

Sunnyvale Clean Water Program

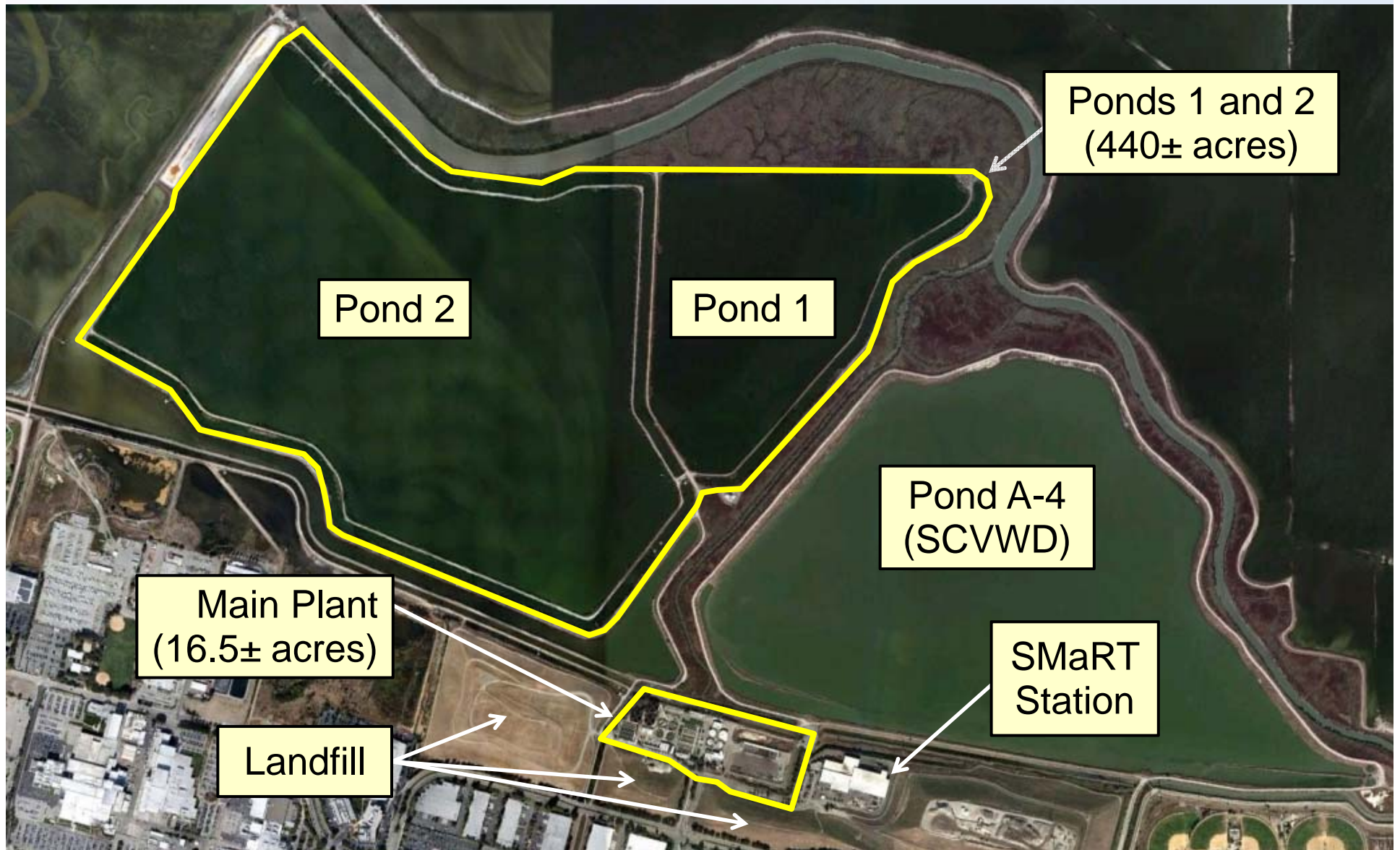
**CITY COUNCIL
STUDY SESSION
March 7, 2017**



Presentation Summary

- ✓ Existing Process Facilities Overview
- ✓ Planning Process
- ✓ Recycled Water Opportunities
- ✓ Phasing and Implementation
- ✓ Environmental (CEQA)
- ✓ Public Outreach Program
- ✓ Overall Program Costs/Financing
- ✓ Program Status
- ✓ Next Steps

Overall Plant Site



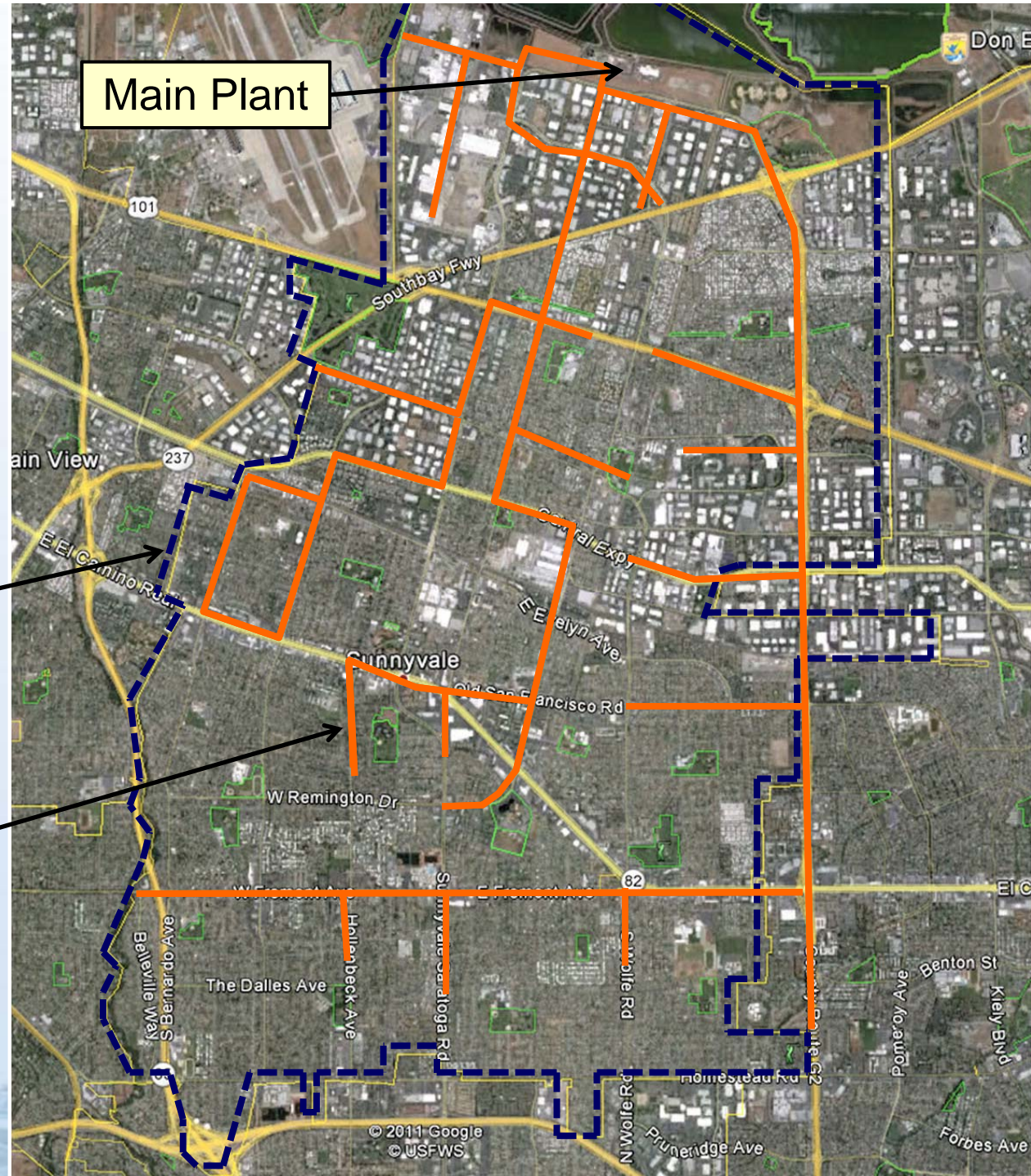
Main Plant Site (WPCP)



Collection System Conveys Raw Sewage to Plant

City Limits

Conveyance System



Existing Process Facilities

Primary Treatment



Primary Treatment
(Pumping/
Grit Removal/
Sedimentation Tanks)



