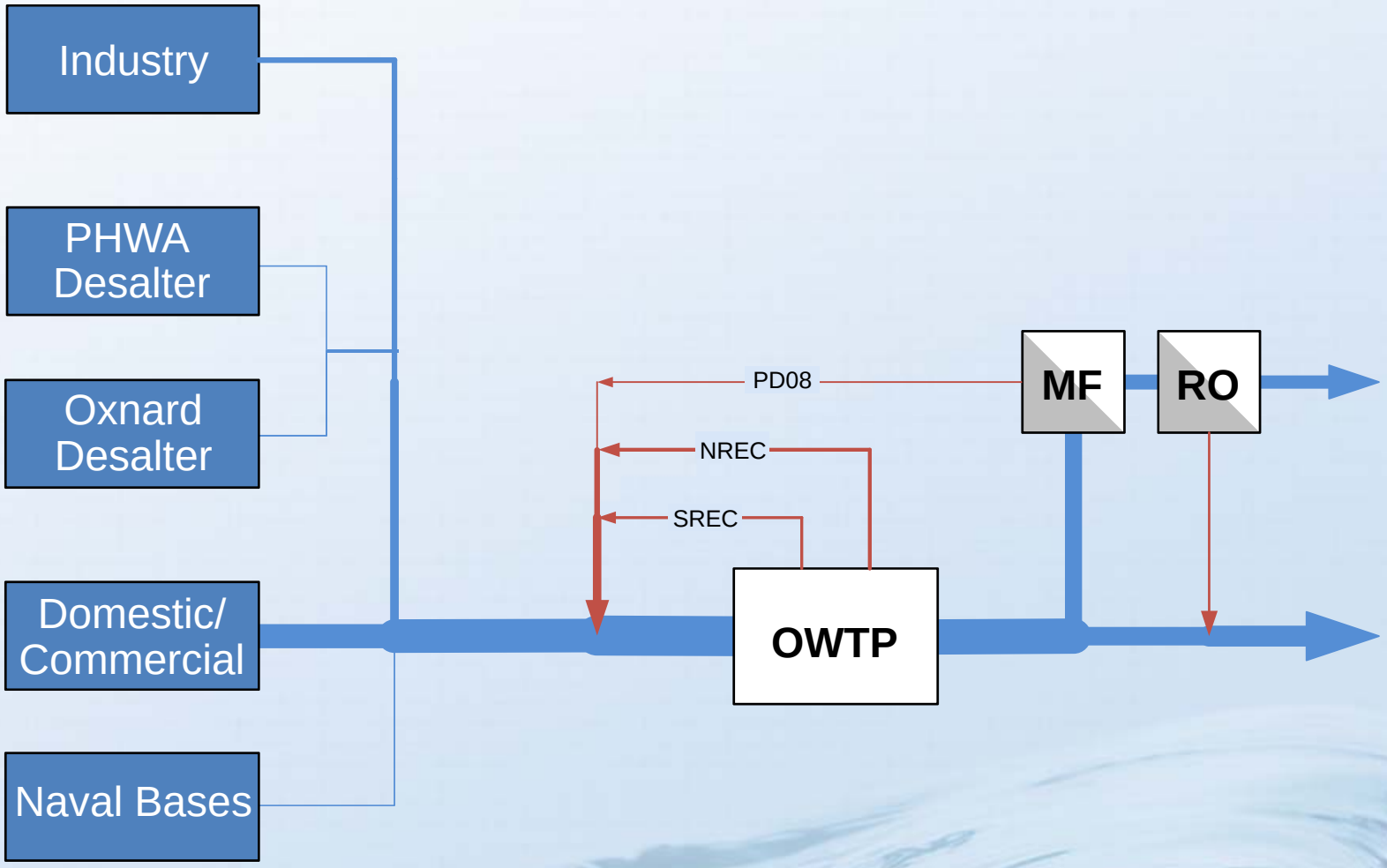
- Protect WWTF processes
- Maintain effluent and biosolids compliance
- Protect reuse
- Protect collection system
- Protect staff and public



