

IT Security Update

Planning Committee

August 13, 2019

IT Security Update



- Cyber Crime Trends
- Cyber Security KPIs
- IT Security Program Review
- Security Awareness
- Next Steps

Cyber Crime Trends

- Email remains the primary attack vector
- Ransomware attacks continue



Cyber Security Readiness KPIs



Cyber Security KPIs were new to the 2018 Strategic Plan
- For FY19 ISD met or exceeded all Cyber Security KPIs

Long-Term Financial Stability Key Performance Indicators

Key Performance Indicator	FY19 Target	FY19 Performance
Integrity, Accountability and Transparency		
Cyber Security Operational Readiness		
Planned patch cycles met	> 90%	100%
Security controls reviews	Annually	Completed
Database security reviews	Annually	Completed
Business recovery exercises	2 per year	2 exercises
Security awareness events	4 per year	4 events
IT security assessment biennially	Complete independent assessment audit	Completed

Email Security Awareness



- New email security awareness product implemented in FY19
- New employees required to complete security awareness training
- Phishing tests sent 6-8 times/year
- Users that fall for the phish are enrolled in additional security awareness training

IT Security Program Review



- Main Takeaways of 3rd party review
 - There were no big surprises
 - EBMUD has a good understanding of the challenges and the cyber threats that they face
 - EBMUD understands it needs to transition to a more proactive security approach
 - Initial steps to adopt Center for Internet Security's Critical Security Controls are a good start
 - There are some areas EBMUD should work on to mature process and technology

Next Steps



- Purchase and implement endpoint malware protection product
- Complete firewall refresh evaluation and implementation project
- Support District's Internal Auditor's vulnerability assessment of business systems

2019 Dam Safety Program Annual Report

Planning Committee

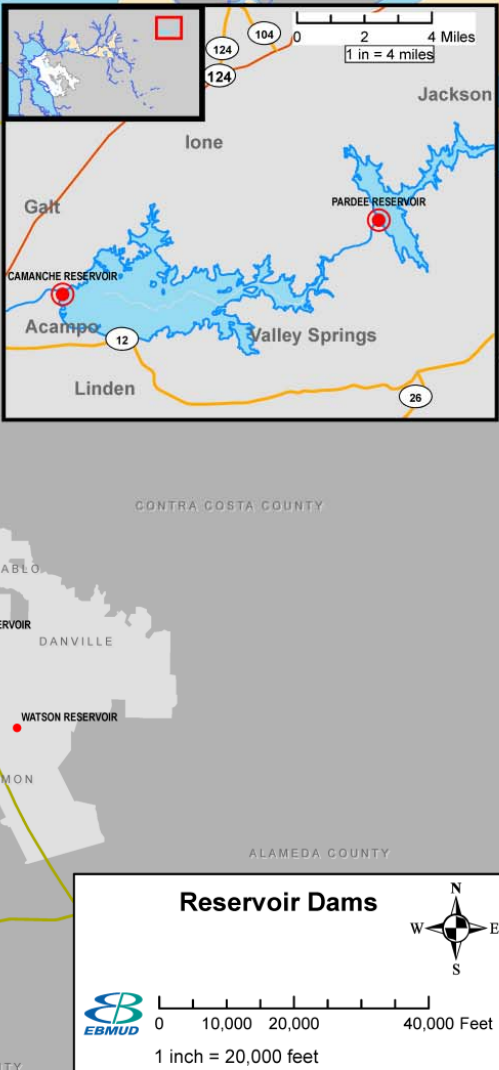
August 13, 2019

Presentation Outline

- District Dams
- Legislation & License Compliance:
 - Inundation Map Updates
 - Emergency Exercises
- Project Updates:
 - Dam Safety Training
 - Inspection & Surveillance
 - Studies & Improvements
- Summary & Next Steps



District Dams



Legislation & License Compliance

Senate Bill 92 (July 2017) requires Emergency Action Plans and updated inundation maps for DSOD-regulated dams

DSOD-Required Emergency Action Plans

- Last EAP update in December 2017
- Next EAP update in December 2019

DSOD-Required Inundation Maps

- DWR adopted permanent map regulations in November 2018
- District plans terminal reservoir map submittal in October 2019 with open cut and Mokelumne dams to follow

Emergency Action Plan (EAP)

for

San Pablo Dam
Contra Costa County, California

With assistance from:

Department of Water Resources
Division of Safety of Dams (DSOD)