Pumping

Sedimentation Tanks



Grit Removal

Secondary Treatment



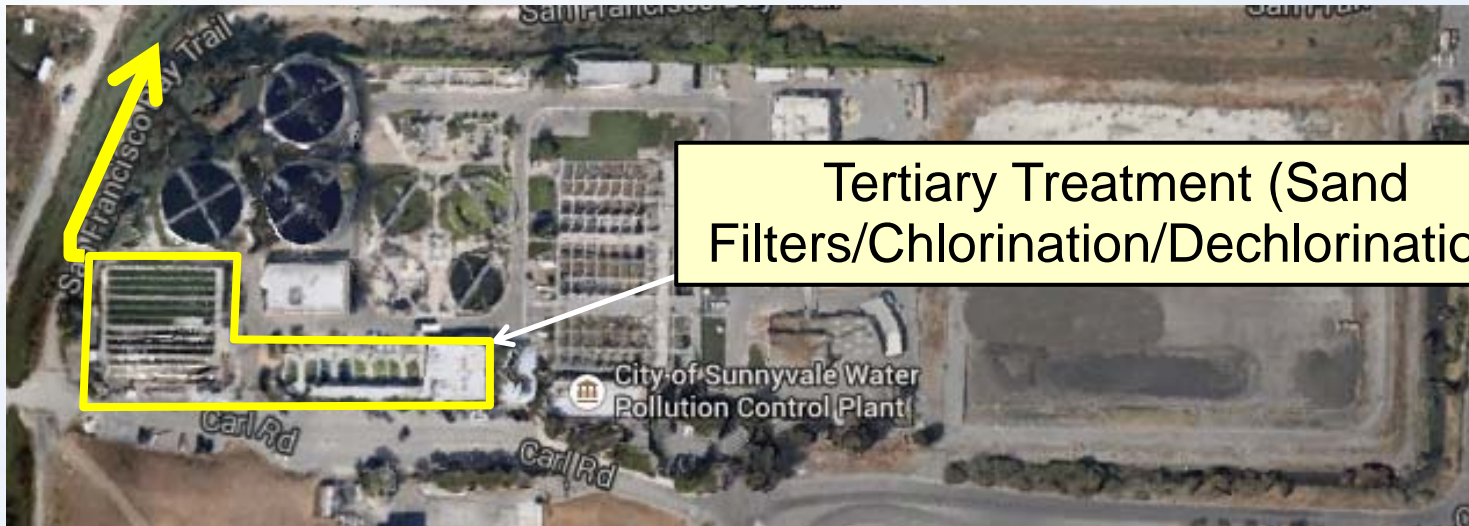
FGRs



Air Flotation



Tertiary Treatment



Tertiary Treatment (Sand Filters/Chlorination/Dechlorination)

