

# **Sustainable Groundwater Management Act (SGMA)**

## **Compliance Update**

**Planning Committee**  
**June 13, 2017**

# Agenda



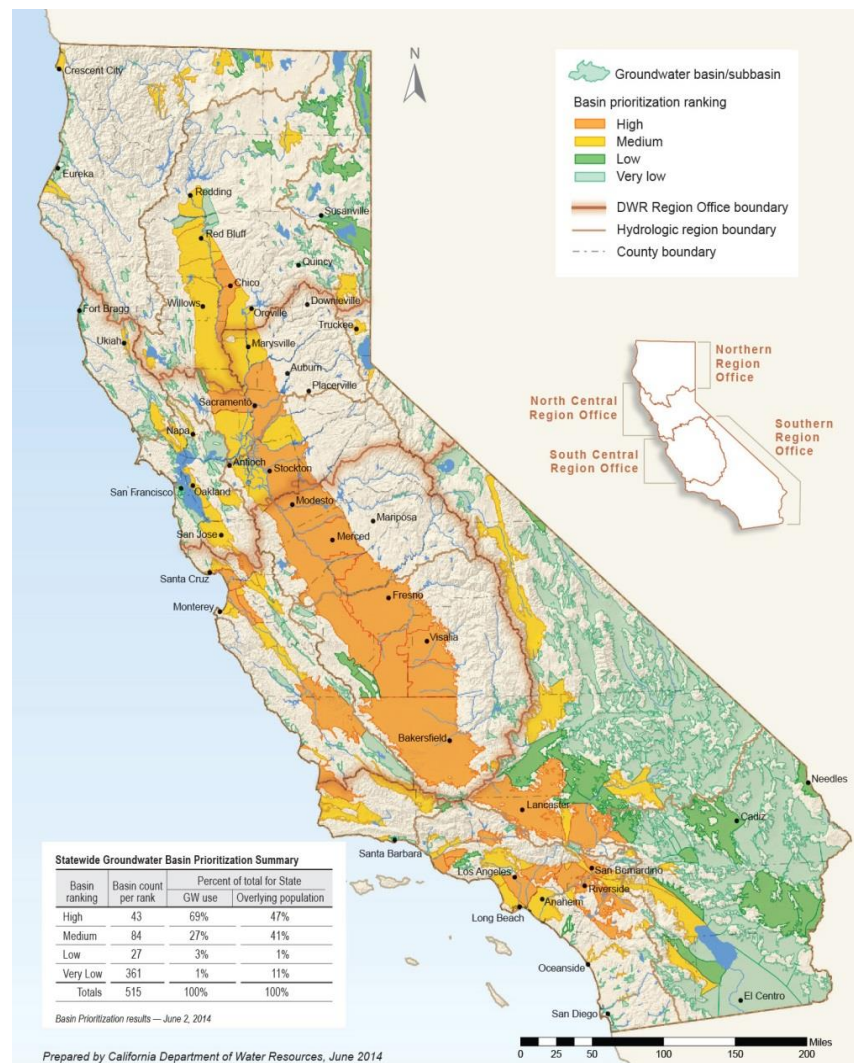
- Introduction
- Statutory Responsibilities as a Groundwater Sustainability Agency (GSA)
- Current Status of SGMA Compliance
- Funding SGMA Compliance Activities
- Next Steps

# Introduction

- Requires Groundwater Sustainability Plans in 127 high- and medium-priority basins
- Authorizes management tools for local agencies
- Creates State “backstop”
- Defines time frame for accomplishing goals

BASIN RANKING	BASIN COUNT	PERCENT OF TOTAL	
		GW USE	POPULATION
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals	515	100%	100%