Governor's Office of
Emergency Services



Dam Owner: East Bay Municipal Utility District

DSOD Northern Region

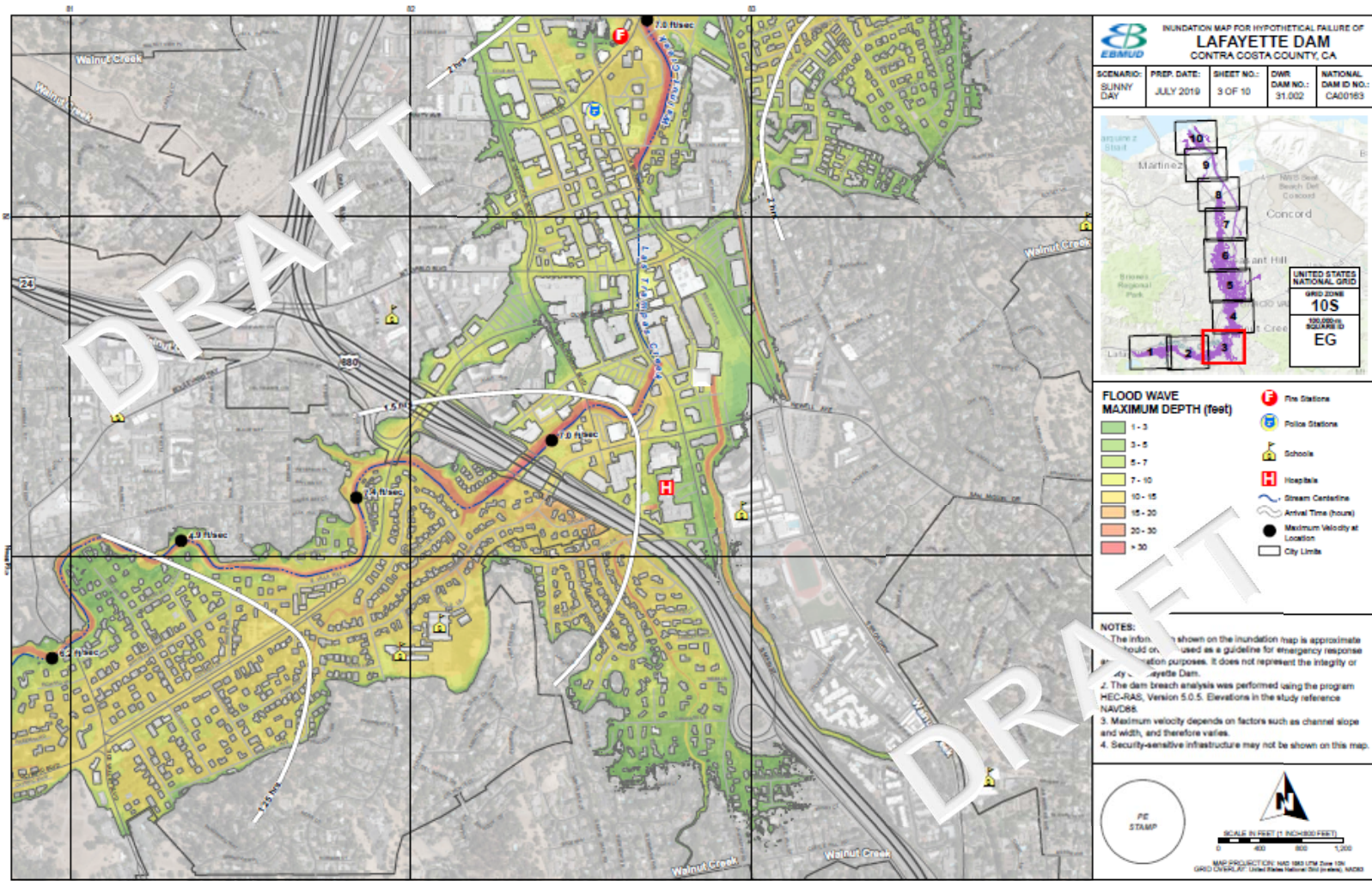
DSOD Dam No. 31.006

National Inventory of Dams (NID) No. CA00166

Federal Energy Regulatory Commission (FERC) No. N/A

Legislation & License Compliance

Sample Inundation Map

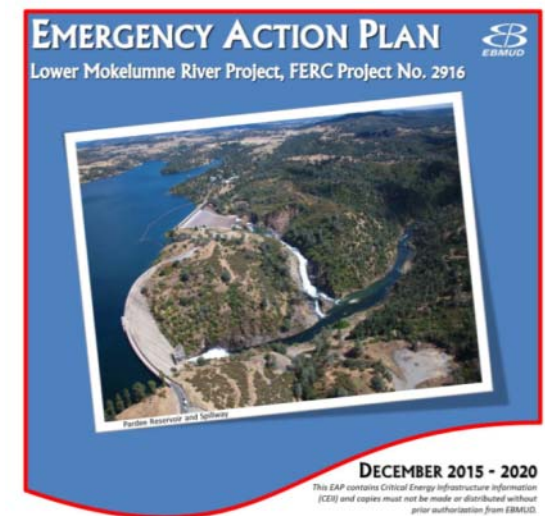


Legislation & License Compliance

Emergency Exercises



- 5-year Tabletop/Functional Exercise in September 2018 at Pardee Center
 - Co-hosted with Jackson Valley Irrigation District
 - 13 additional agencies, including DWR, FERC, Woodbridge, PG&E and local fire and police departments
- Updated FERC EAP in August 2018 and February 2019




Dam Safety Training



- Expanding existing dam safety training to meet new FERC requirements
- Three tracks: (1) Awareness Training, (2) Training for Inspectors & Reviewers, (3) Training for Management
- Classroom-based training every 2 years, with web training available

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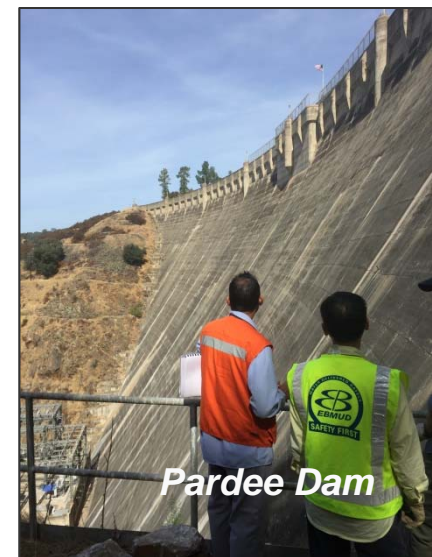


U.S. Bureau of Reclamation's
Minidoka Dam, Snake River, Idaho

Inspection and Surveillance



- Monthly inspections of all dams.
- Annual inspections with regulators
 - State inspections (FY 2019):
 - Pardee/Camanche – December 2018
 - Terminal Reservoirs – March 2019
 - Open Cut Reservoirs – April 2019
 - Federal inspections of Pardee/Camanche:
 - Not scheduled in reporting period due to FERC staffing limitations
 - Next inspection – September 2019
- Surveillance report submitted to FERC in May 2019
- Based on the results of the inspections and with concurrence of the regulatory agencies, all District dams are deemed safe for continued operations



Seismic Studies and Upgrades

Chabot Dam & USL Outlet Tower



Chabot Dam Seismic Upgrade:

Cement Deep Soil Mixing, buttress, drainage trench, tower upgrades

Partially funded by \$5M DWR Grant

Construction completed October 2017



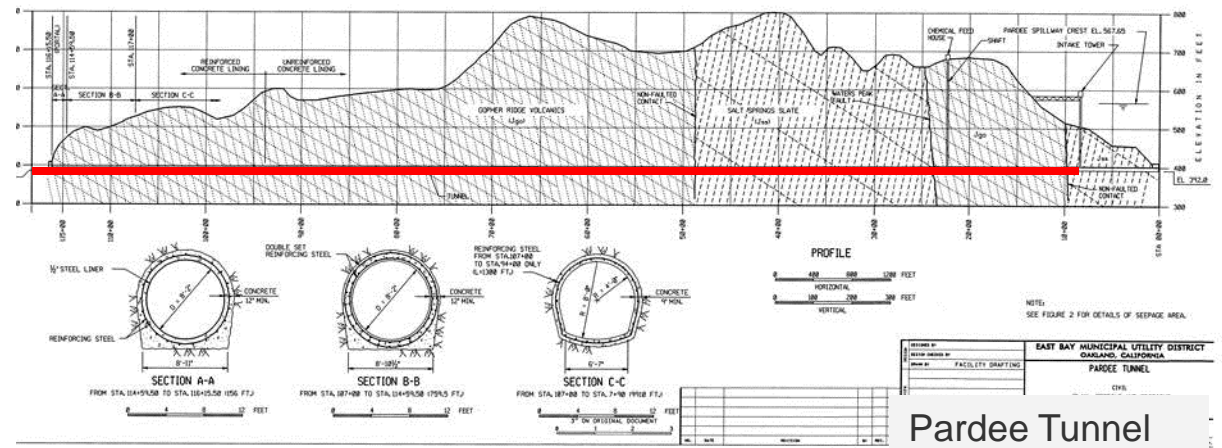
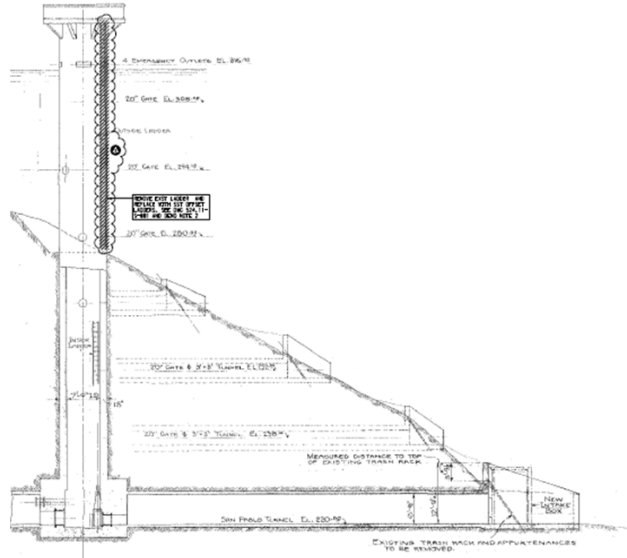
USL Tower

Completed in September 2018

Tower braces provide seismic stability

Mechanical, electrical, and controls improvements to improve reliability

Seismic Studies and Upgrades San Pablo Tower and Tunnel Inspections



San Pablo Tower

Installed isolation valve to prevent uncontrolled release through the San Pablo Tunnel