The Drinking Water MCLs were Considered in the Local Limits Development



The Local Limits Address Multiple Linkages



Results: 19 new local limits developed, most more stringent than existing limits

- Over 100 pollutants were screened
- New limits established for:
  - BOD, TSS
  - Oil & Grease (vegetable and mineral)
  - Hydrogen sulfide (liquid)
  - 11 metals
  - Chloride
- No limits for trace organics were needed

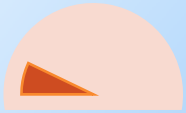
The new limits strengthen the pretreatment program and the ability to protect the City's water resources.

Local Limits That Will Impact Industries

Site Specific Allocations Developed	No Site Specific Allocations
Nickel	Boron
Zinc	H2S
Selenium	
Chloride	

Developing an Enhanced Source Control Program

Program Development

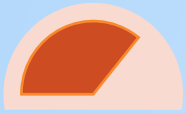


Define the Source

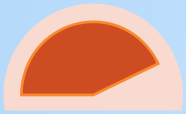
Evaluate existing source control program

Identify gaps for potable reuse and how to fill them

Feasibility of implementing enhanced source control



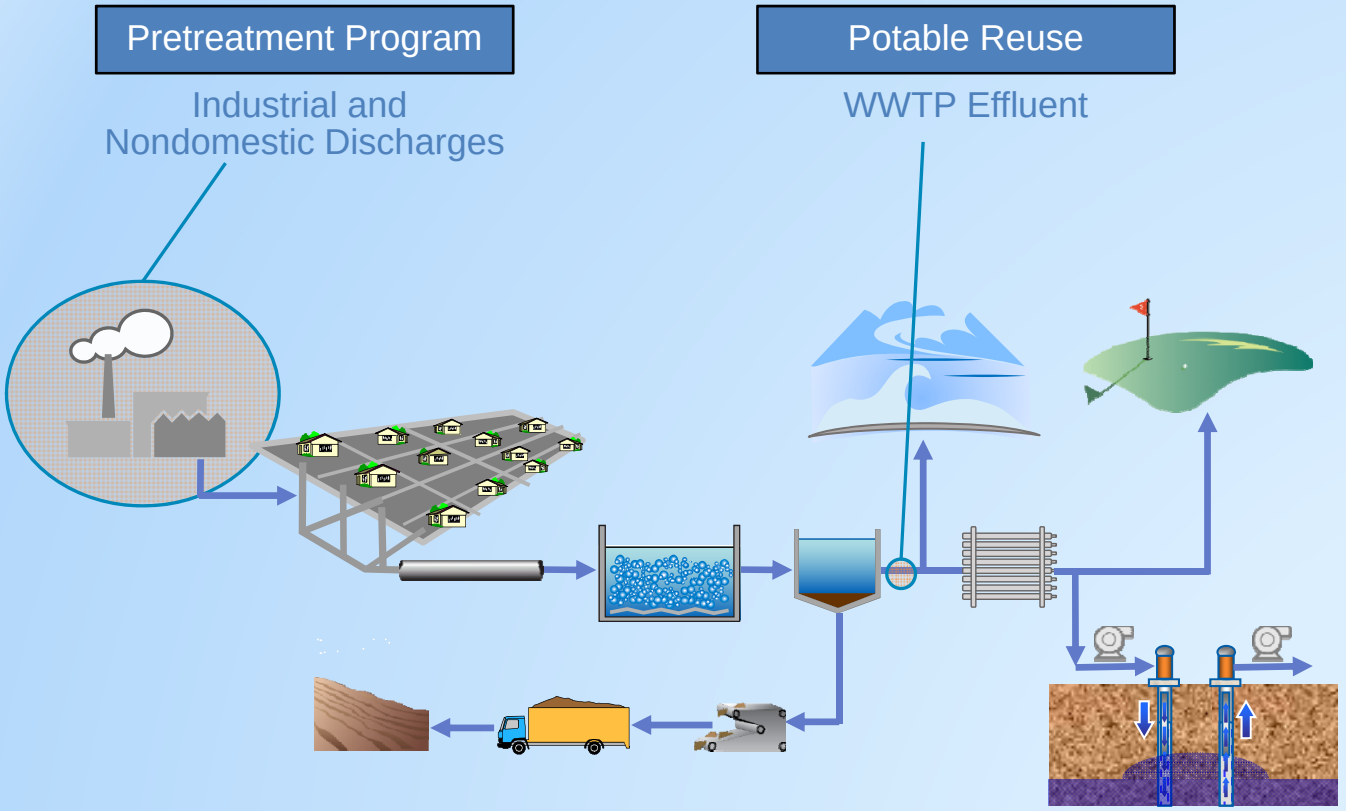
Action and response plans



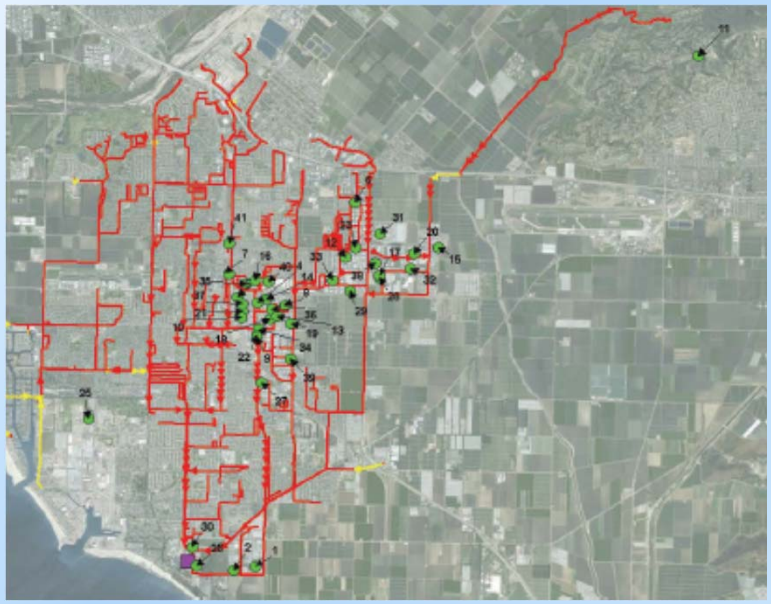
Outreach for prevention

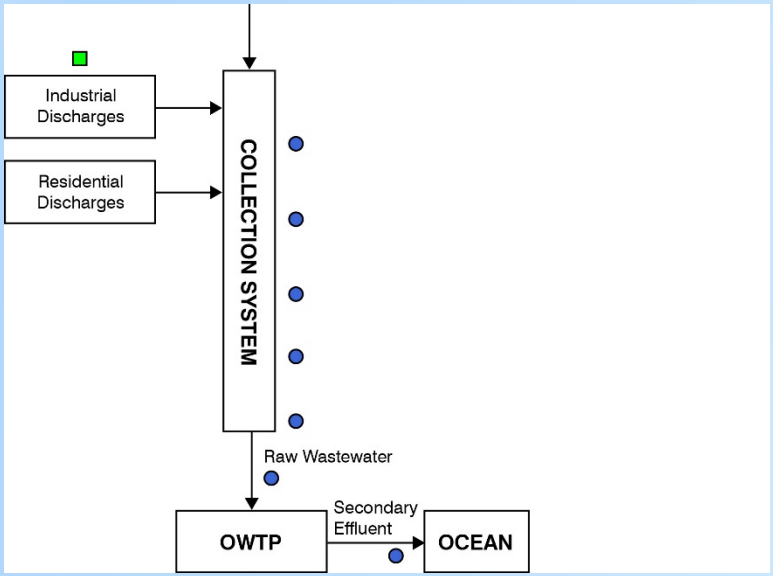
Ensuring longevity of the program

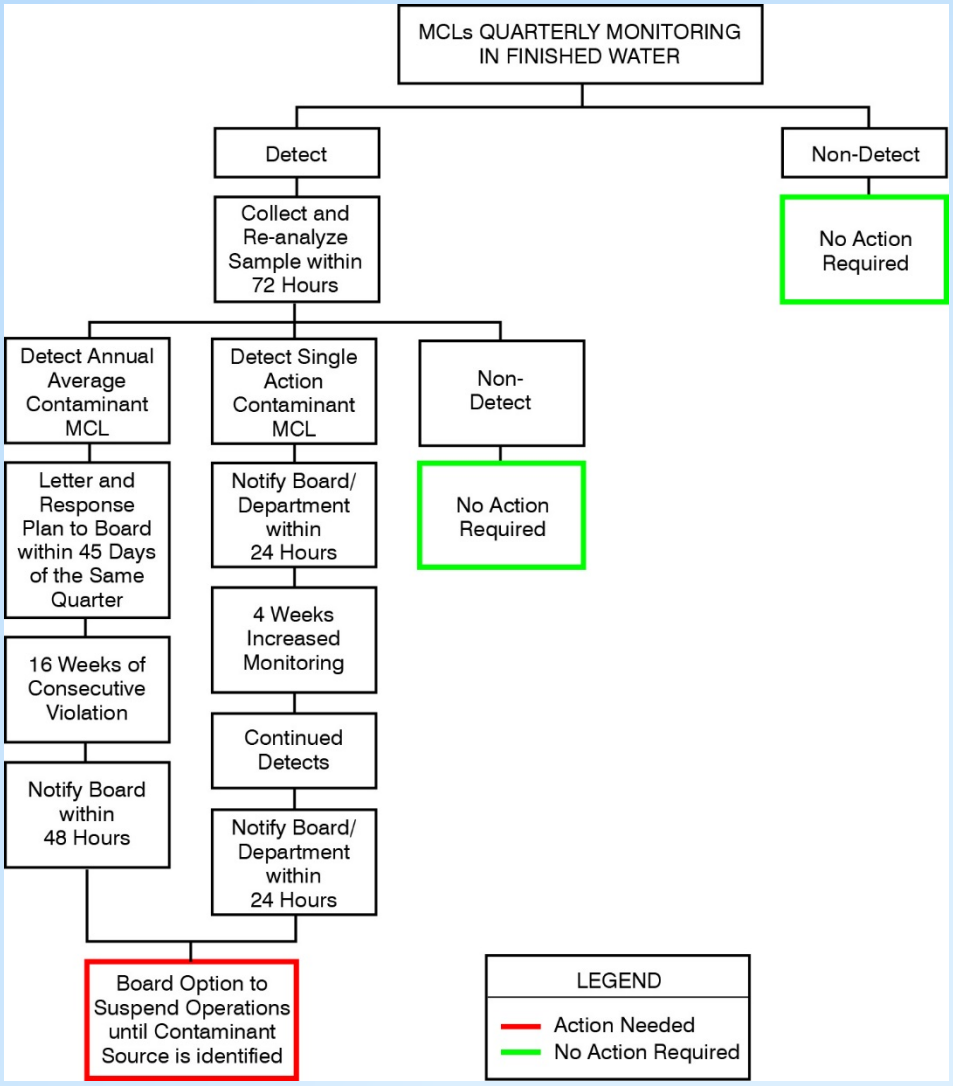
Rethinking the Definition of “source” for DPR.



