Water and Natural Resources Department Public Recreation Management

Planning Committee
November 10, 2015

Outline

- Discuss Mokelumne and East Bay Recreation Programs
- Review Results vs. Key Performance Indicators
- Discuss Major Activities and Initiatives in 2014/15
- Preview plans for 2015/16

Mokelumne Watershed Recreation

- Four developed Recreation Areas plus over 35 miles of trail
- Over 500,000 visitors in a typical year
- Implementing recommendations from Mokelumne Watershed Recreation Management Plan (2010)
- KPIs established for cost recovery, safety and visitor satisfaction

Mokelumne Recreation Financial KPIs

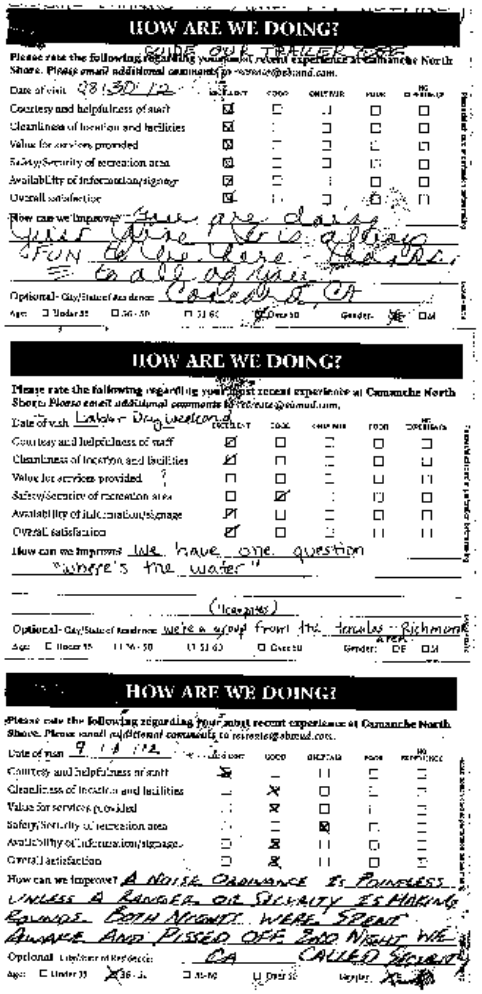
Recreation Management Area And % Cost Recovery Target	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Actual
Pardee Recreation:40%	33%	26%	41%	40%	45%
Camanche Northshore:45%	46%	64%	66%	66%	67%
Camanche Southshore:45%	34%	58%	64%	64%	63%
CHHP: 100%	76%	100%	96%	93%	87%

Mokelumne Recreation Public Safety

RMP Goal	2010 Result	2011 Result	2012 Result	2013 Result	2014 Result
Boating Safety <.01%	.013% 4 Accidents 30,918 Vessels	.014% 4 Accidents 29,612 Vessels	.015% 4 Accidents 27,267 Vessels	.019% 5 Accidents 26,713 Vessels	.005% 1 Accident 20,461 Vessels
Visitor Incidents <.2%	.13% 717 Incidents 542,761 Visitors	.10 % 528 Incidents 538,472 Visitors	.07% 363 Incidents 488,063 Visitors	.12% 634 Incidents 523,121 Visitors	.06% 294 Incidents 487,361 Visitors

Mokelumne Recreation Customer Surveys

- Visitor surveys include request for feedback on Courtesy, Cleanliness, Value, Safety and Security
- Target rating is minimum 80% “Good” or “Excellent”
- 2012 results: 89%
- 2013 results: 93%
- 2014 results: 93%



HOW ARE WE DOING?

Please rate the following regarding your most recent experience at Camanche North Shore. Please email additional comments to reresale@ebmud.com.

Date of visit 8/30/12

	EXCELLENT	GOOD	SATISFACTORY	POOR	NO EXPERIENCE
Courtesy and helpfulness of staff	☒	☐	☐	☐	☐
Cleanliness of location and facilities	☒	☐	☐	☐	☐
Value for services provided	☒	☐	☐	☐	☐
Safety/Security of recreation area	☒	☐	☐	☐	☐
Availability of information/signage	☒	☐	☐	☐	☐
Overall satisfaction	☒	☐	☐	☐	☐

How can we improve? Guess we are doing fine. We love this place. FUN to be here. Thanks for all of you.

Optional- City/State of residence Concord, CA

Age: ☐ Under 35 ☐ 36-50 ☐ 51-65 ☒ Over 50 Gender: ☒ F ☐ M

HOW ARE WE DOING?

Please rate the following regarding your most recent experience at Camanche North Shore. Please email additional comments to reresale@ebmud.com.

Date of visit Labor Day weekend

	EXCELLENT	GOOD	SATISFACTORY	POOR	NO EXPERIENCE
Courtesy and helpfulness of staff	☒	☐	☐	☐	☐
Cleanliness of location and facilities	☒	☐	☐	☐	☐
Value for services provided	?	☐	☐	☐	☐
Safety/Security of recreation area	☐	☒	☐	☐	☐
Availability of information/signage	☒	☐	☐	☐	☐
Overall satisfaction	☒	☐	☐	☐	☐

How can we improve? We have one question "where's the water"

(Ice please)

Optional- City/State of residence We're a group from the Tenders - Richmond

Age: ☐ Under 35 ☐ 36-50 ☐ 51-65 ☐ Over 50 Gender: ☐ F ☐ M

HOW ARE WE DOING?

Please rate the following regarding your most recent experience at Camanche North Shore. Please email additional comments to reresale@ebmud.com.