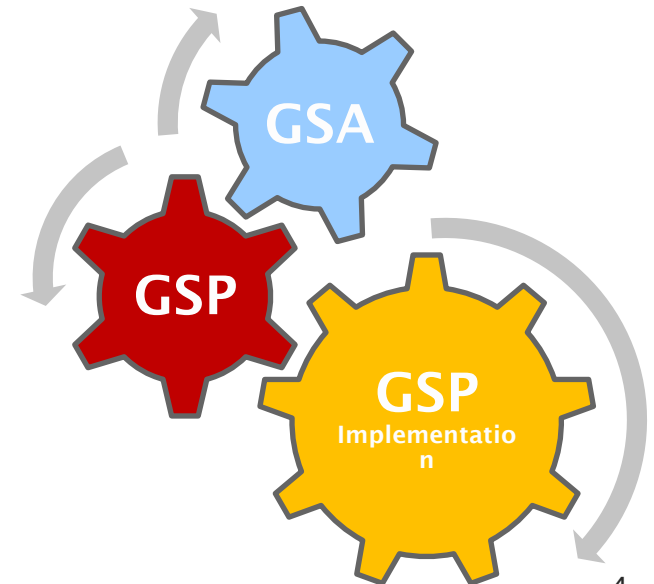
Basin Prioritization Results – June 2, 2014



# SGMA Implementation Overview



- Phase 1: Formation of governing bodies- Groundwater Sustainability Agency(s) (GSAs)
- Phase 2: Development of Groundwater Sustainability Plans (GSPs)
- Phase 3: Implementation of GSPs



# GSA Overview



- The purpose of SGMA is to provide a framework for the sustainable management of California's groundwater resources
- SGMA provides local agencies with the authority and tools to manage groundwater in their jurisdictions

As a GSA, EBMUD is required to:

- Develop a GSP in accordance with the GSP regulations by 1/31/22;
- Implement the approved GSP to meet the sustainability goals; and submit annual reports to DWR;
- Evaluate the GSP periodically to assess changing conditions and determine whether goals are being met; and modify the GSP as needed.

# Financial Authorities as a GSA

- EBMUD can impose fees or taxes to fund the groundwater sustainability plan implementation
- Fees could include permit fees, groundwater extraction fees or fees for other regulated activities
- Alternatively, EBMUD could adopt a resolution requesting collection of the fees in the same manner as ordinary ad valorem taxes

*These regulatory and financial authorities are provided to GSAs to regulate, enforce and fund sustainable groundwater management activities from approved GSPs.*





# Noncompliance with SGMA



- State Intervention could happen if:
  1. GSAs covering the entire basin are not formed by 6/30/17, or
  2. There are no GSP(s) covering the entire basin by 1/31/22, or
  3. DWR and SWRCB determine a GSP is inadequate and a basin is in long-term overdraft anytime after 1/31/22.
- If state intervention occurs, groundwater extractors will need to file reports with SWRCB and pay the associated volumetric and per-well fees. EBMUD would only be subject to fees to the extent it extracts water from the subbasin
- No criminal penalties for SGMA noncompliance