Added tunnel access shaft improvements with new ladder at the tower

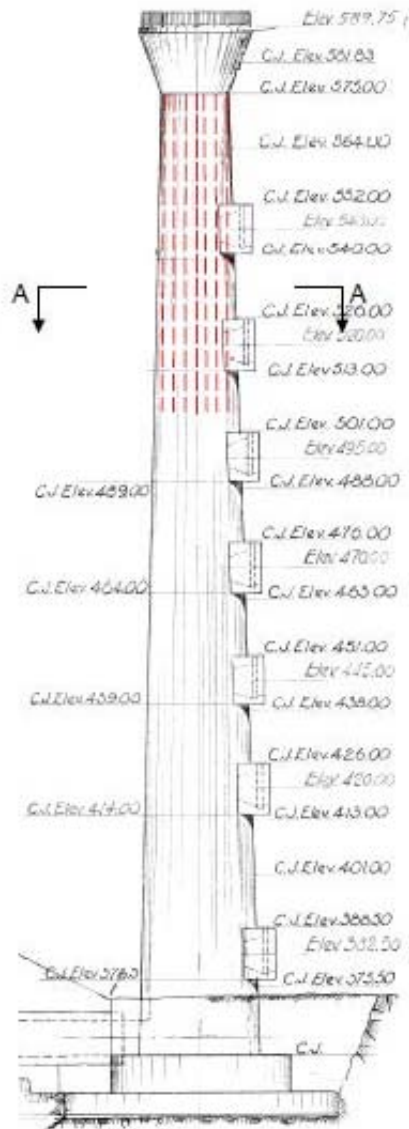
Tunnel Inspections

Pardee Tunnel final inspection report in December 2018

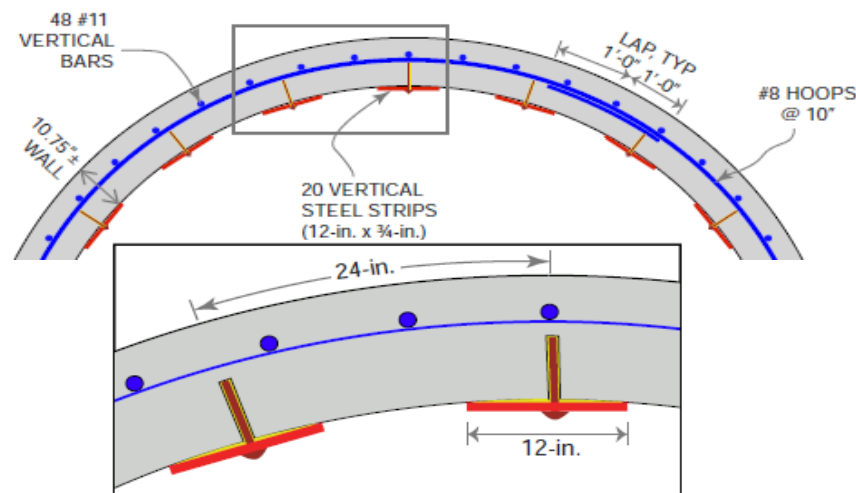
RFP for San Pablo and USL Tunnels for inspection, condition assessment, and recommendations for repair

Seismic Studies and Upgrades

Briones Tower

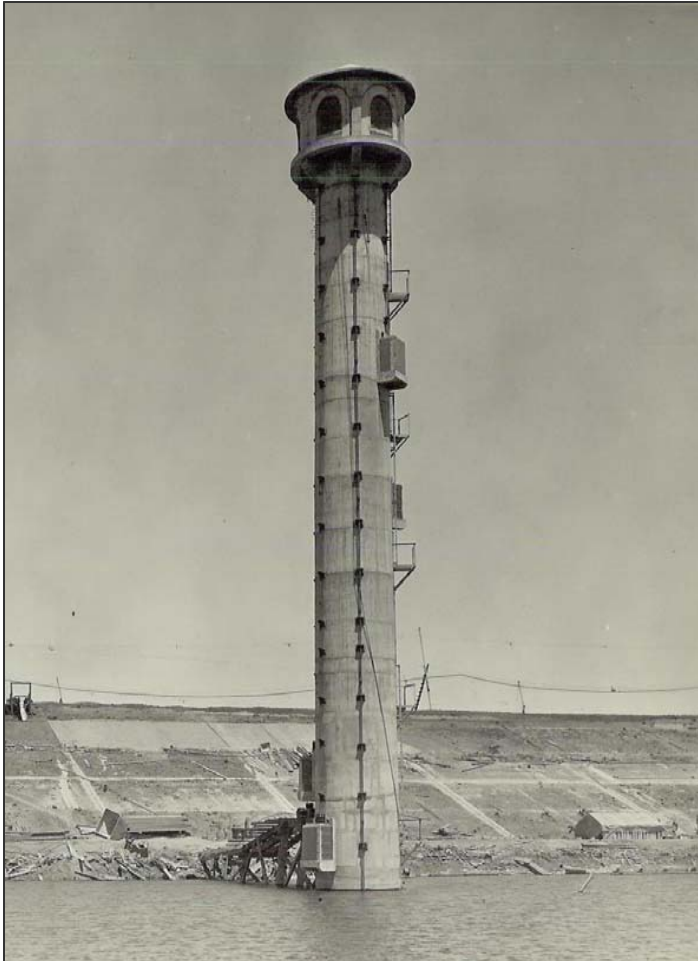


- Reinforcement required at top of tower. Design concept submitted to DSOD for review
- CEQA Completed
- Streambed alteration permit approved by CDFW. US Army Corps of Engineers and Regional Water Quality Permits Pending



Seismic Studies and Upgrades

Lafayette Tower

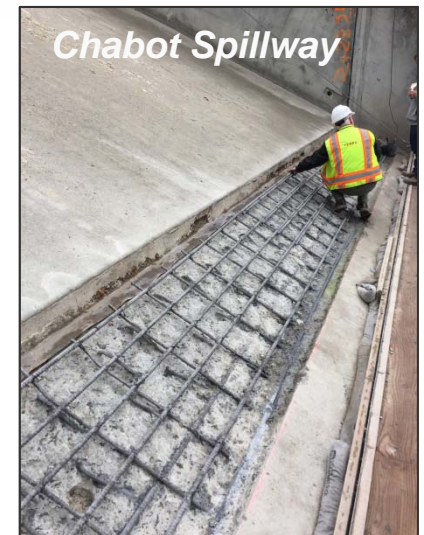


- Performed geotechnical investigation, concrete testing, historic and environmental surveys
- Shortening the tower most effectively addresses seismic vulnerabilities
- CEQA analysis and permitting beginning, along with public outreach

Spillway Condition Assessments



- Comprehensive evaluation of terminal and Mokelumne spillways
- March 2019 – Submitted Terminal Reservoir Spillway Condition Assessment Reports to the State Division of Safety of Dams (DSOD)
- December 2019 – Planned submittal of Camanche report