Date of visit 9/1/12

	EXCELLENT	GOOD	SATISFACTORY	POOR	NO EXPERIENCE
Courtesy and helpfulness of staff	☒	☐	☐	☐	☐
Cleanliness of location and facilities	☐	☒	☐	☐	☐
Value for services provided	☐	☒	☐	☐	☐
Safety/Security of recreation area	☐	☐	☒	☐	☐
Availability of information/signage	☐	☒	☐	☐	☐
Overall satisfaction	☐	☒	☐	☐	☐

How can we improve? A NOISE ORDINANCE IS POINTLESS UNLESS A RANGER OR SECURITY IS MAKING ROUNDS. BOTH NIGHTS WERE SPENT AWAKE AND PISSED OFF. 2ND NIGHT WE CALLED SECURITY

Optional- City/State of Residence CA

Age: ☐ Under 35 ☒ 36-50 ☐ 51-65 ☐ Over 50 Gender: ☒ F

Mokelumne Recreation Projects and Initiatives

- Managing drought impacts to recreation in 2014/15
- Major push to achieve water conservation goals
- Volunteer Program evolution timed well for Butte Fire support

Mokelumne Recreation Projects and Initiatives (cont.)

- Camanche Northshore marina nearing completion
- Pardee RV renovation underway
- Extension of Camanche Hills Hunting Preserve concession contract planned for 2016
- RFP for Pardee Recreation concession planned for 2016

East Bay Watershed Recreation

- Two developed recreation areas and over 80 miles of trails
- About 1.1 million visitors in a typical year.
- Venue for 3 collegiate crew rowing teams and host of 4 amateur rowing events drawing over 3,000 spectators
- KPIs established for cost recovery, safety and visitor satisfaction

East Bay Recreation Financial KPIs

Recreation Management Area % Cost Recovery Target	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual
Lafayette Recreation Management Area: 65%	78%	84%	82%
San Pablo Recreation Management Area: 40%	*N/A	54%	50%

*Final data not available at this time

East Bay Recreation Public Safety

EBMUD

CY 2014

KPI	Goal	Results CY 2012	Results CY 2013	Results CY 2014
Visitor Incidents (number of documented visitor incidents per visitor day	.2%	.02% 268 Incidents 1,116,031 visitors	.02% 278 Incidents 1,090,101 visitors	.02% 281 Incidents 1,220,794 visitors

East Bay Recreation Customer Surveys

- Visitor surveys initiated for the East Bay in 2012
- 2013 results: 89% of responses “Good” or “Excellent”.
- 2014 results: 94% of responses “Good” or “Excellent”.

East Bay Watershed Recreation Visitation

Location	CY 2012	CY 2013	CY 2014
Lafayette Recreation Area	940,960	907,000	1,020,616
San Pablo Recreation Area	127,351	130,941	143,045
Trail Use Permits Issued	47,720	52,160	57,133
Total	1,116,031	1,090,101	1,220,794

East Bay Watershed Recreation Revenue

Location	CY 2012	CY 2013	CY 2014
Lafayette Recreation Area	$1,035,257	$1,202,516	$1,252,962
San Pablo Recreation Area	$678,387	$771,041	$833,857
Watershed Trails	$44,030	$49,070	$53,880
Total	$1,757,674	$2,022,627	$2,140,699

East Bay Recreation Projects and Initiatives

2015 Security Camera Upgrade

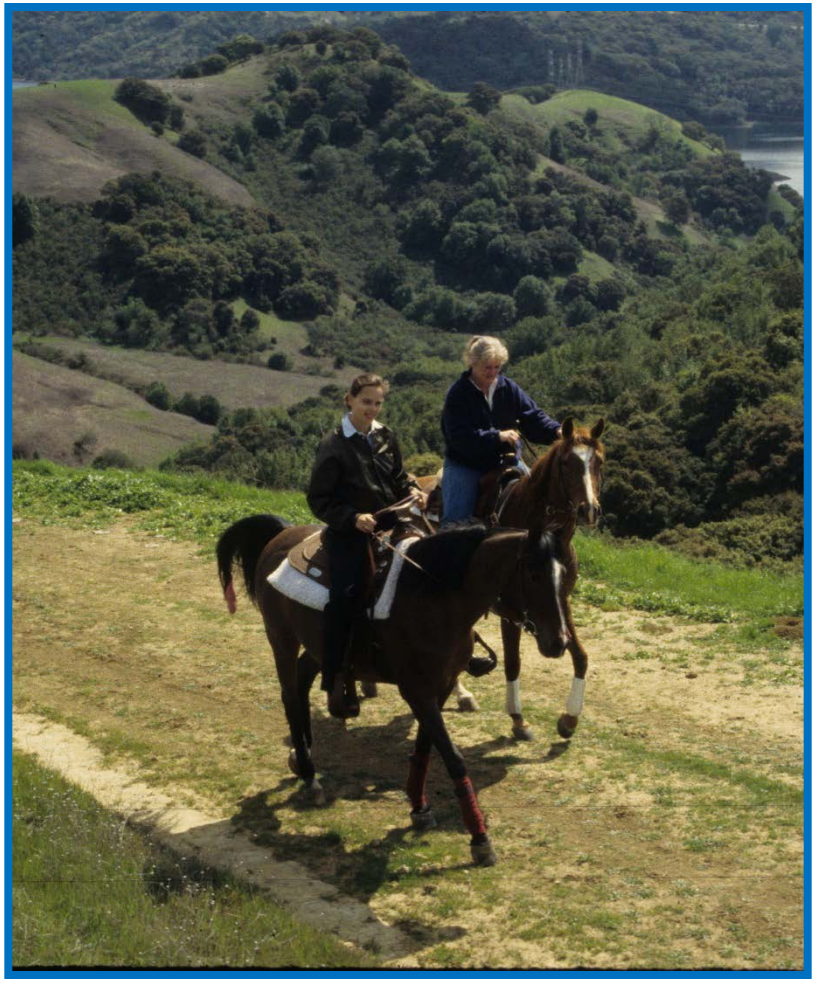
2015 Trails Resurfacing

East Bay Recreation Projects and Initiatives

- San Pablo Recreation Area: Replacement of pumps and upgrades to the electrical systems at the Sewage Lift Station.
- Installation of two CXT prefabricated concrete restrooms at group picnic sites.
- In progress: Upgrade to the rental boat dock in FY16.