Current Monitoring Strategies







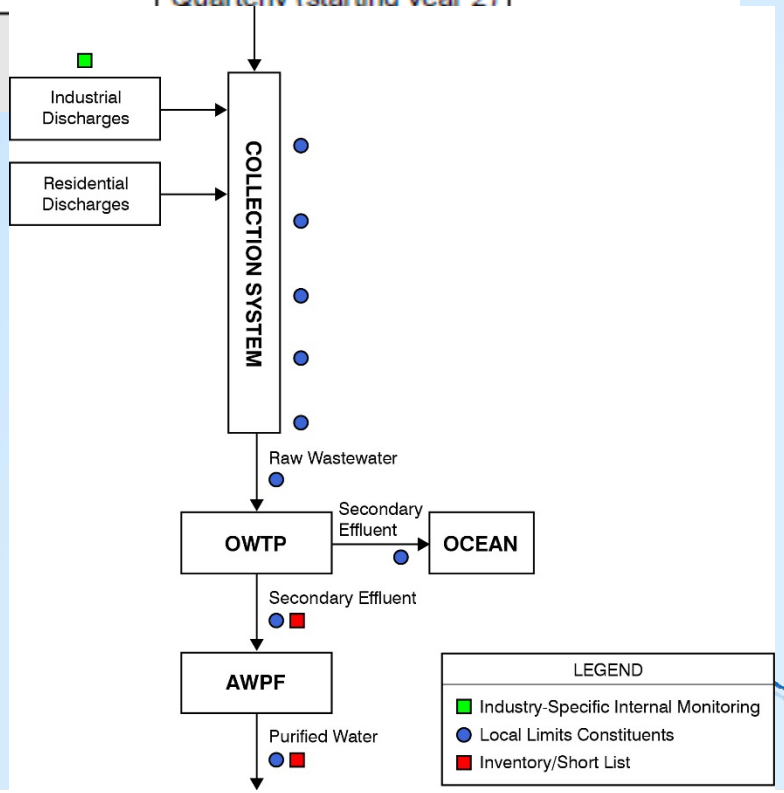
What gaps need to be filled to enhance existing source control programs?

Secondary Effluent
- NPDES

Finished Water
- Frequency
- Constituents

Online Monitoring
- Data compilation

Class of Constituents	Monitoring Plan		
	Collection System	Secondary Effluent	Purified Water
Industrial Discharge	Monthly and Internally (bi-weekly)	Monthly	Monthly
Local Limits	Monthly	Monthly (year 1) and Quarterly (starting year 2)	Monthly
NPDES Permit	Monthly	Monthly	Monthly
Regulated (MCLs)		Monthly (year 1) and Quarterly (starting year 2)	Monthly
Secondary Treatment Goals MCLs		Monthly (year 1) and Quarterly (starting year 2)	Monthly
Notification Levels		Monthly (year 1) and Quarterly (starting year 2)	Monthly
Contaminants of Emerging Concern (CECs)			



Feasibility of enhancing source control programs

- $$$
  - Analytical cost
  - Staff time
  - O&M requirements
  - Internal communications
  - Other considerations...