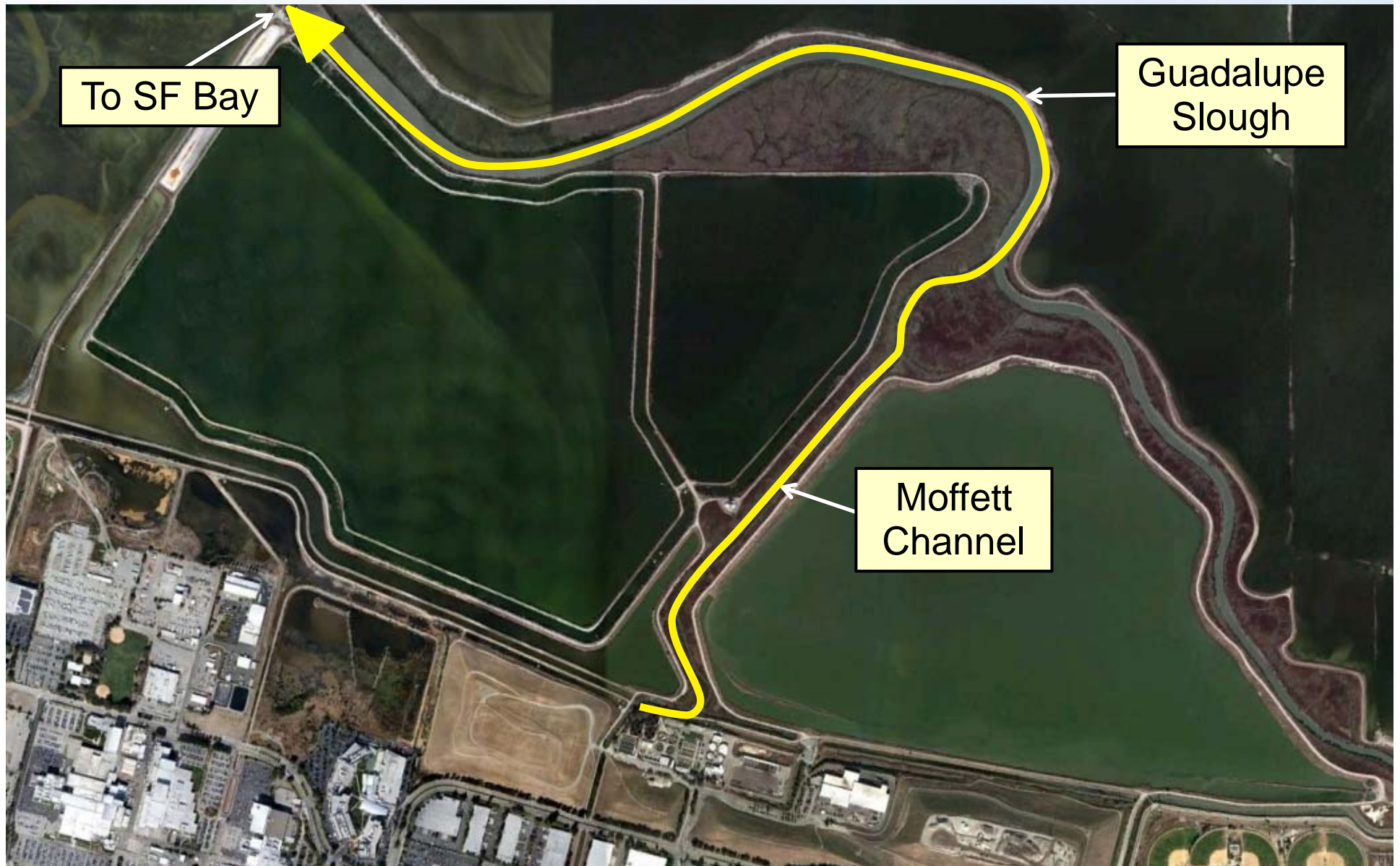
Sand Filters



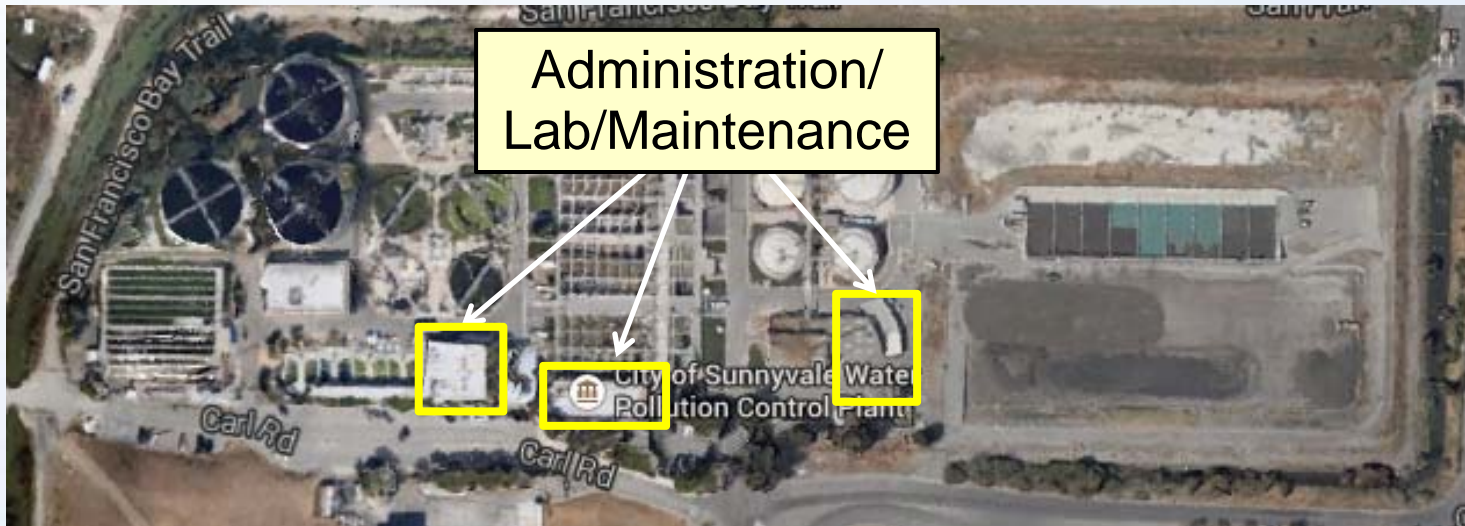
Chlorination



Overall Plant Site – Plant Effluent



Administration/Lab/Maintenance



Administration

Maintenance



Laboratory

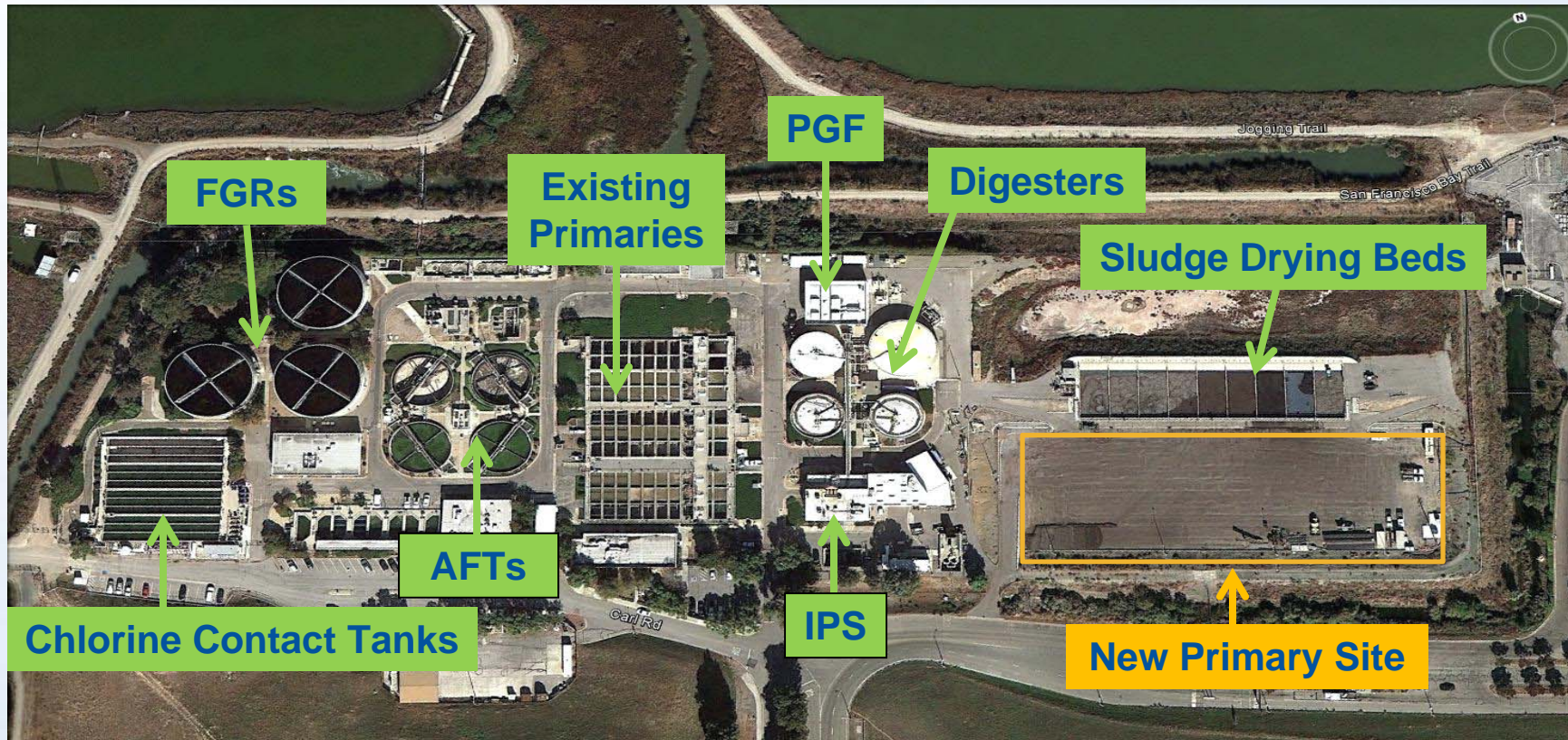
Planning Process

Addressing Plant Condition

- 2006 Condition Assessment
- 2008-10 Strategic Infrastructure Plan
- 2010-11 Peer Review
- 2012 Strategic Planning Workshop
- 2013-16 Master Plan



Master Planning



- Existing conditions documentation
- Site planning
- Basis of design development
- CEQA compliance
- Public Outreach

- Design standards
- Regulatory compliance
- Implementation plan
- Budget & Schedule

Additional coordination

- SCVWD

The background of the slide is a light blue, semi-transparent image of water splashing, creating a sense of movement and freshness. The water droplets and ripples are visible, particularly towards the bottom right corner.

Recycled Water Opportunities

Recycled Water Opportunities

- Feasibility Study for Recycled Water Completed in 2013
 - 3.6 mgd of non-potable demand over 20 years
 - Requires distribution system investment (\$100± million)
- Partnership with Santa Clara Valley Water District (SCVWD)
 - City provides treated effluent for further use by SCVWD
 - Provides space at the WPCP for advanced treatment facilities (RO/UV)
 - Collaborate on several feasibility studies (RO concentrate management, reduced discharge to Bay, etc.)

Potential Recycled Water Expansion



- Draft MOU with SCVWD for feasibility studies
- City has budgeted \$250k
- Potential location for 3 acre advanced WPF on landfill

The background of the slide is a light blue, semi-transparent image of water splashing, creating a sense of motion and freshness. The water droplets and ripples are visible, particularly towards the bottom right corner.

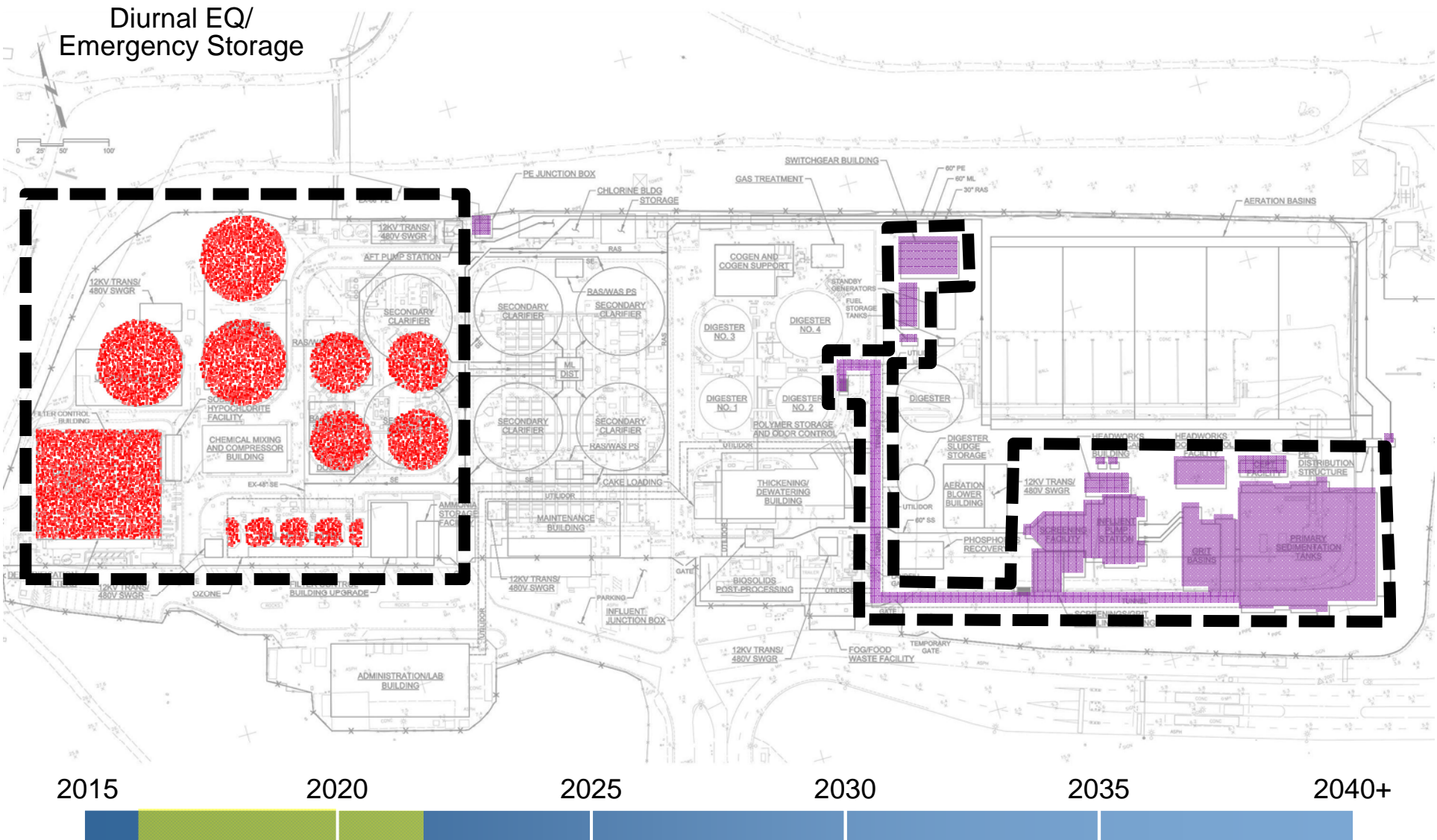
Phasing and Implementation

Implementation – Major Phases

- Phase 1 – Headworks/Existing WPCP Rehab
- Phase 2 – Initial CAS/Admin and Maintenance
- Phase 3 – Support Facilities Upgrades
- Phase 4 – Second CAS Expansion
- Phase 5 – Tertiary Treatment Upgrades