Next Steps

- Focus on successful completion of 2015/16 initiatives
- Review KPIs after 2015 season and recommend changes if warranted
- Update BOD Planning Committee in September 2016



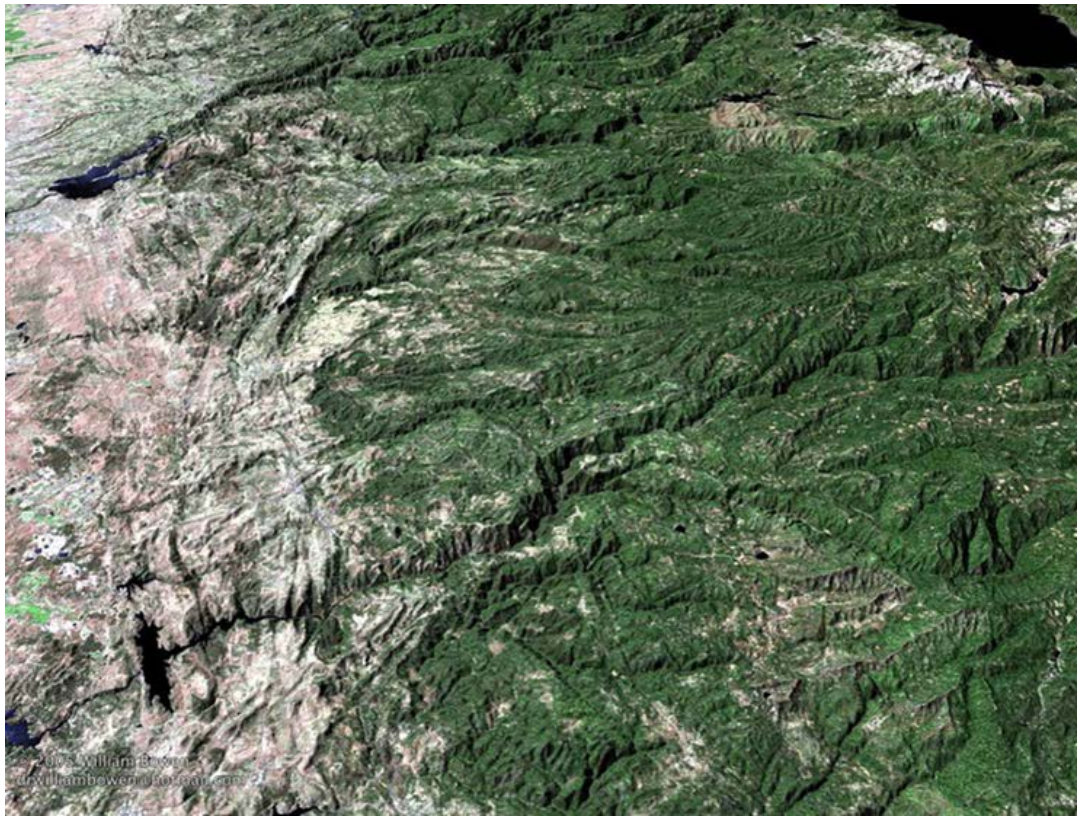
EAST BAY MUNICIPAL UTILITY DISTRICT

Mokelumne Forest Health Initiatives

Planning Committee
November 10, 2015

Mokelumne Forest Health Initiatives

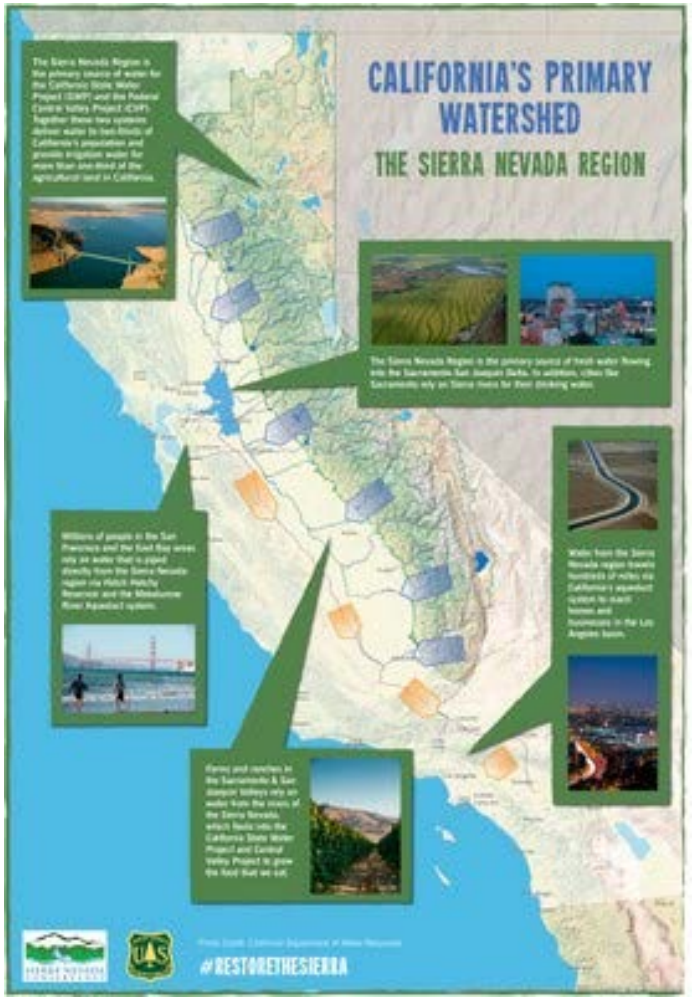
- Background
- Mokelumne Avoided Cost Analysis
- Finances
- Research
- Collaborative groups
- Next Steps