# Current Status of SGMA Compliance

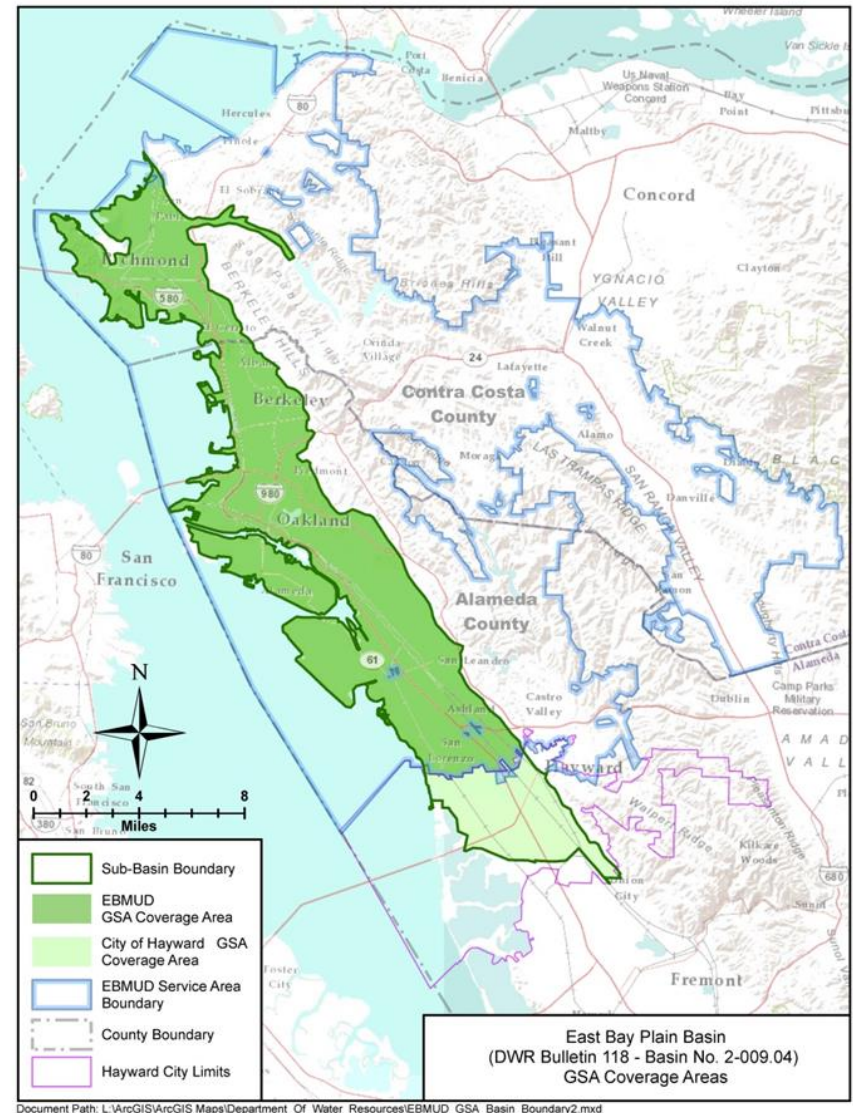


- GSA Formation – EBMUD & Hayward service areas
- Unmanaged area of the subbasin (approx. 20 acres)
- Funding SGMA Compliance Activities
- Next Steps in GSP development



# Completed Milestones

- Board resolution to become a GSA on 8/9/16
- Submitted a GSA application on 8/15/16
- Became an exclusive GSA for a portion of the basin on 11/28/16 after the 90-day public comment period
- Hayward GSA approved on 6/6/17



# Funding SGMA Compliance Activities



## ***GSP Development:***

- \$61 million Prop 1 Grant funding available
- One grant (up to \$1 million) per basin
- 50% cost share requirement
- DWR will begin accepting applications in August 2017
- Estimated cost for East Bay Plain GSP - \$2M

## ***GSP Implementation:***

- Funding mechanism to be determined as GSP is developed



# Next Steps

- Work with City of Hayward to prepare a grant application
- Develop workplan to prepare the GSP
- Coordinate with stakeholders including cities and counties and DWR
- Develop the GSP for the entire East Bay Plain basin



# Preliminary Schedule



- Grant Application (Summer 2017)
- MOU with City of Hayward (Fall 2017)
- Consultant Solicitation and Contract Award (Spring 2018)
- Groundwater Modeling (2018-2019)
- GSP Development (2019-2020)
- GSP Implementation (2021)

# Trihalomethanes

Planning Committee

June 13, 2017



# Background



- Haloacetic Acids (HAAs) and Trihalomethanes (THMs) are Disinfection By-Products
- Probable carcinogens
- Regulated by EPA and CA Division of Drinking Water (DDW)
- Maximum Contaminant Levels
  - THMs: 80 ppb
  - HAAs: 60 ppb