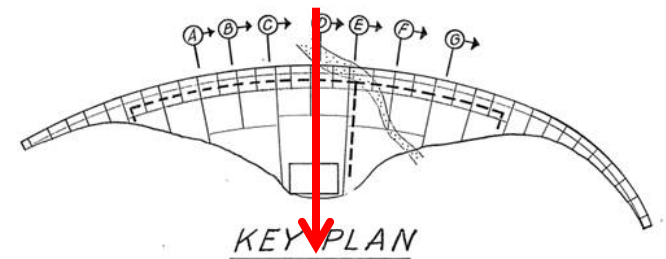
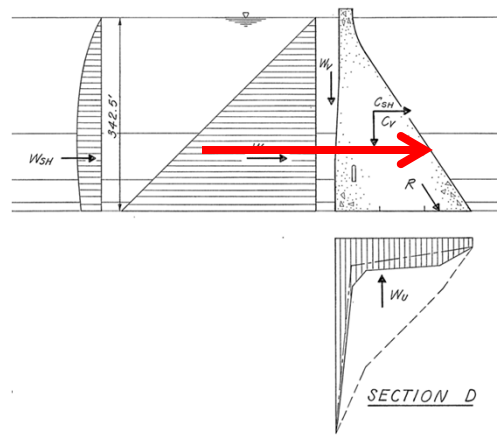


Dam Stability Studies

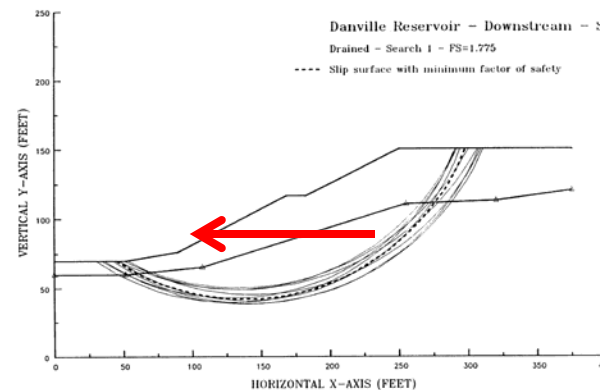


Planned Dam Stability Re-evaluation Studies

Pardee Dam Sliding Study – 2019 to 2022



Danville Stability Study – 2020 to 2021



Addressing FERC Part 12D Issues



FERC Part 12D Safety Inspections and Evaluation at Camanche and Pardee Dams

- Independent Consultant proposed 48 recommendations
- District submitted plan and schedule in response to Consultant recommendations in May 2018, FERC responded in July 2019
- District began Foothills Seismic Study, Pardee Dam Sliding Study, and Camanche Relief Well Cleaning in 2019



EIGHTH FERC PART 12D
INDEPENDENT CONSULTANT SAFETY INSPECTION
CAMANCHE DAM AND HYDROELECTRIC FACILITY
FERC PROJECT NO. 2916-CA
STATE DAM NO. 31-016 | NATDAM NO. CA00173
PROJECT NO. 17-5810
REVISION 0
MARCH 8, 2018

SUBMITTED TO:

EAST BAY MUNICIPAL UTILITY DISTRICT
P.O. BOX 24055, MS#901
OAKLAND, CA 94623

Corporate Headquarters
530 Penn Center Boulevard, Pittsburgh, PA 15225 USA
Telephone: 412.356.0700 | Fax: 412.356.0749



Summary and Next Steps



- Dams safe for continued operations
- Plan for FY20:
 - Continue with Lafayette & Briones towers
 - Update inundation maps and EAP
 - Update dam safety training
 - Implement plan for Part 12D recommendations
- Next report to the Board – FY21