(Used with permission Dr. W. Bowen)

Mokelumne Forest Health Initiatives

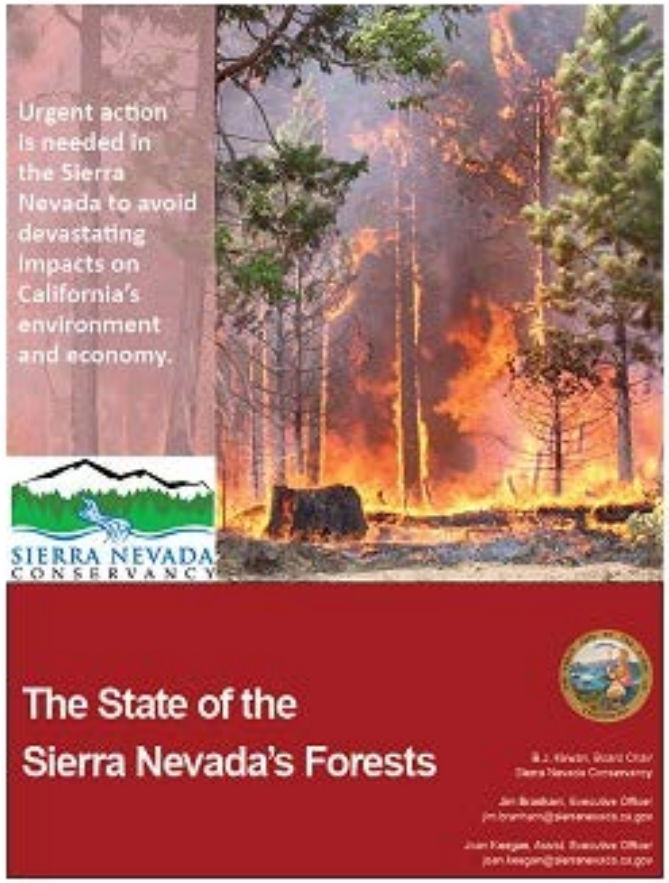
- California source waters
  - > 60% forested watersheds (SNC)



(SNC)

Mokelumne Forest Health Initiatives

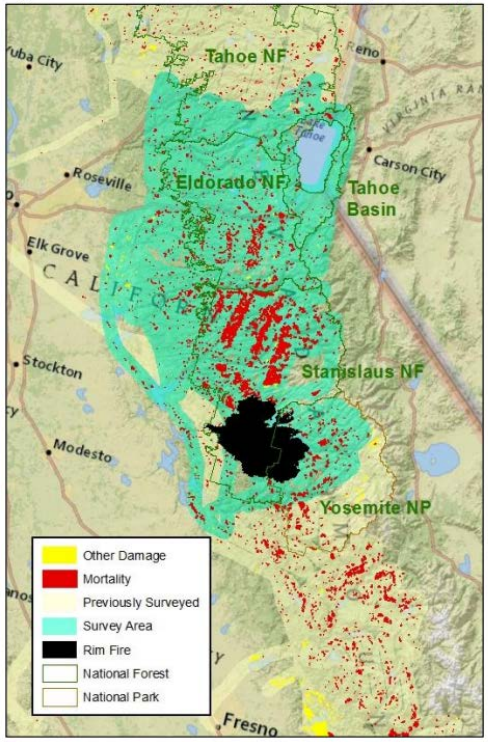
- California source waters
  - > 60% forested watersheds (SNC)
- Decline in forest health
  - Fire suppression priorities
  - Forest management conflicts



Mokelumne Forest Health Initiatives

- California source waters
  - > 60% forested watersheds
- Decline in forest health
  - Fire suppression priorities
  - Forest management conflicts
- Accelerating decline
  - Climate change
  - Drought
  - Insects/disease

Figure 1. Flown area and mapped tree mortality and damage



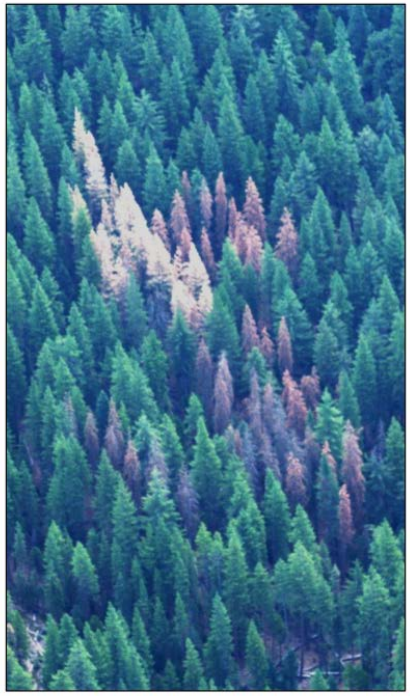


Figure 2. Pocket of recent and older pine mortality on the Stanislaus National Forest.