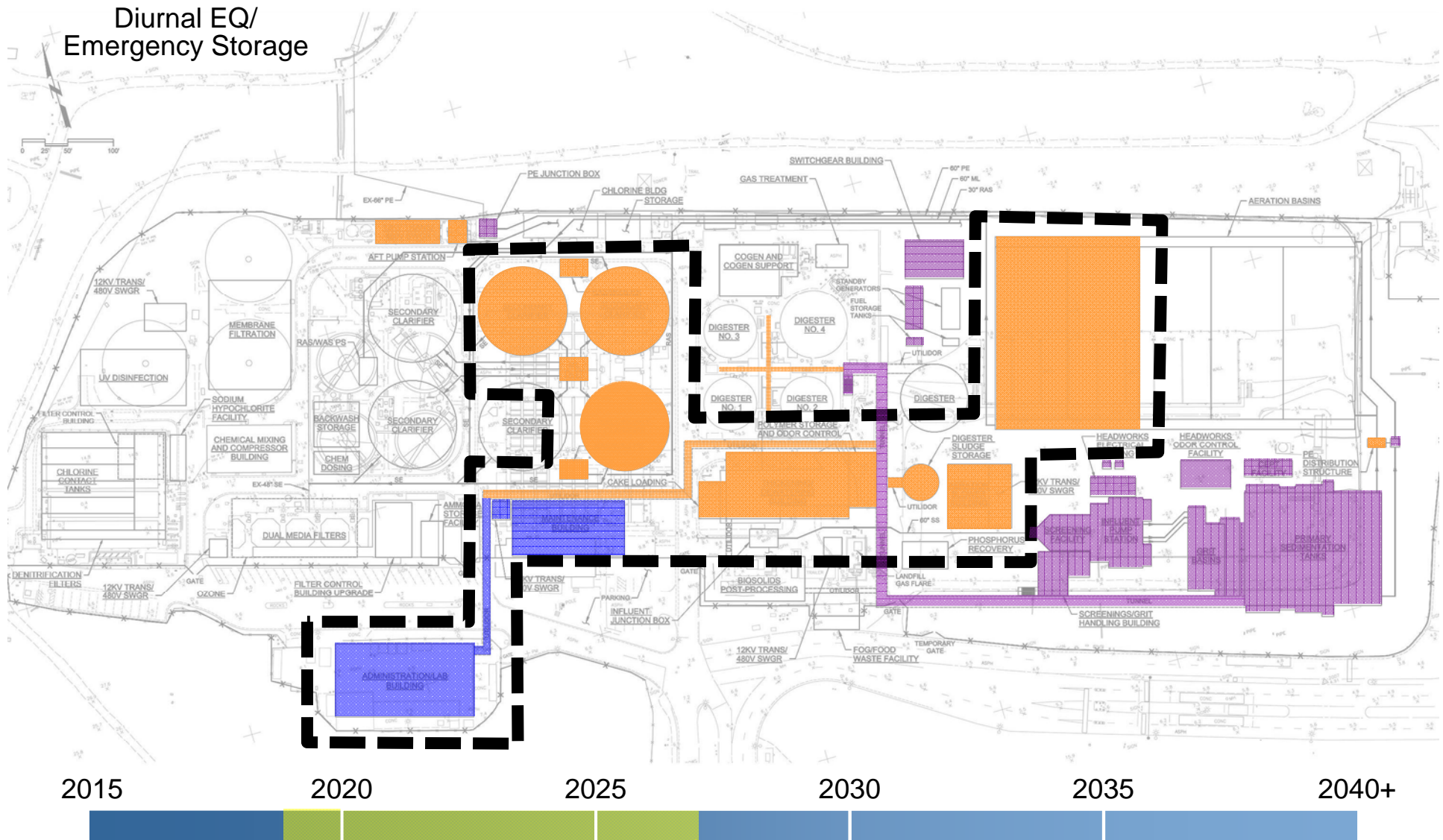
Implementation – Phase 1

Headworks/Existing WPCP Rehab

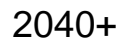


Implementation – Phase 2

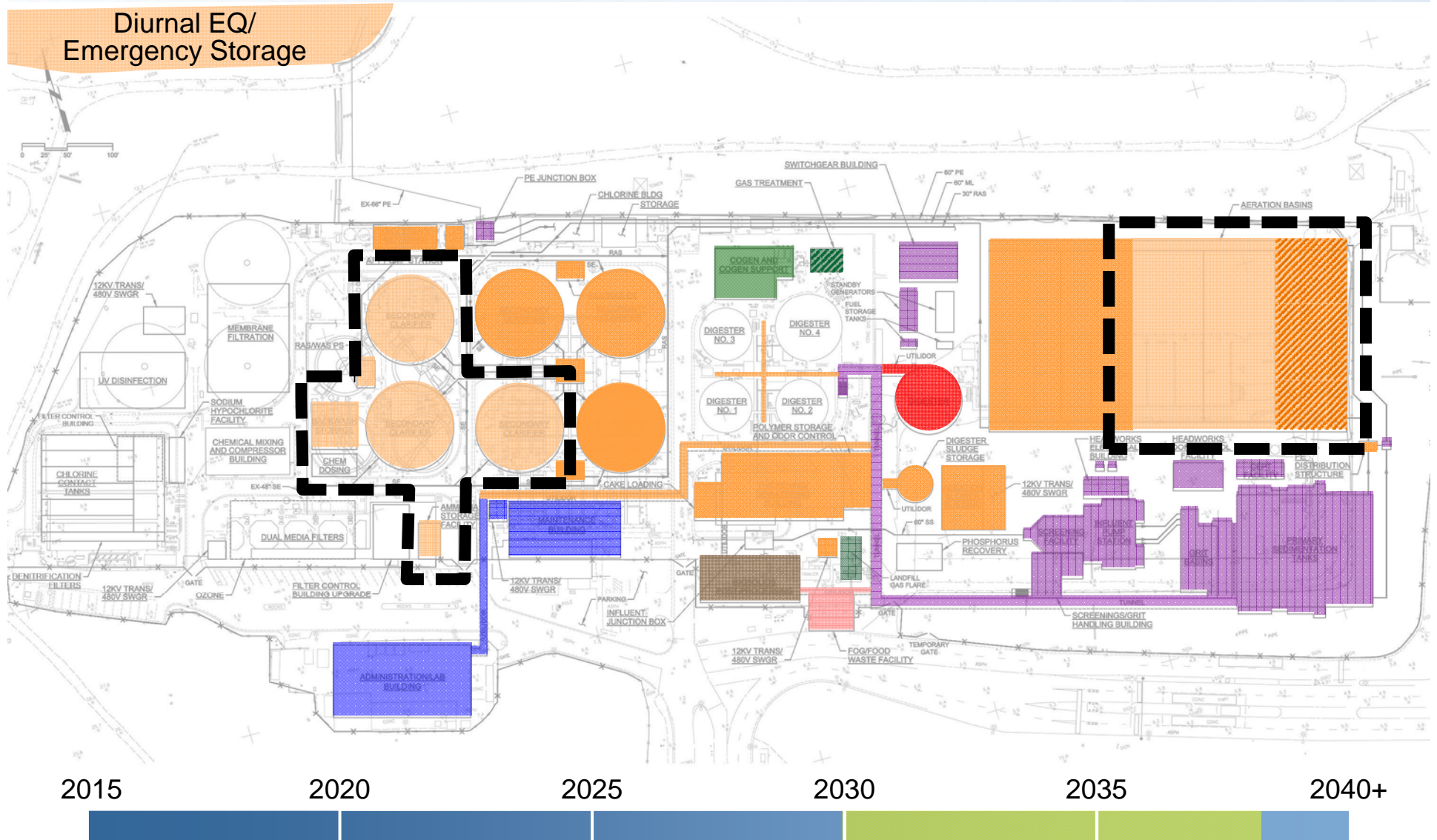
Initial CAS/Admin and Maintenance



Diurnal EQ/
Emergency Storage

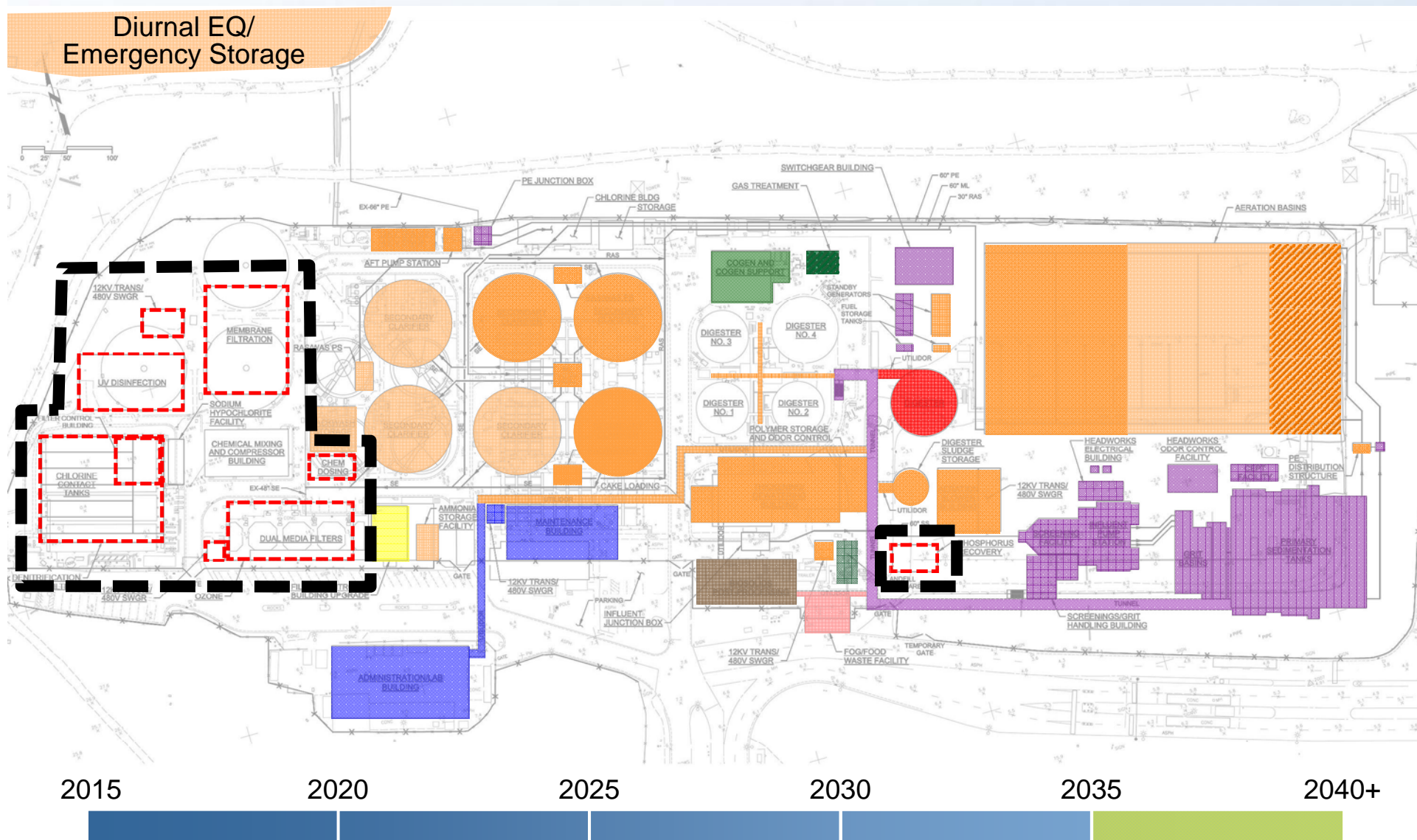



Implementation – Phase 4 Second CAS Expansion



Implementation – Phase 5

Tertiary Treatment Upgrades





CEQA and Public Outreach

CEQA Effort for Master Plan Programmatic EIR

- Used to address long-term project objectives
- Structured to reduce future project specific CEQA efforts
- PEIR approved August 2016
- Project specific CEQA still required



Sunnyvale Cleanwater Program – Ongoing Public Outreach Efforts

- Informational Open House – **May 20th, 2015**
- Two Notice of Preparation (NOP) Scoping Meetings – **June 24th, 2015**
- Article in City's Quarterly Report – **July 2015 / Oct. 2016**
- www.sunnyvalecleanwater.com – **June 23rd, 2015**
- Groundbreaking Ceremony – **July 11th, 2016**



Costs and Financial Impacts

Master Plan Planning Horizon Split Flow Activated Sludge (Dollars in Millions)

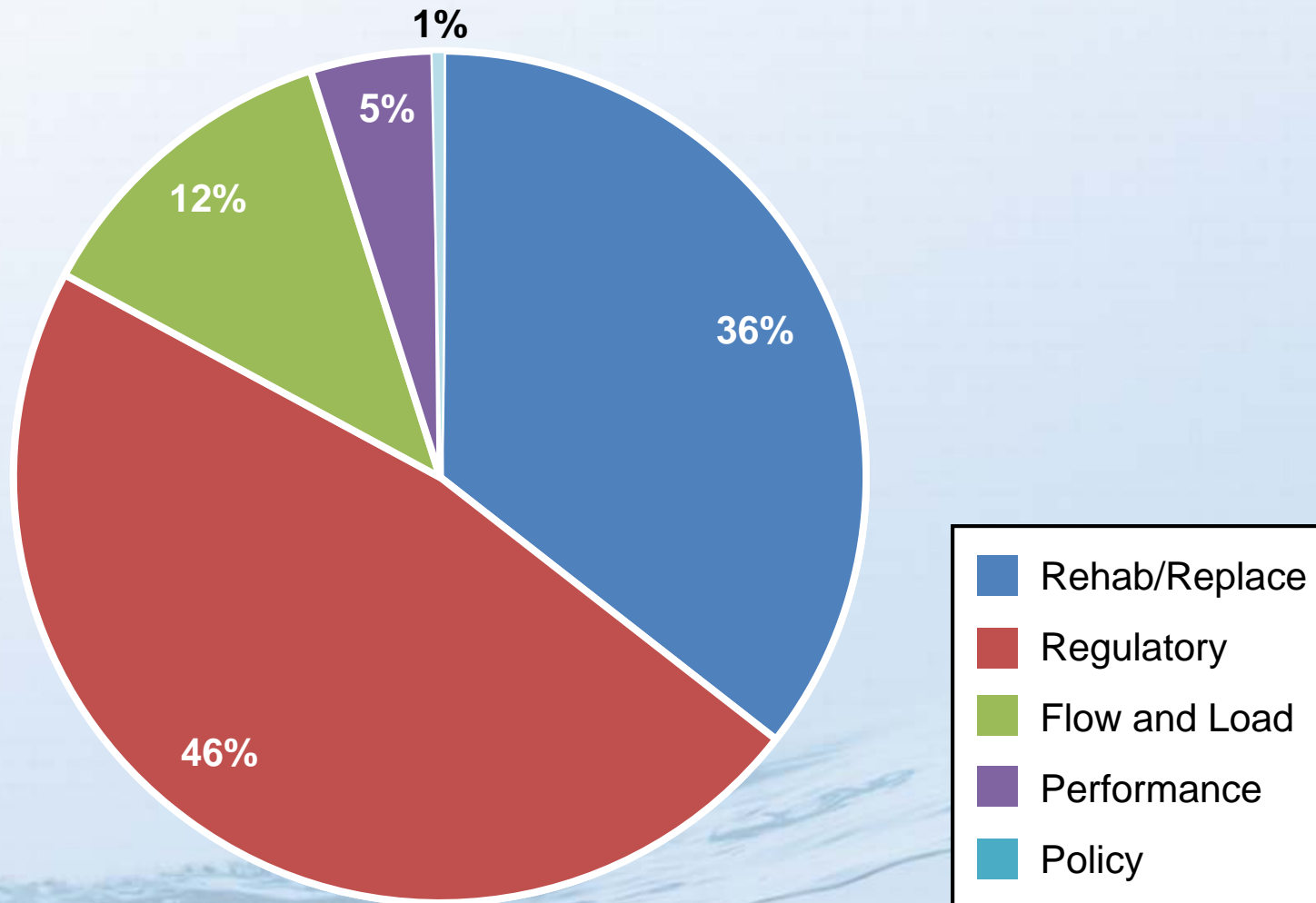
Major Elements	Phases 1 - 3	Phase 4	Phase 5
	Through 2030	2027 - 38	>2033