# Other Potential Health Effects of THMs



- Reproductive
  - Miscarriages, developmental effects
  - Epidemiology studies support hazard concern
  - Waller et al. study (1998)
    - Higher risk of miscarriage for consuming of 5 glasses of water per day containing >75 ug/L THM
    - Study used data from 78 drinking water utilities, including EBMUD



# Disinfection vs. DBPs



- Regulations address acute and chronic health effects

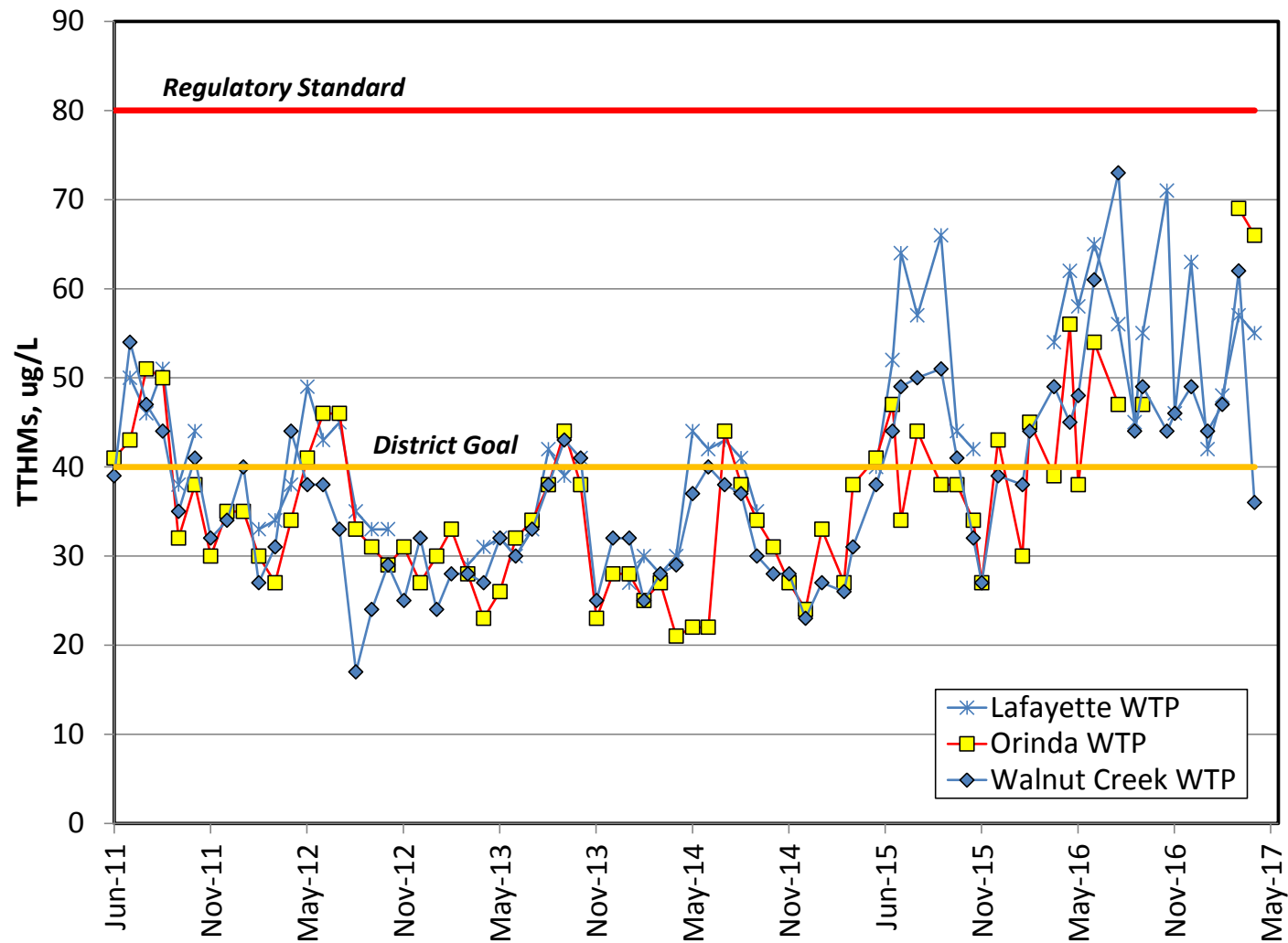
Acute	Chronic
Disinfect to kill or inactivate pathogens	Minimize formation of DBPs
Maintain chlorine residual in the distribution system	
Protect against fecal contamination	