Main Wastewater Treatment Plant Odor Control Program Update

Planning Committee

August 13, 2019

Agenda



1

FY19 Odor Complaints

2

FY19 Odor Management Activities

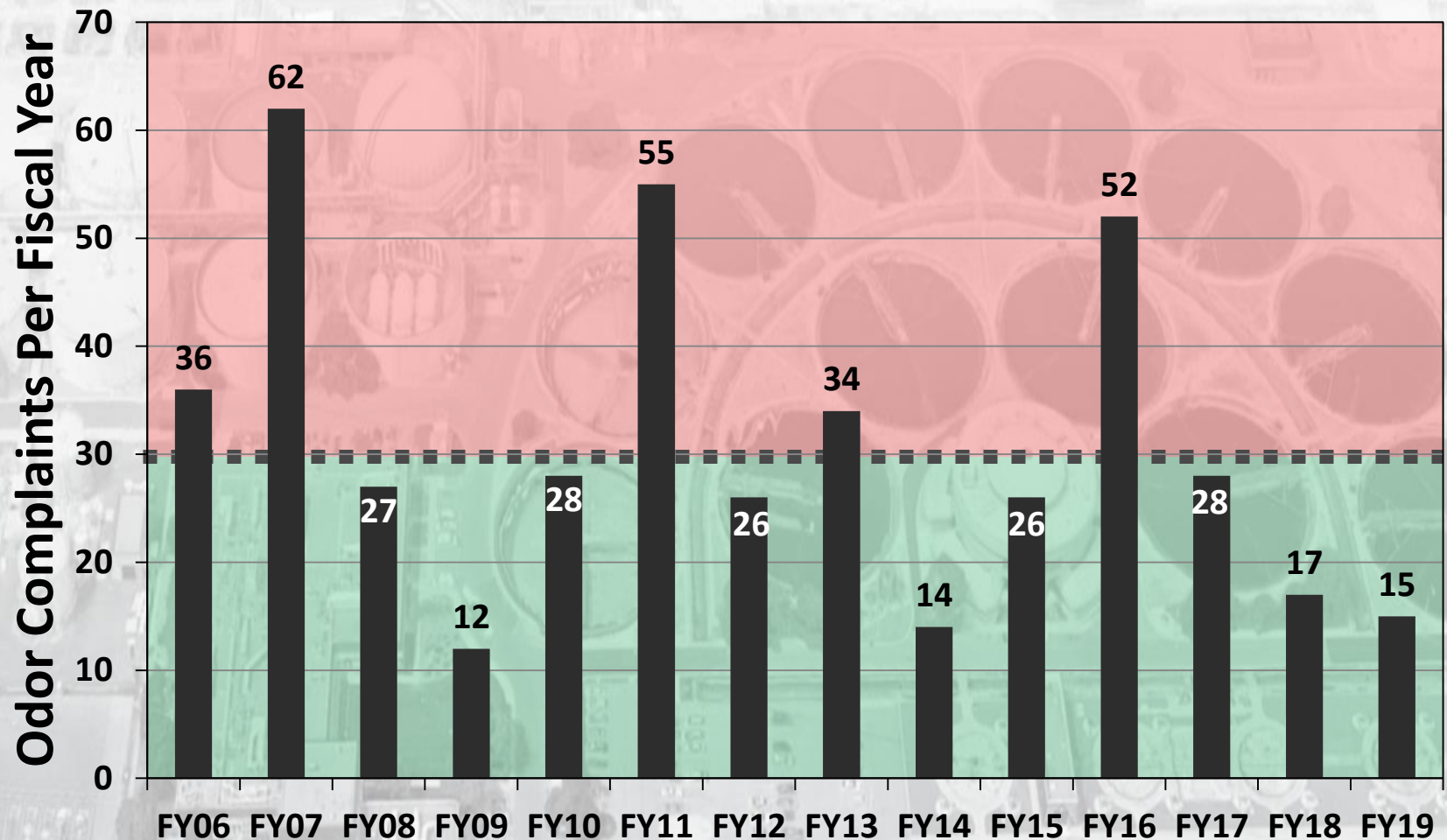
3

Summary and Next Steps

Achieved KPI in FY19

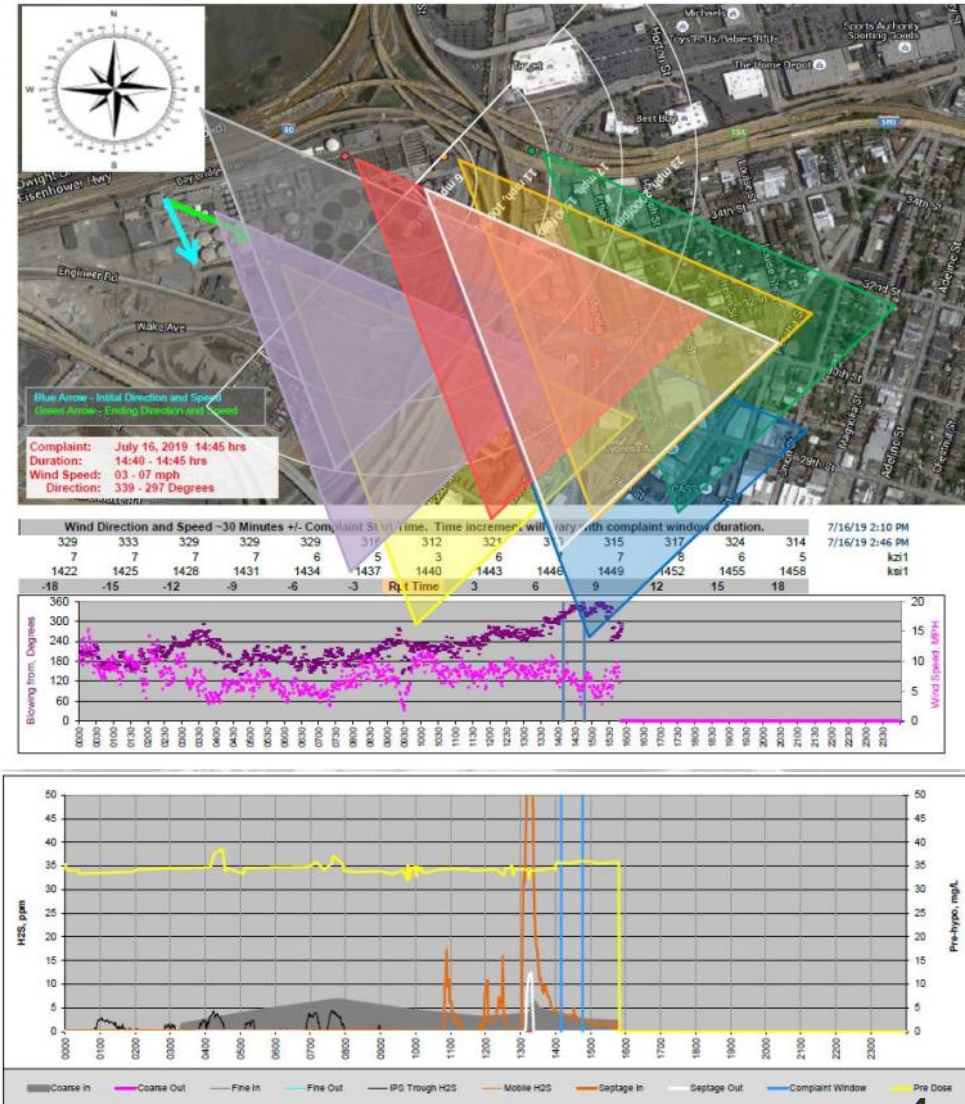


KPI \leq 30 complaints per Fiscal Year

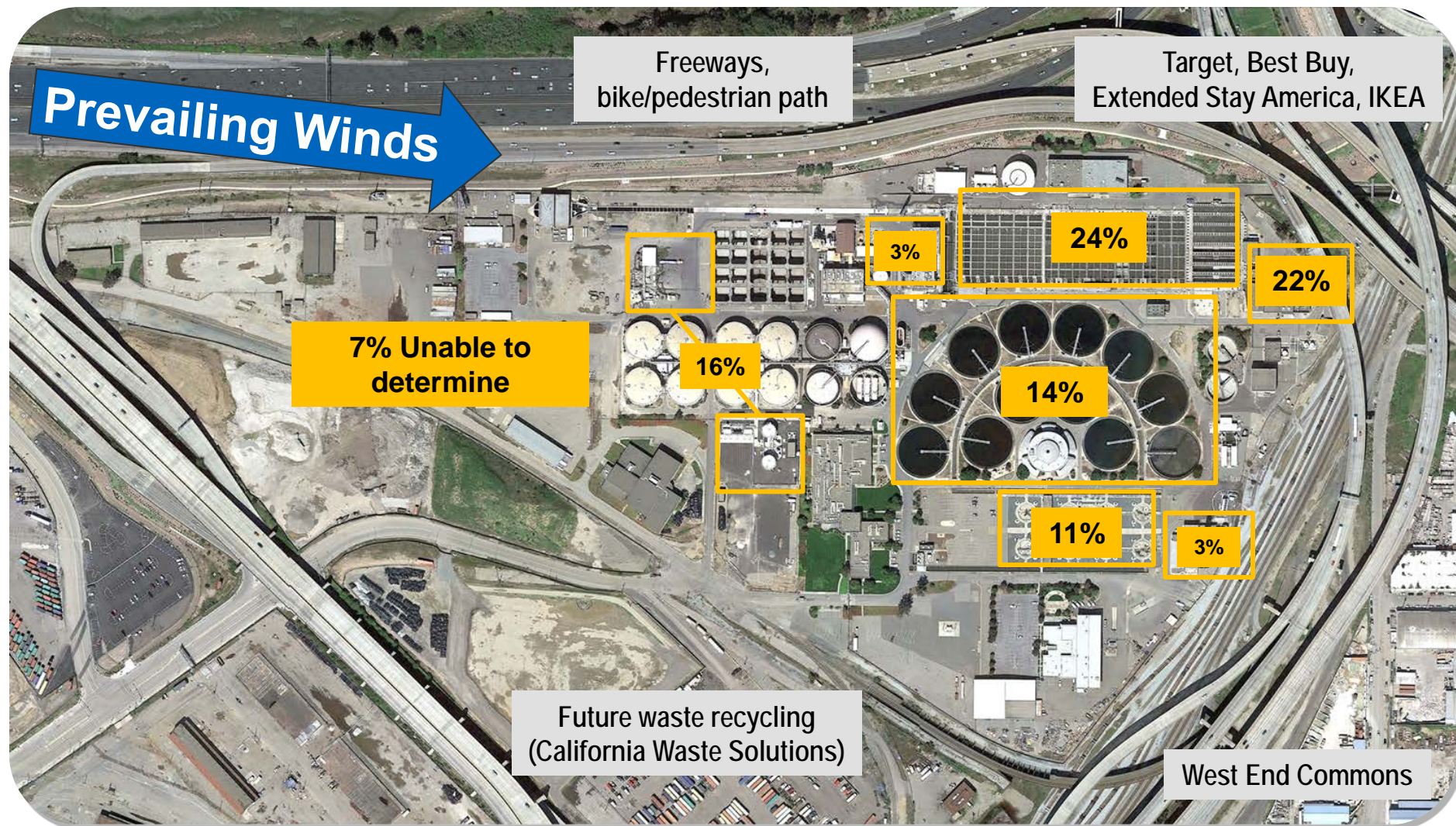


Investigate Odor Complaints

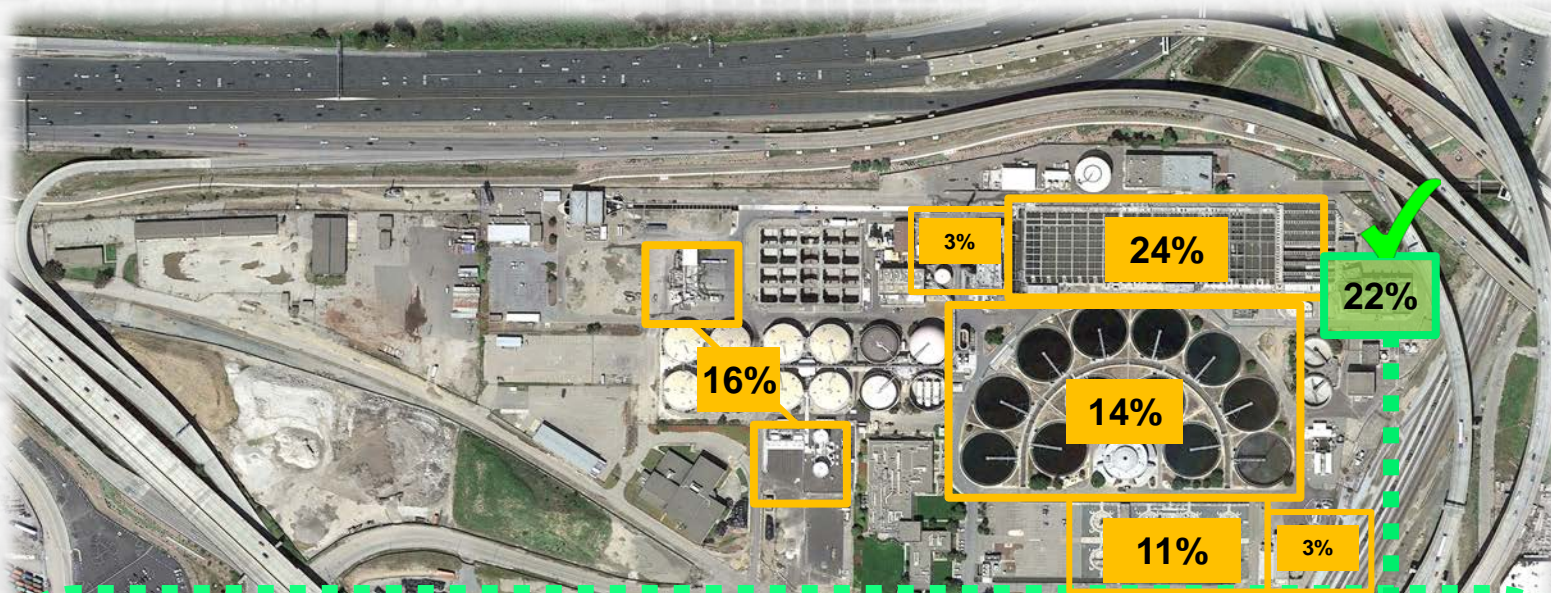
- 1 Receive complaint
- 2 Perform field investigation
- 3 Identify potential cause
- 4 Prepare incident summary report
- 5 Prevent incident from recurring