Primary Treatment	\$138±	-	-
Secondary Treatment	\$165±	\$273±	5±
Tertiary Treatment	\$16±	\$15±	\$195±
Solids Handling/Power Generation	\$94±	\$66±	-
Support Facilities	\$43±	-	-
Total	\$456±	\$354±	\$200±

Financial Planning Estimate Split Flow Activated Sludge (Dollars in Millions)

Major Elements	Phases 1 - 3	Phase 4 – 5
	Through 2030	2027 – 40+
Primary Treatment	\$138±	-
Secondary Treatment	\$165±	\$199±
Tertiary Treatment	\$16±	\$34±
Solids Handling/Power Generation	\$94±	\$17±
Support Facilities	\$43±	-
Total	\$456±	\$250±

Sunnyvale Clean Water CIP Drivers

Percent of Total CIP



Project Financing Approach

- Bonds vs. State Revolving Funds (SRF)
- Potential Short Term Financing
- Priority list established for SRF funding
 - Looking for “shovel ready” projects
- Program looking to utilize SRF funding
 - 1.7% for SRF (1.0% for recycled water projects)
 - 3.0% for bonds
- Primary Project - potential for at least \$20± million in savings with SRF
 - \$4M principal forgiveness for green projects

The background of the slide is a light blue, semi-transparent image of water splashing, creating a sense of freshness and movement. The water droplets and ripples are visible, particularly towards the bottom right corner.