# THMs are Elevated in the Distribution System



- Concentrations are higher now compared to previous years
- Likely related to the drought
- Four factors
  - Source water composition
  - Water is warmer
  - Customers using less water – water age increasing
  - New laboratory method

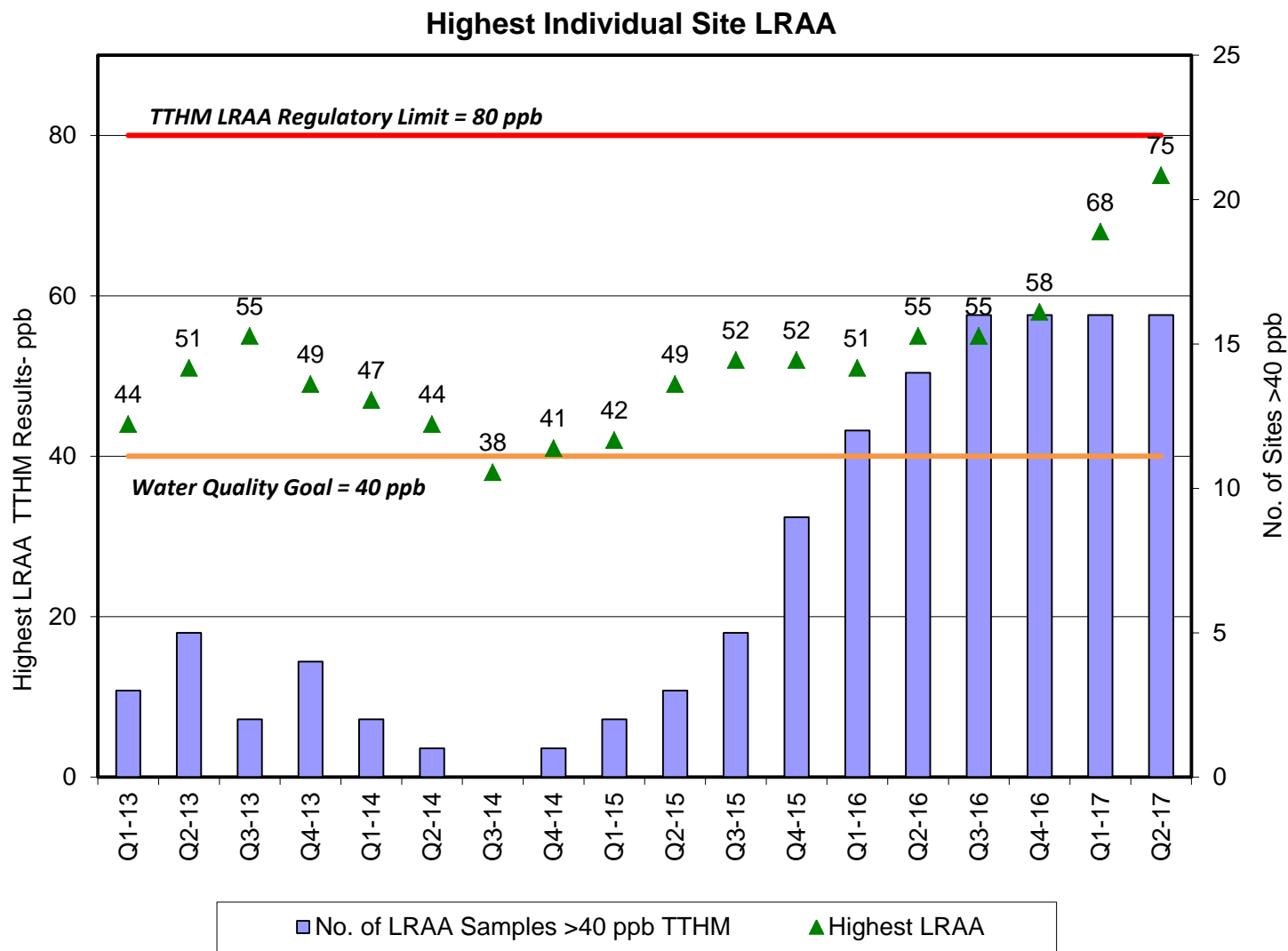
# THMs From Inline Plants



# Quarterly Samples from 16 Sites



# THMs at Distribution System Taps



# How Can We Reduce THMs?



- Physically Remove TOC
- Reduce Contact Time
- Optimize Chlorine Dosage
- Adjust pH

# Immediate Actions



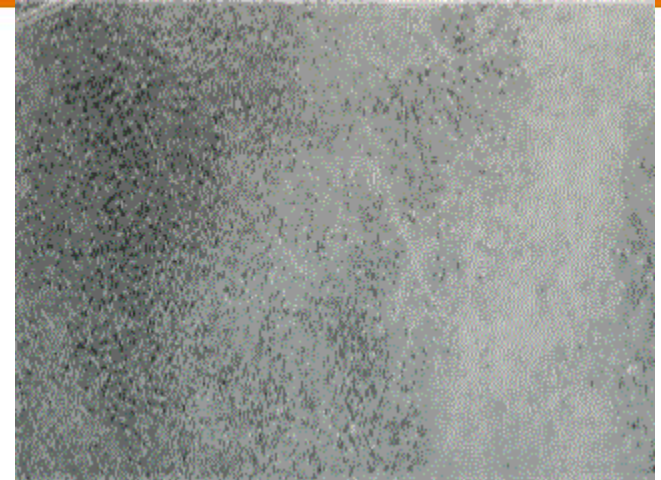
- Operational adjustments
  - Lower pH
  - Reduce/optimize chlorine dose
  - Minimize contact time
- Distribution system actions
- Additional monitoring
- Air-stripping at Lafayette WTP