FY19 Odor Complaints and Probable Sources at the MWWTP



FY19 Capital Improvements



Upgraded Odor Control System for Influent Pump Station



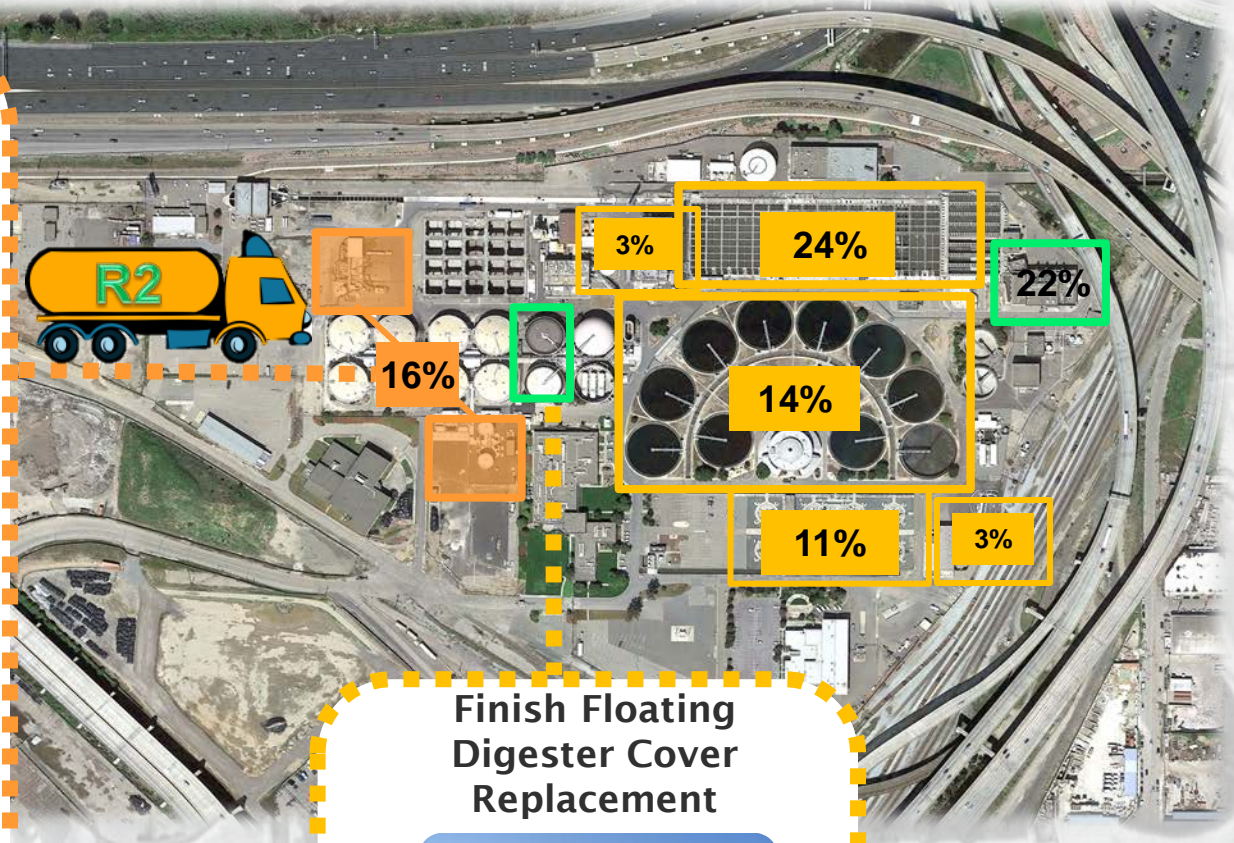
Operational
January 2019



FY20-FY24 Capital Improvements



Upgrade 3 Old Odor Control Units for Trucked Waste



Finish Floating Digester Cover Replacement



Additional Long-Term Odor Control Planning

The Integrated MWWTP Master Plan will evaluate...



Site Use



Liquid Treatment



Resource Recovery



Biogas/
Power



Solids Treatment



Facilities Plan

...and will incorporate odor control in later stages.