Health Detection Survey 2014 (USFS)

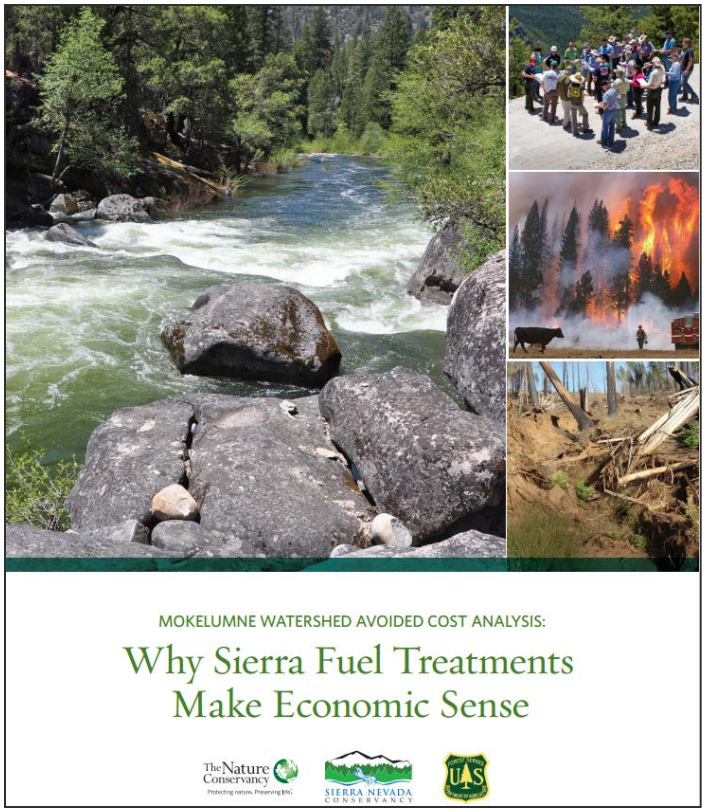
Mokelumne Forest Health Initiatives

- California source waters
  - > 60% forested watersheds
- Decline in forest health
  - Fire suppression priorities
  - Forest management conflicts
- Accelerating decline
  - Climate change
  - Drought
  - Insects/disease
- High intensity wildfire

Butte Fire 2015
(Photo: C. Swann)

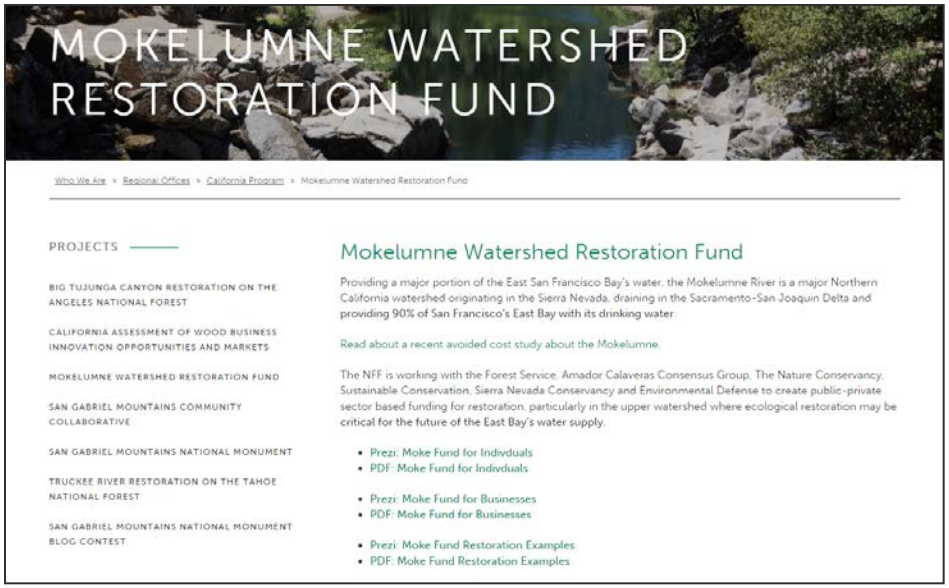
Mokelumne Avoided Cost Analysis

- Sierra Nevada Conservancy
- Many stakeholders
- Completed April 2014
- Case for investment into forested watersheds



Financing

- Mokelumne Fund
  - National Forest Foundation
- Blue Forest Conservation
  - For-profit
- Public Capital For Public Good
  - Non-profit



Research

- Forest restoration – water yield
  - Sierra Nevada Research Institute (U.C. Merced)
  - Center for Forestry (U.C. Berkeley)
- Research needs
  - Water quality and economic benefits of forested watershed protection
    - U.S. Endowment for Forests and Communities
    - Water Research Foundation

Amador-Calaveras Consensus Group

- Community-based
  - Fire-safe communities
  - Healthy forests and watersheds
  - Sustainable local economies
- Grant projects
  - Cornerstone Project (USFS)
  - Capacity building (USFS/NFF)

(Photo: USFS)

Upper Mokelumne River Watershed Authority

- Joint powers authority
  - 3 counties
  - 6 water agencies
  - Sustainable local economies
- Regional
  - Regional Partnership Committee
  - MAC Plan (IRWMP)
  - MokeWISE (DWR)

Upper Mokelumne River Watershed Authority

Next Steps

- Collaborations
  - Forest health and restoration initiatives
    - E.g. USFS video project
  - Research in forest health and watershed protection
  - Directly and through the UMRWA
- Mokelumne Fund (NFF)
  - Website and bill insert

(Photo: SNC)