# Lafayette WTP – Air Stripping Trihalomethanes



- Remove THMs through Volatilization
- Bubble Aerators Installed
- Started operation June 6<sup>th</sup>



# Short-Term Actions



- Short-Term Actions
  - Install CO<sub>2</sub> system at Bixler, in-line WTPs
  - Install chloramine boosting stations
  - Construct permanent pilot plant

# Dedicated Pilot Plant



- Permanent Pilot Plant needed
- Existing pilot plant is located at Walnut Creek PP#1 and #2
- Original Walnut Creek Pumping Plant site is a potential new location

# Long Term Planning



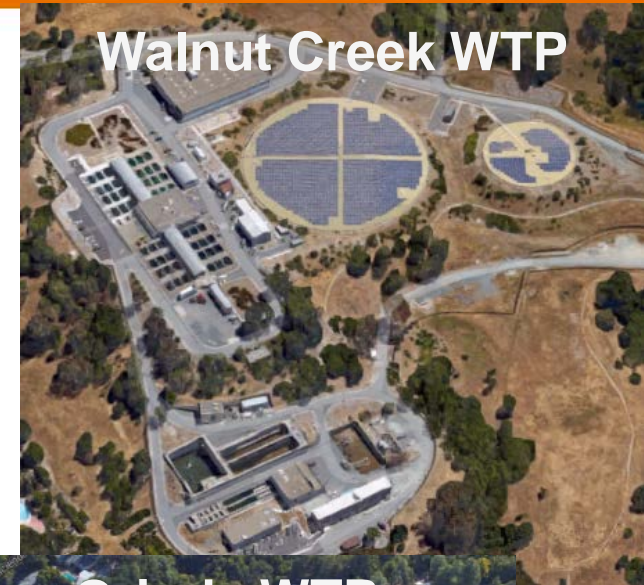
- Limited short-term tools are available
- Inline filtration technology is not suitable for tomorrow's regulatory climate
- Significant plant upgrade needs:
  - Sedimentation/clarification
  - solids handling
  - alternative disinfectants