Wastewater Odor Control Team

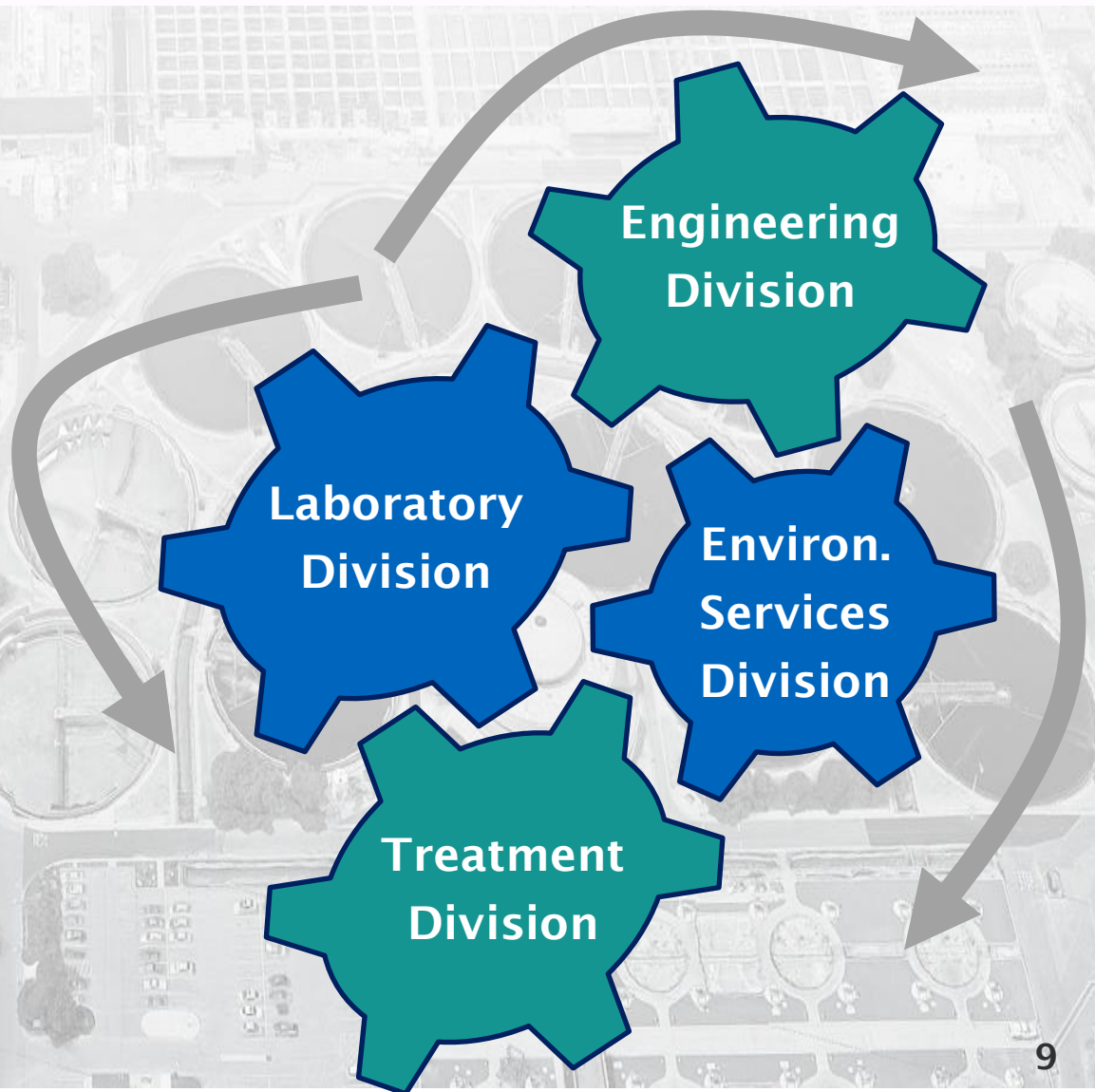


BY THE NUMBERS

1 Interdisciplinary Team

4 Wastewater Divisions

17+ Wastewater Employees

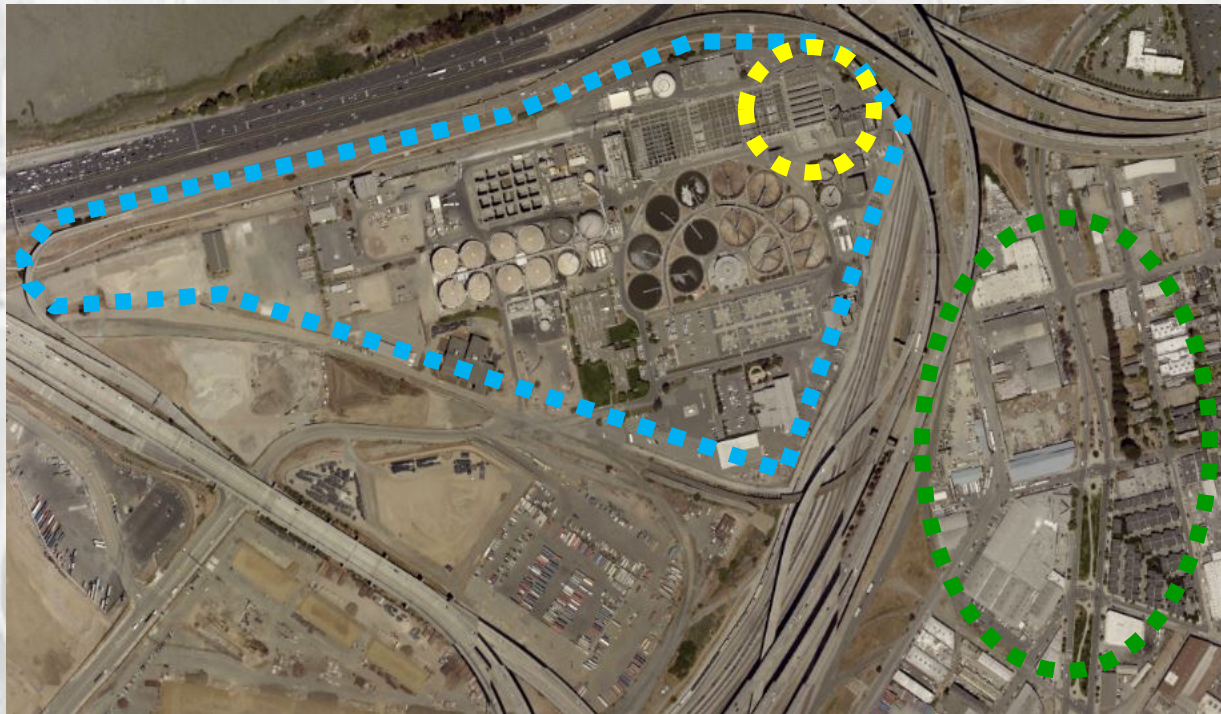


FY19 Continuous O&M Improvements

1 Focused on best management practices every day

2 Developed new chemical dosing protocol to control odors during plant drawdowns and shutdowns

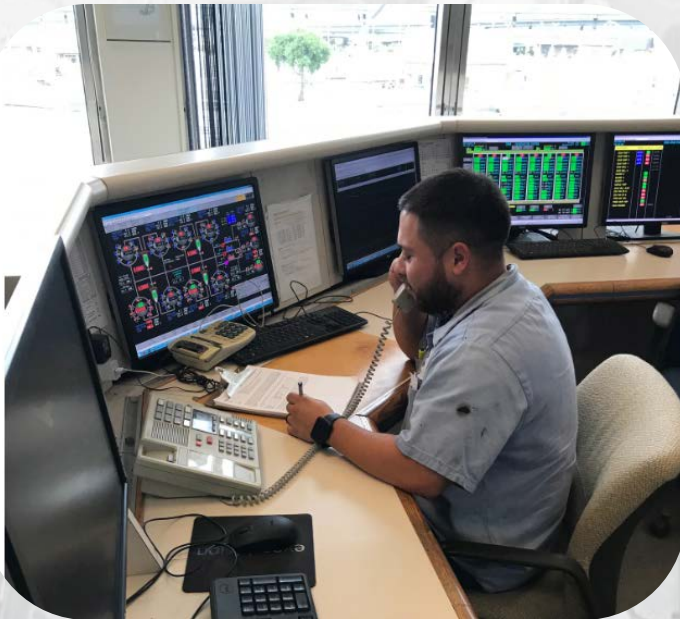
3 Checked manholes near the Mandela Parkway



FY19 Community Engagement



Proactive Outreach to Neighbors



Hosted Annual West
Oakland Liaison Meeting 11

Community Air Protection Program (AB 617)



West Oakland Community Action Plan Steering Committee

Local
Businesses

Neighborhood
Groups



Summary and Next Steps



CHALLENGES

- Close neighbors
- Wind direction
- Nature of wastewater
- Odors from trucked waste
- Frequent plant operational adaptations for construction needs

GOAL

Minimize odors and meet KPI of ≤ 30 odor complaints per year

PLAN

- 1 Continue engaging with West Oakland neighbors
- 2 Continue improving plant operation and maintenance practices
- 3 Develop the Integrated MWWTP Master Plan to inform additional major long-term odor investments

Thank You!