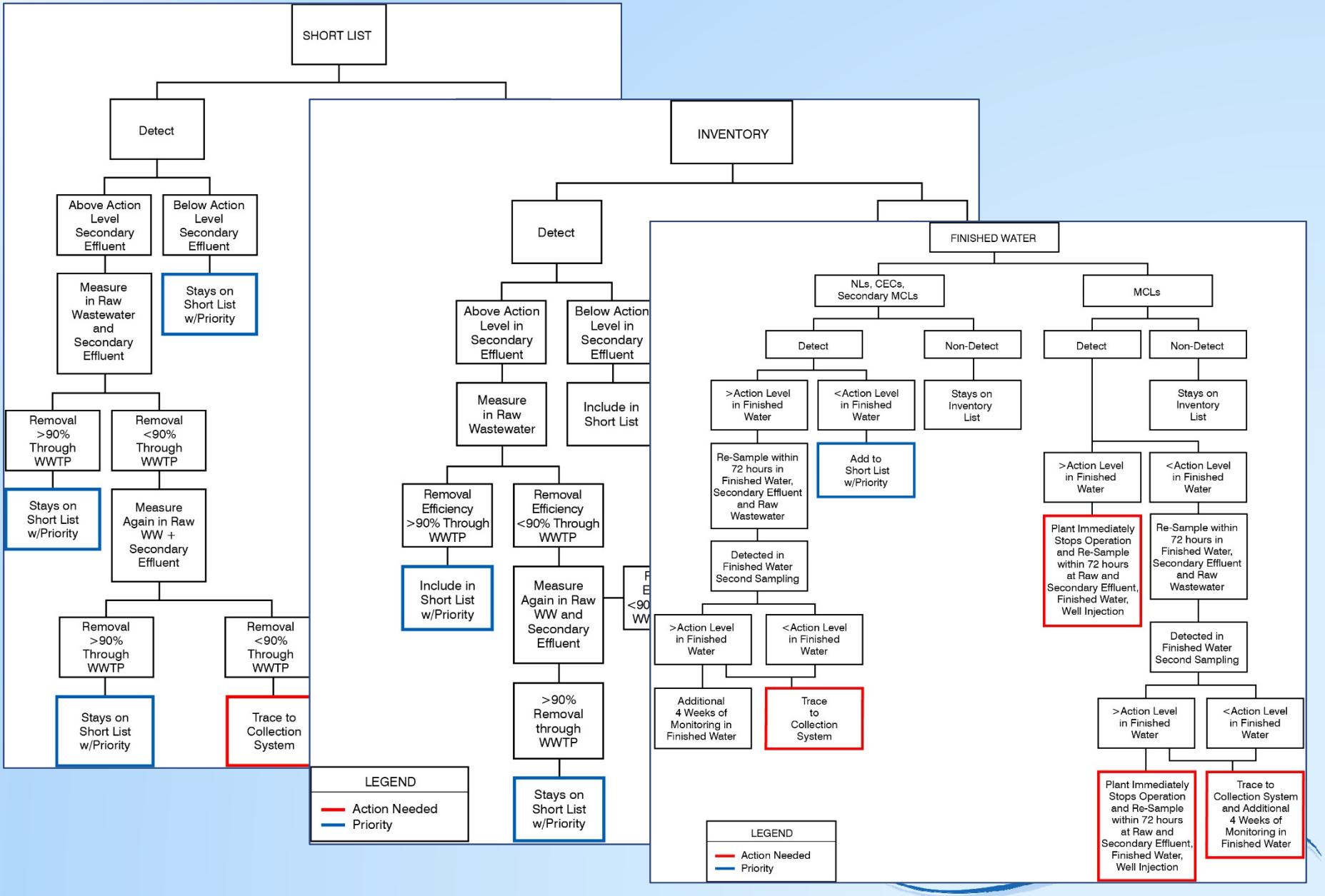
Inventory List

- MCLs
- Secondary MCLs
- CECs
- NLs
- Local Limits constituents

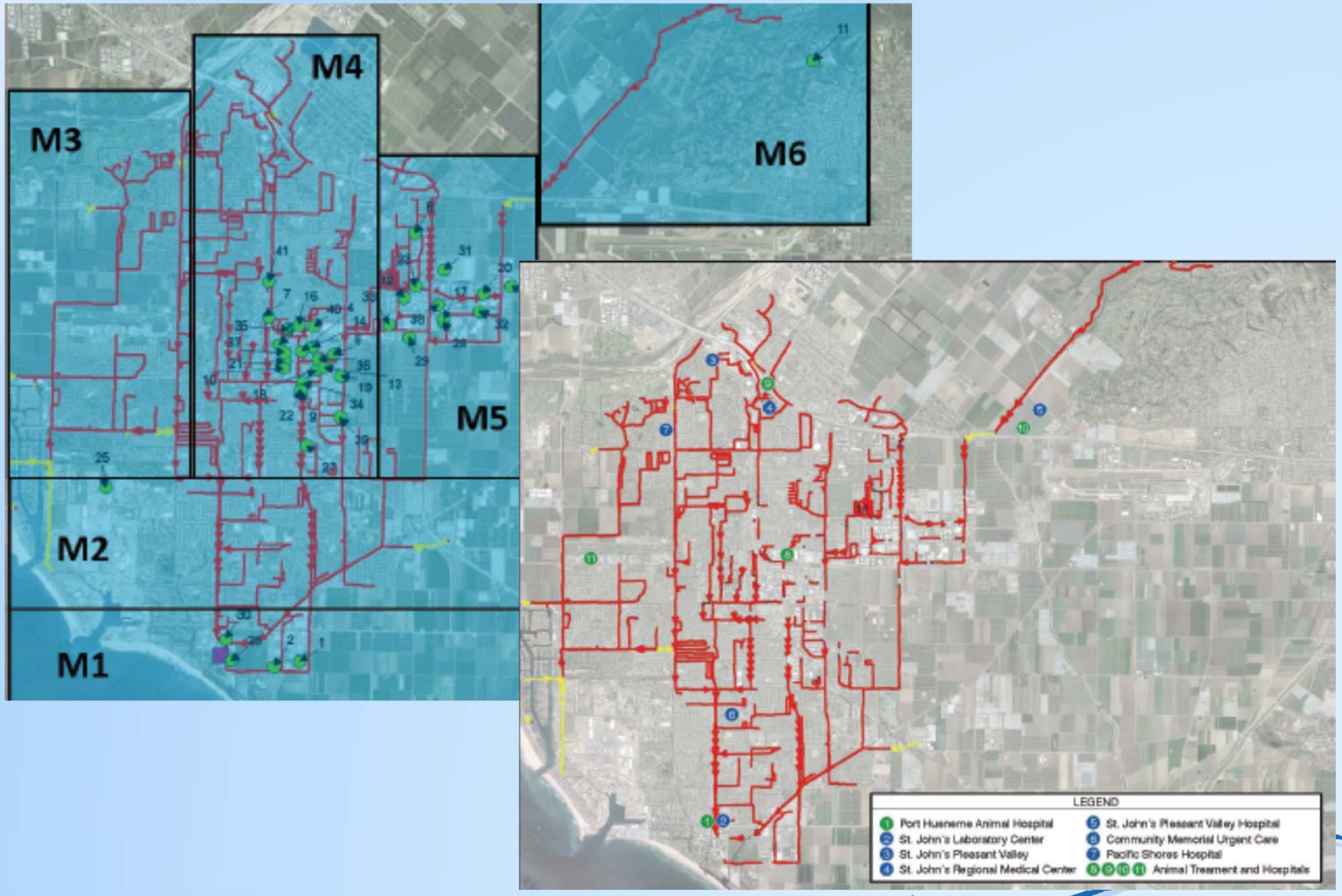
Short List

- Detected constituents from inventory monitoring
- Local limits and site-specific determined constituents

Acting fast and reducing risk for potable reuse



Acting fast and reducing risk for potable reuse



Outreach as a tool for source control

- Outreach for both industrial *and* household dischargers tailored to potable reuse.

Source Control Program Manager

- Industrial discharge
- Household discharge
- Collection system monitoring
- Wastewater treatment
- Advanced water treatment
- Online monitoring data
- Outreach programs
- Sampling protocols
- Communication with management and regulators

Considerations for ESCPs

- Size of community
- Technical, managerial and financial capabilities
- Number and type of industrial dischargers
- Inter-agency and cross-agency communications
- Existing source control program design

Thank You! Questions?

Source Control – How Deep into the System do we Need to go?

February 24, 2017
Northern California WateReuse Association Meeting

Tracy Clinton, Penny Carlo, Austa Parker

carollo
Engineers...Working Wonders With Water®