EAST BAY MUNICIPAL UTILITY DISTRICT

Use of Technology in Operations and Maintenance

Planning Committee

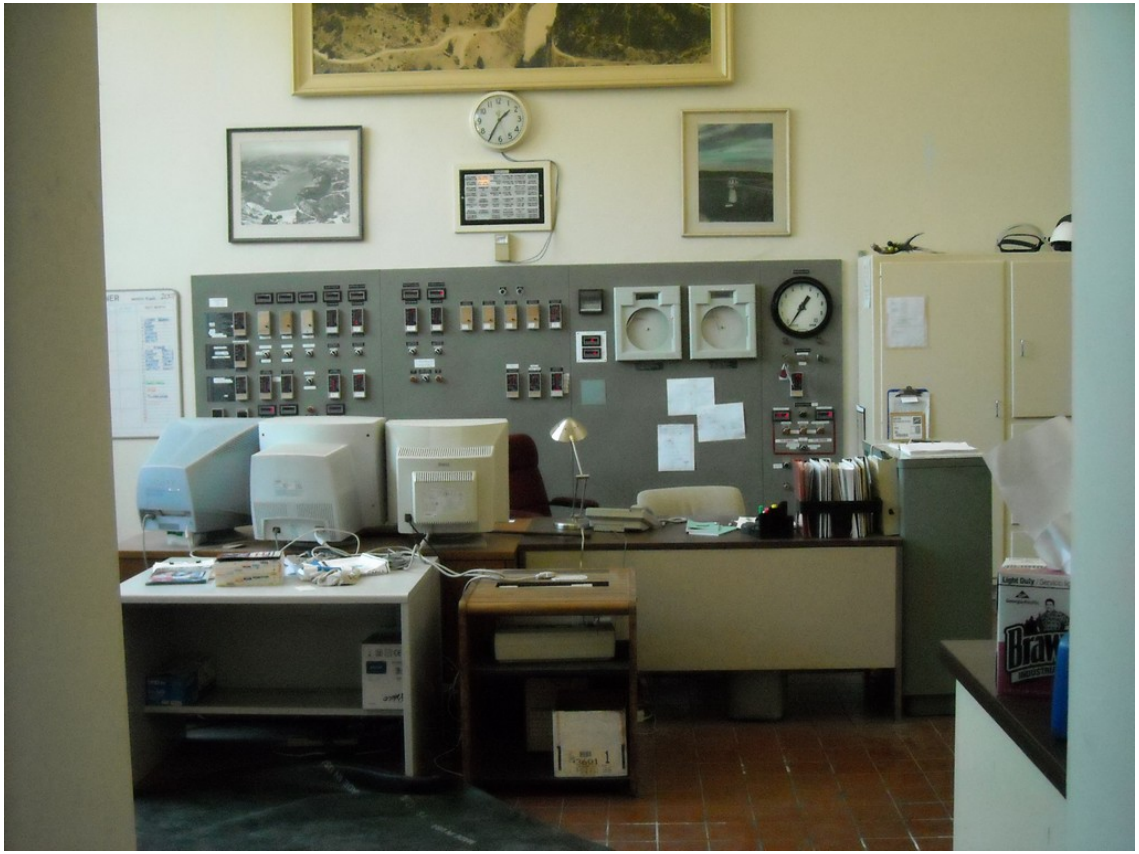
November 10, 2015

Overview

- Why adopt new technologies
- Internal and external challenges
- District use of technology
- Lessons learned
- Next steps

Why Adopt New Technology

- Obsolescence



Why Adopt New Technology

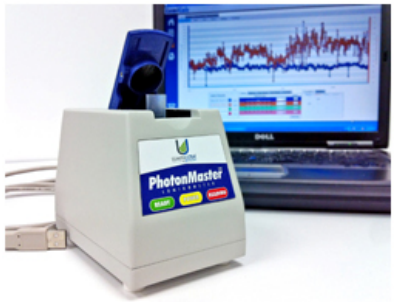
- Obsolescence
- Workforce expectations

Why Adopt New Technology

- Obsolescence
- Workforce expectations
- Regulatory

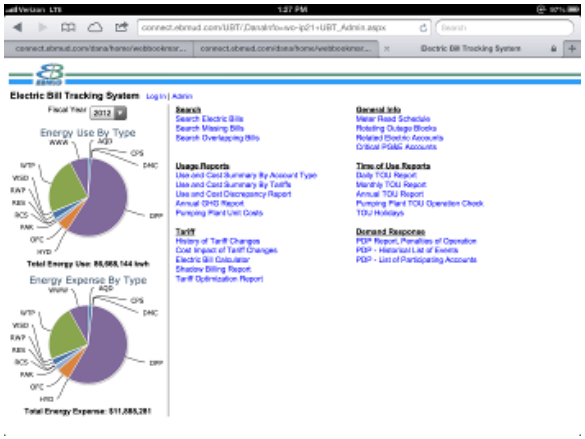
Why Adopt New Technology

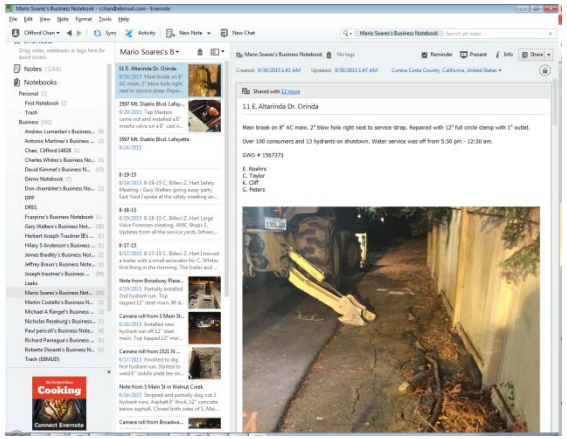
- Obsolescence
- Workforce expectations
- Regulatory
- Operations