Duffel Photovoltaic Renewable Energy Project Update

Planning Committee

August 13, 2019

Duffel PV Project Update



- Project Objectives
- Project Location & Layout
- Environmental Impacts
- Public Outreach
- Next Steps

Project Objectives



EBMUD's Energy Policy

- Indirect Emissions: Carbon-free by 2040

Project Benefits

- Generate up to 12,000 MWh annually
- Offset approximately 2,200 metric tons GHG (18% of 2017 emissions)

PG&E's RES-BCT Tariff

- Renewable generation can be used to offset up to 50 EBMUD accounts with PG&E.
- Project on EBMUD property in the service area.

Project Site is on Watershed Property within City of Orinda



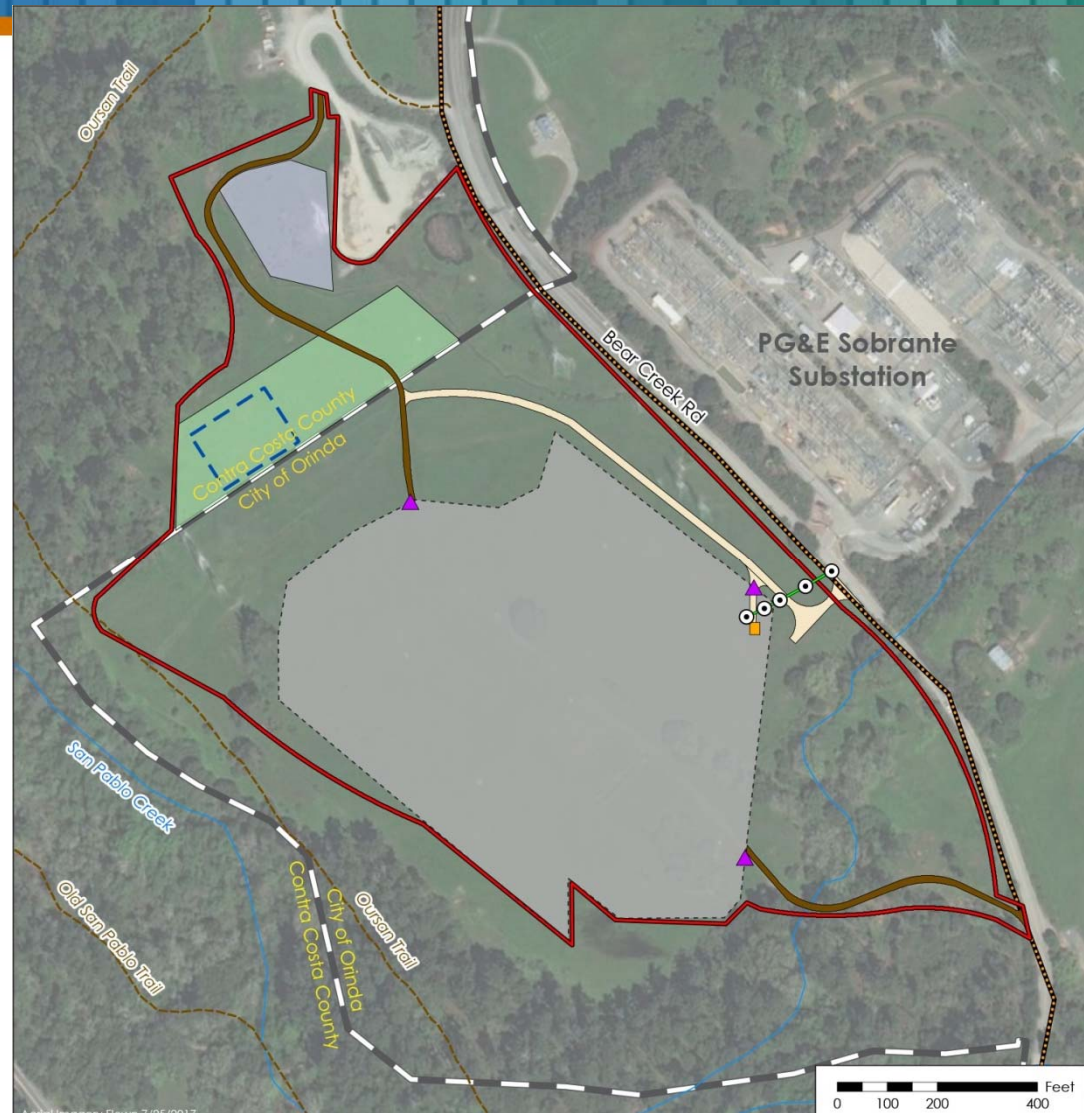
Conceptual Site Plan



5 MW project would:

Be limited to ~20 acres of EBMUD's 29,000 acres of local watershed

Minimize visual impacts by co-locating with PG&E's substation and addition of vegetative screening.



Single Axis PV Tracker



Sun Tracking

Flat - Mid-Day & Evening



Courtesy of: <https://youtu.be/thiMWgzeNnc>

CEQA Review



Environmental Factors	Less Than Significant	Less Than Significant With Mitigations
Aesthetics	✓	
Agricultural and Forestry		✓
Air Quality	✓	
Biological		✓
Cultural	✓	
Energy Use	✓	
Geology and Soils	✓	
GHGs	✓	
Hazards and Hazardous Materials	✓	
Hydrology and Water Quality	✓	
Land Use and Planning		✓
Noise	✓	
Transportation	✓	
Tribal Cultural Resources	✓	
Utilities and Service Systems	✓	
Wildfire	✓	

Biological Mitigation



- Species-specific mitigation
 - Alameda whipsnake
 - Dusky-footed woodrat
 - California red-legged frog
 - Western pond turtle
- Environmental fencing
- Pre-construction surveys
- Worker training
- Avoidance measures



Dusky-footed woodrat



California red-legged frog

Public Outreach and Comments



Orinda City Council Comments: March 5, 2019

- Maximize electrical undergrounding
- Address potential wildfire risk, enhanced noise and glare

Orinda Planning Commission: July 9, 2019

- Maximize electrical undergrounding
- Address consistency with General Plan and benefits to Orinda
- Address visual screening and erosion
- Consider co-location of community garden

Next Steps



- Release MND – August 30
- Orinda Public Meeting – September 11
- End of comment period – September 30
- Adopt CEQA, approve project – Fall 2019
- Execute PPA – Winter 2019
- Complete permitting – Spring 2020
- Execute PG&E Agreement – Spring 2020
- Apply for Orinda land use permit – Spring 2020
- Construction – 2020 to 2021