# Long Term Goals



- Treatment Reliability
  - Disinfection
  - Solids Handling
  - Filtration
- System Level Reliability
- Raw Water Flexibility
- Treatment Capacity
- Regulatory Robustness



# Short-Term Capital Projects to Control THMs: pH Adjustment



- Design is underway
- pH adjustment equipment at each inline plant
  - Reduces THM formation
  - More efficient alternate coagulants are possible
  - Lower chlorine dose required for disinfection
- Construction starts 2018



CO<sub>2</sub> Storage Tanks



# Long-Term Actions to Control THMs: TOC Removal



- District has studied a wide range of pretreatment options
- District has been pilot testing since Nov. 2016
- Evaluated pretreatment alternatives
- Leading technology show promise:
  - Removal 25-30% of TOC
  - Removal of 40-50% THM formation





# Long-Term Actions to Control THMs



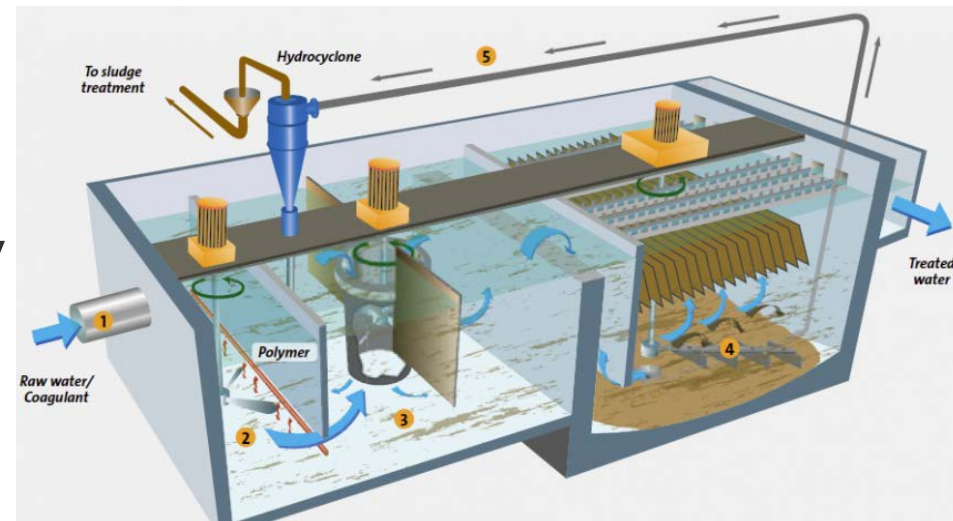
- Preliminary design is complete for Walnut Creek WTP
- Planning for Orinda and Lafayette WTP is underway
  - Revisiting WTTIP EIR recommendations
  - Developing alternatives for CEQA
- Considering accelerating project elements

# Pretreatment has Many Other Benefits beyond THM Control



Response to:

- High Turbidity
- Watershed Changes
- Supplemental Supply Flexibility
- Algae Control
- Regulatory Compliance
- Taste-and-Odor Control



# Post Filtration Chlorine Contact



- **WTPs with dedicated post-filtration CT:**
  - USL WTP
  - Walnut Creek WTP
- **Planned post-filtration CT**
  - Orinda WTP (planning)
  - Sobrante WTP (planning)



Walnut Creek WTP

# Long Term - Next Steps



- Complete Inline WTP Pretreatment Study
- Board Update in September
  - Possible Accelerated Projects
  - Propose Implementation Schedule

# Questions