Status of Sunnyvale Clean Water Program

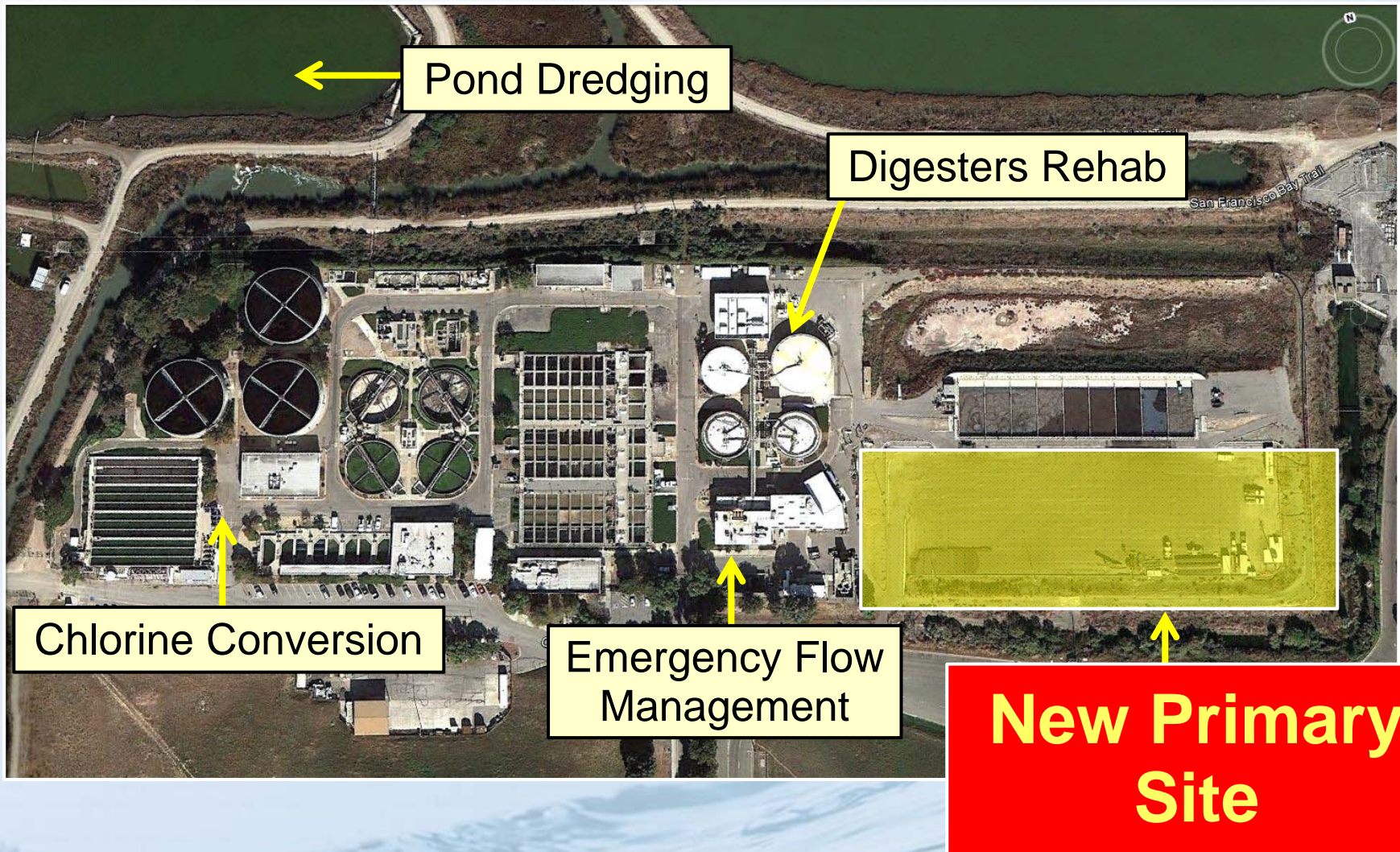
Prior Council Communications

- Award Master Plan and Primary Treatment Facility Design Contract **(5/7/13)**
- Award Program Management Contract **(3/25/14)**
- Council Study Session **(6/24/14)**
- Award Construction Management Contract **(5/5/15)**
- Adopt MND for the Primary Treatment Facility **(5/5/15)**
- Gap Project Awards **(2011-2016)**
- Council Study Session **(8/25/15)**
- Award Construction Contract for Primary Treatment Facility **(5/7/16)**
- Certify the PEIR and Approve the Master Plan **(8/23/16)**

Current Program Status

- Gap Projects (in progress)
- Master Planning & PEIR (complete)
- Primary Treatment Facilities (in construction)
- Program Management (ongoing)
- Construction Management (ongoing)
- Public Outreach (ongoing)
- Design RFP's (ongoing)