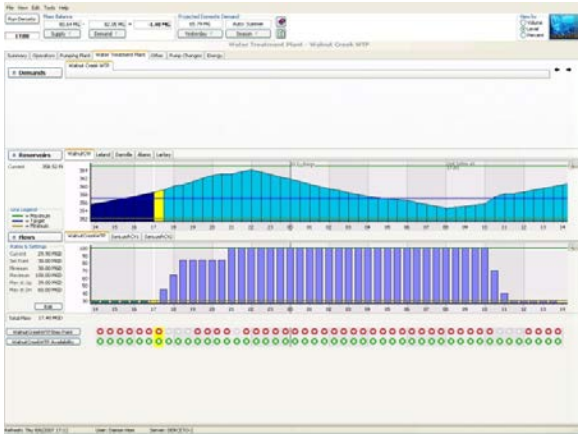


Why Adopt New Technology

- Obsolescence
- Workforce expectations
- Regulatory
- Operations
- Efficiency, cost savings communication







Challenges

- Internal challenges
- External challenges

Internal Challenges

- Risk
- Resources
- Complacency
- Resistance to change
- Purchasing rules

External Challenges

- Technology not ready (hype vs reality)
- Salespeople vs technical staff
- Underestimating integration effort
- Actual cost includes our time
- Don’t understand water business
- Viability of business

Technology Strategy

- Do the right things to address our business needs
- Communicate with staff
- Make the right investments
- Plan for the future
- Ensure what technology is secure and solution is cost effective
- Ensure long-term support

Technology at the District

- Technology can improve efficiency and effectiveness
- Examples
  - Pipeline infrastructure
  - Mobile computing
  - Leak detection
  - Leveraging data
  - Water quality