Current Projects



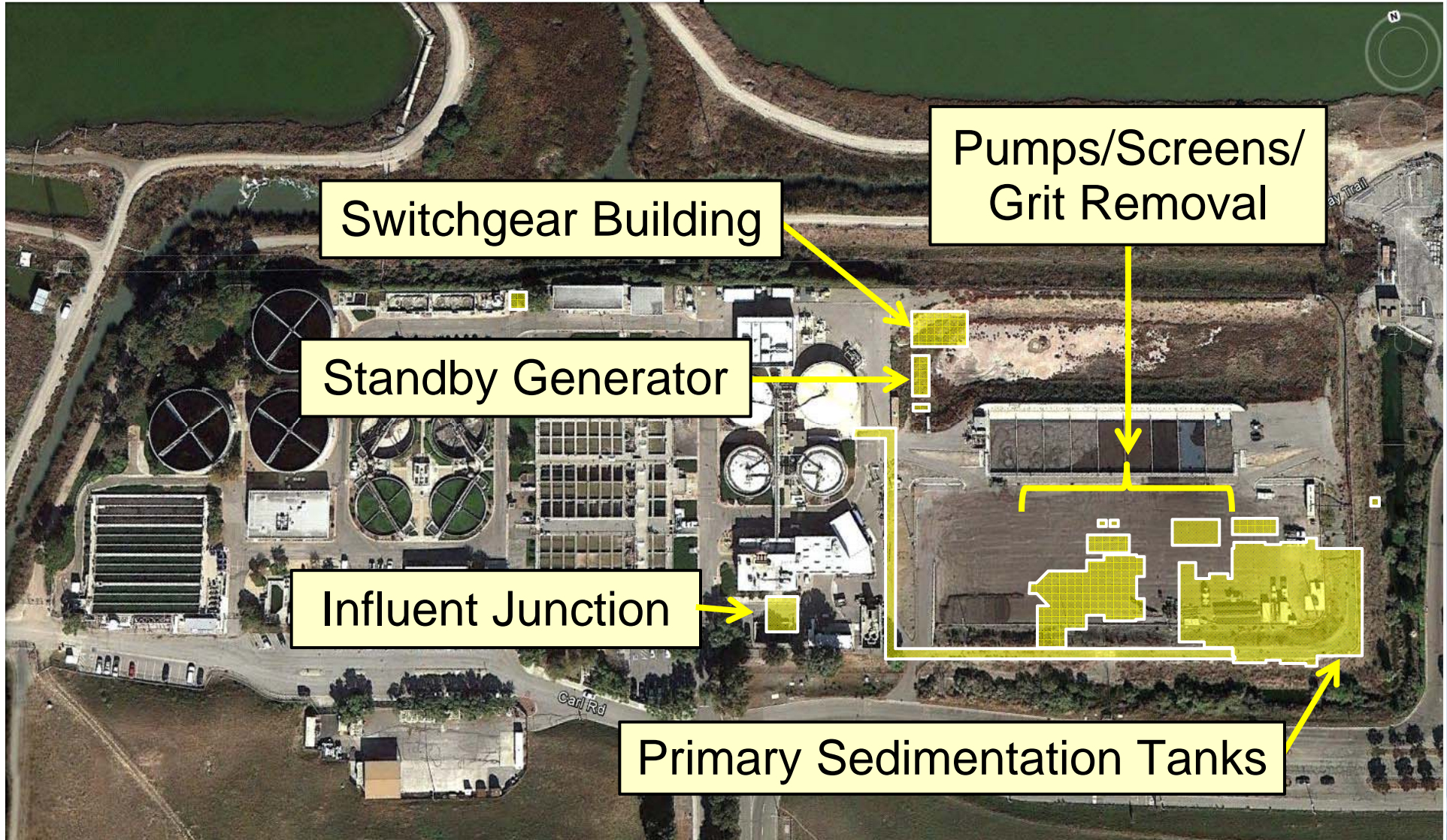
Primary Project – Package 1

- Construction Complete – Mid 2017



Primary Project – Package 2

- Open Bids – March 1, 2017
- Construction/Startup – Late 2020

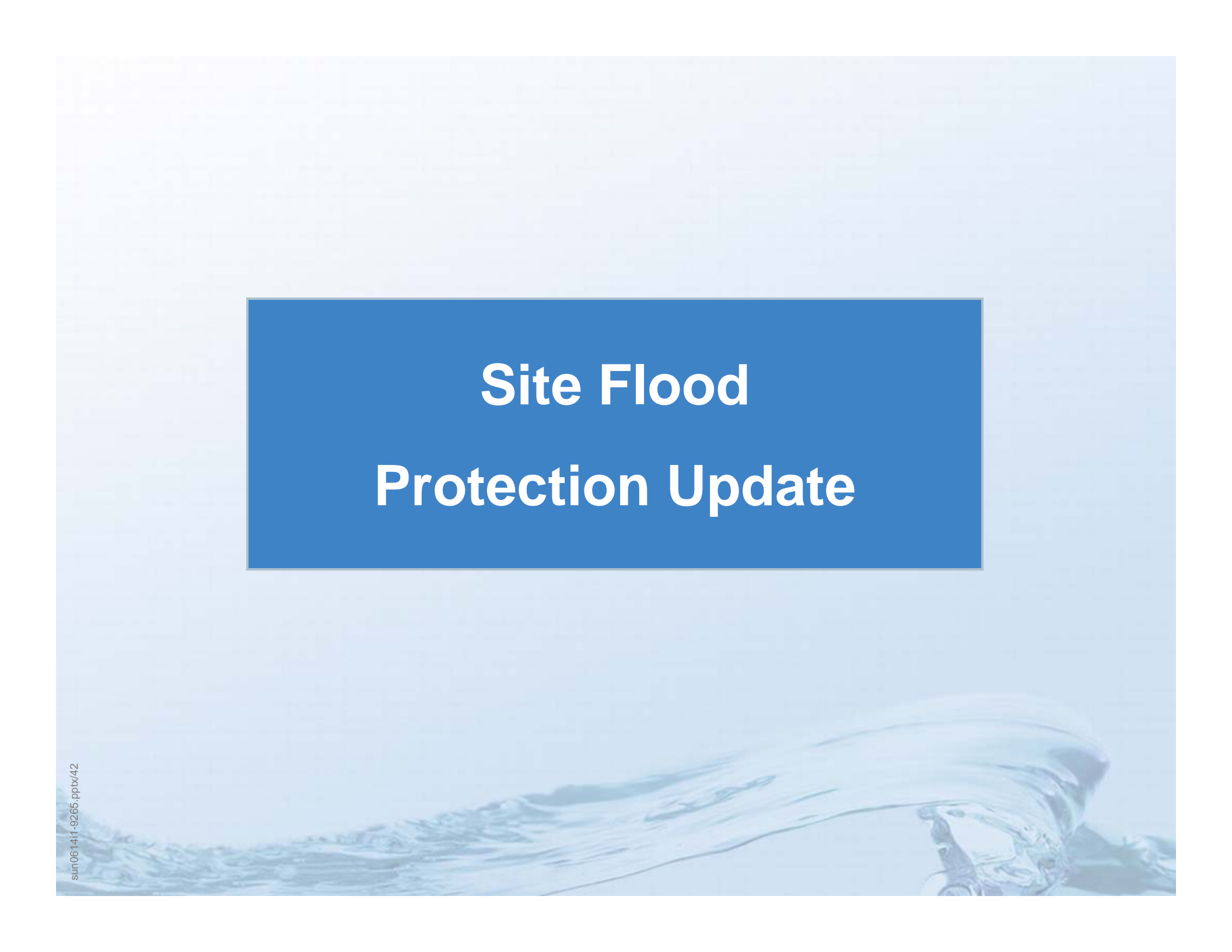


Next Steps – Council Actions

- Early 2017 – Primary Package #2 construction award
- Early-Mid 2017 – Complete RFP process and award design contracts for the Sunnyvale Clean Water Program:
 - Caribbean Drive Parking and Trail Access Enhancements
 - PMC Renewal
 - Condition Assessment
 - Secondary Treatment and Dewatering
 - Administration and Laboratory Building

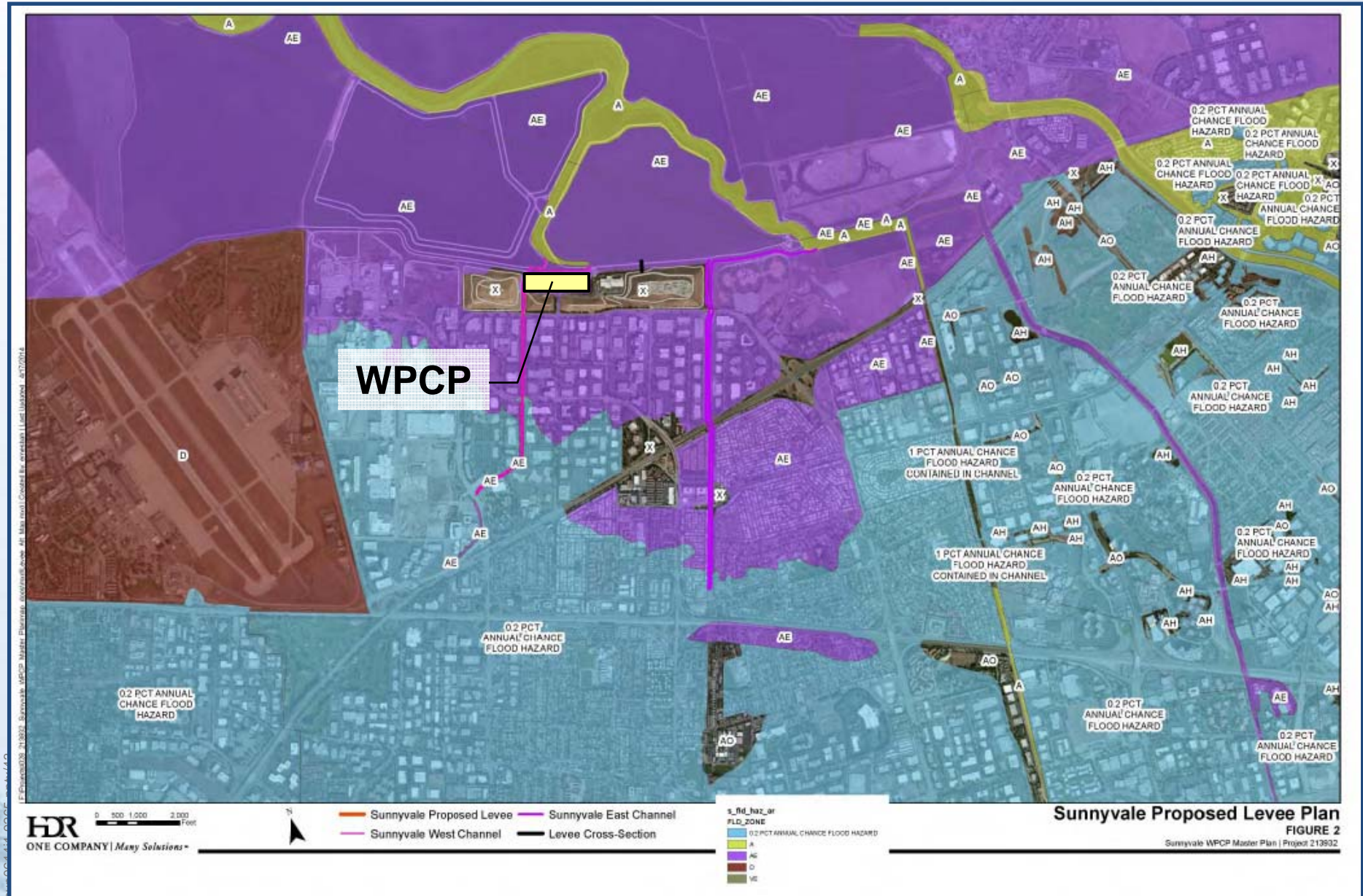


Questions?

The background of the slide is a light blue, semi-transparent image of water splashing, creating a sense of movement and fluidity. The water droplets and ripples are visible, particularly in the lower half of the frame.

Site Flood Protection Update

FEMA Tidal Flooding Map (Elevation 11.0)



Floodwall Around WPCP for Tidal Flooding

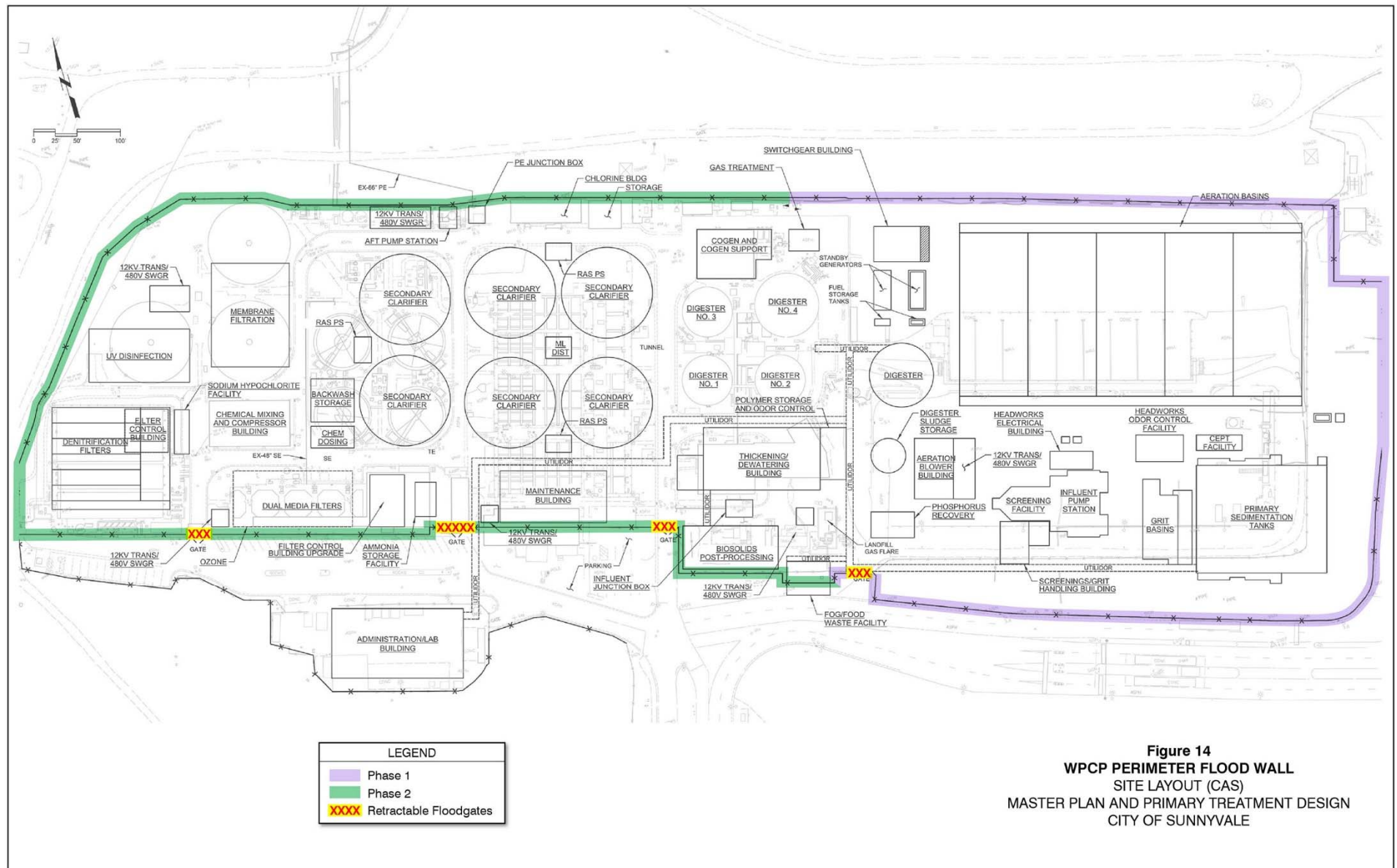


Figure 14
WPCP PERIMETER FLOOD WALL
 SITE LAYOUT (CAS)
 MASTER PLAN AND PRIMARY TREATMENT DESIGN
 CITY OF SUNNYVALE

SCVWD Shoreline Study – Preliminary Alignment for Protection Against Sea Level Rise



San Francisco Bay
Shoreline Study EIAs 1-10

0 0.5 1 2 3 4 Miles

Master Plan

Studies and Workshops Outcomes

- SIP and Peer Review accepted
- Proceed with:
 - Gap projects
 - Master planning
 - New primary treatment
 - Program management



Major Planning Elements

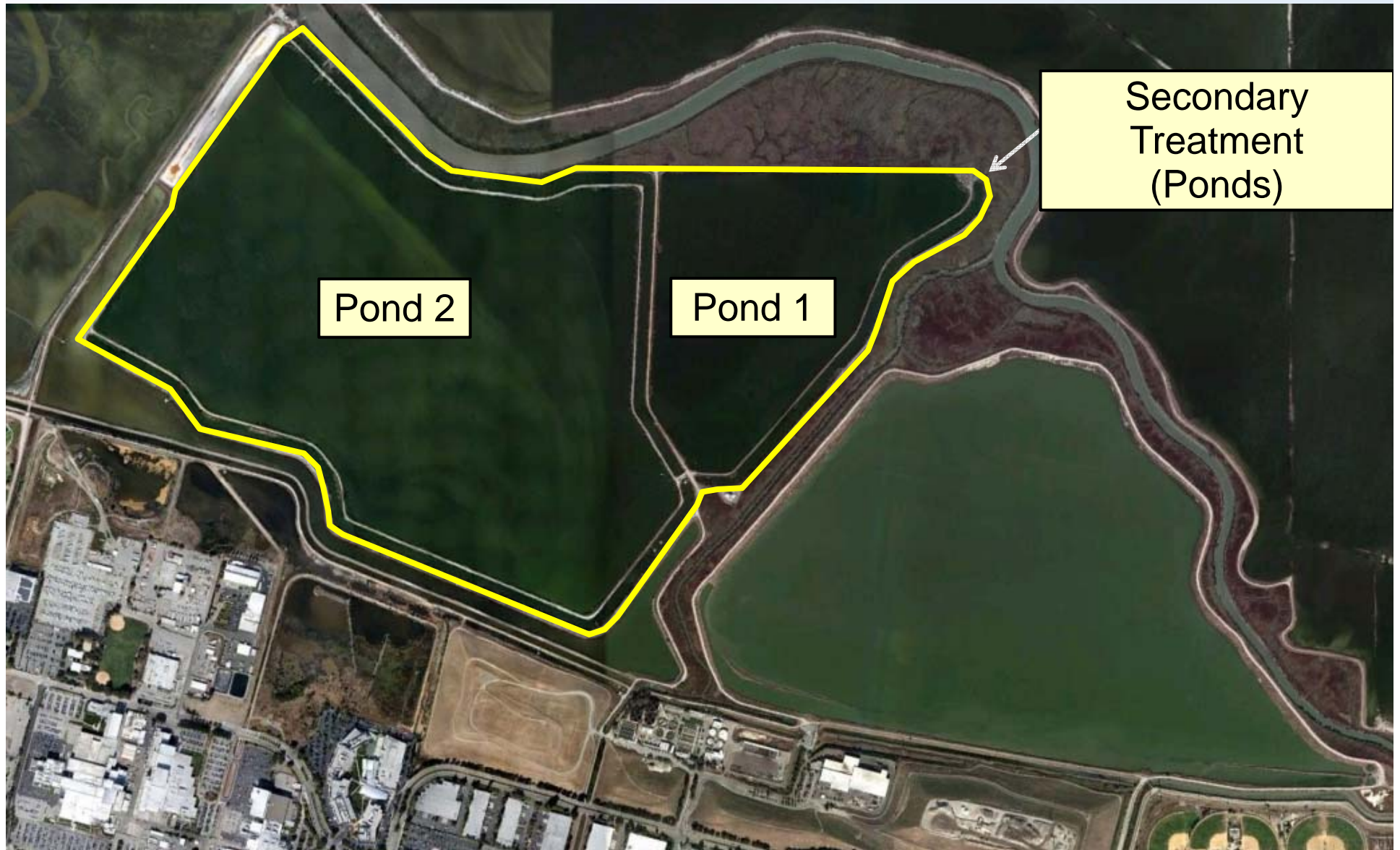
- Develop Capital Improvement Project (CIP) Plan
 - Major Plant Process/Support Facilities
 - Recycle Water
- Preparation of Environmental Review (CEQA)
- Public Outreach
- Develop Financial Plan & Master Schedule to Support Master Plan

Master Plan Recommendations

- Liquid treatment alternatives
- Solids treatment alternatives
- Energy optimization
- Site layout considerations
- Support facilities (new admin/maint. buildings)
- Plant automation

Existing Process Facilities

Main Plant Site (WPCP)



Administration/Lab/Maintenance

Administration



Administration/Lab/Maintenance

Maintenance



Administration/Lab/Maintenance



Laboratory



Energy Production



Energy
Production
(Digestion/
Cogeneration)

Digesters



Engine Generator