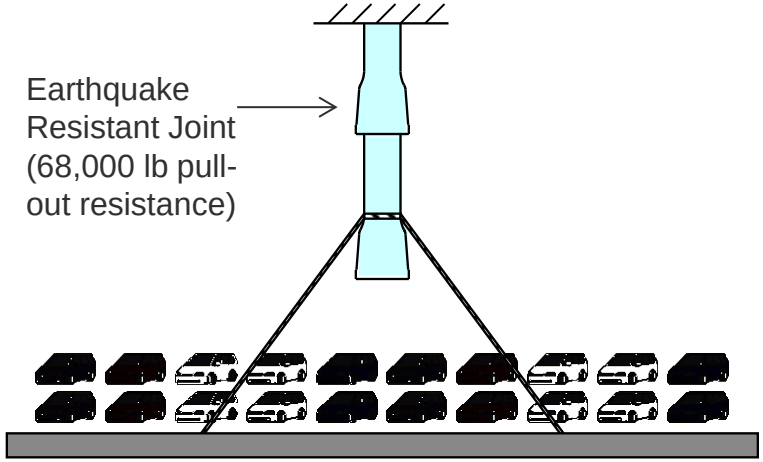
Pipeline Infrastructure

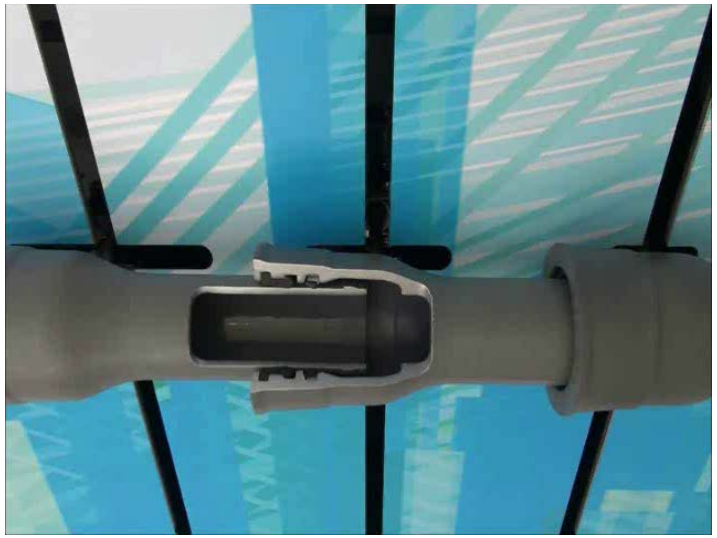
Kubota Pipe

EBMUD

Earthquake resistant pipes

- Ductile iron pipe
- Multiple trials in the United States

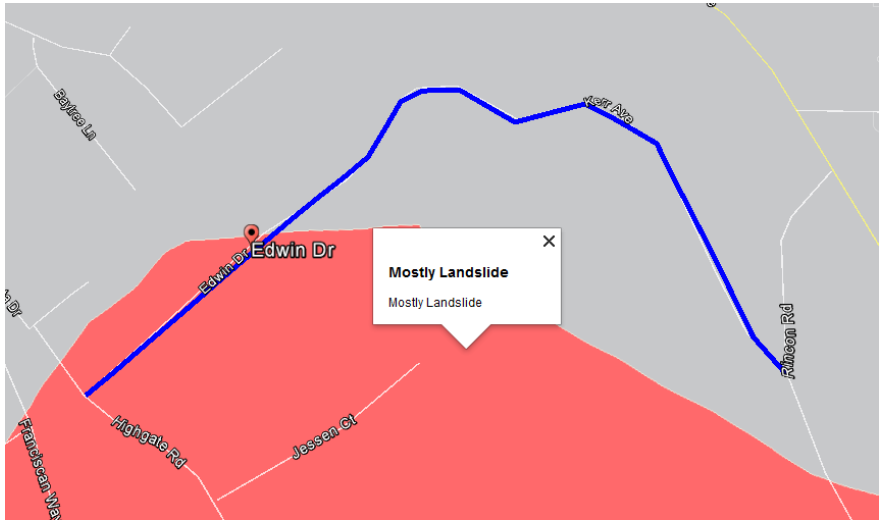




Pipeline Infrastructure

Kubota Pipe

- Pilot in Kensington completed October 2015
- 1800 feet on Edwin and Kerr Drive

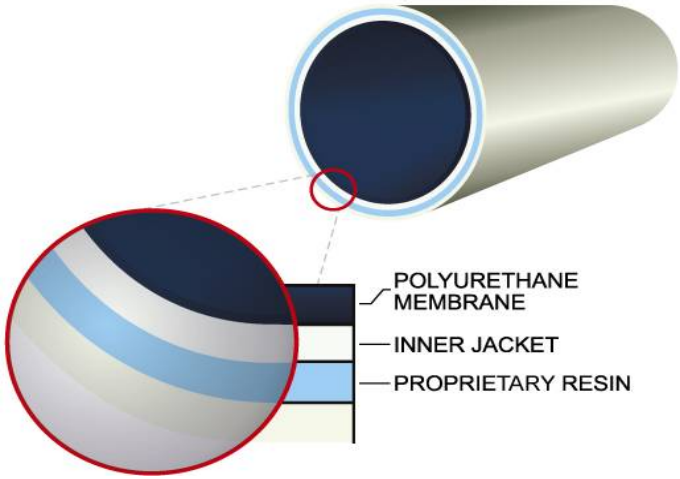


Pipeline Infrastructure

Aquapipe

<u>Alternative to open trench pipeline replacement</u>

- Less impact to communities
- Structural liner from 6- to 24-inches
- Bonds to host pipe
- Pilot in early 2016 in Lafayette, Walnut Creek, Richmond



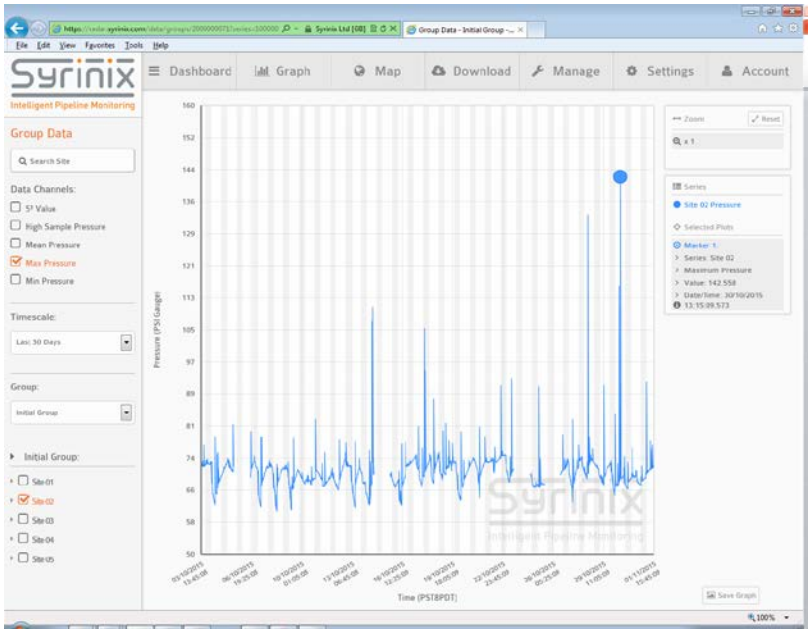
Pipeline Infrastructure

Syrinix

EBMUD

Real-time monitoring of pressure transients

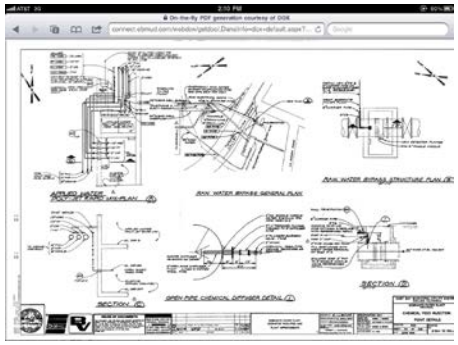
- Battery-powered
- 100+ readings per second
- Automatic notifications

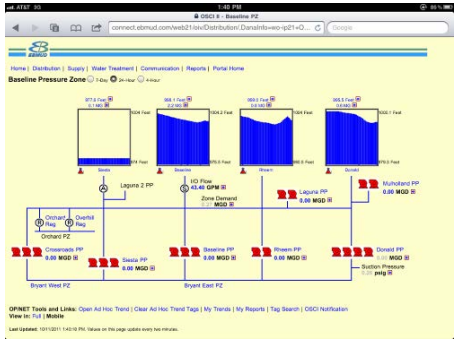


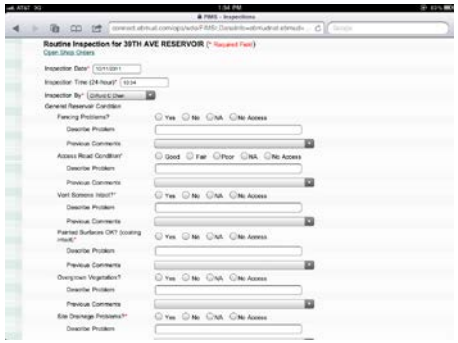
Mobile Computing

Information access for field staff

- Initial pilot in 2011
- Over 400 tablet computers and smartphones deployed
- Access to
  - Email
  - Drawings
  - Operational data
  - Field inspections

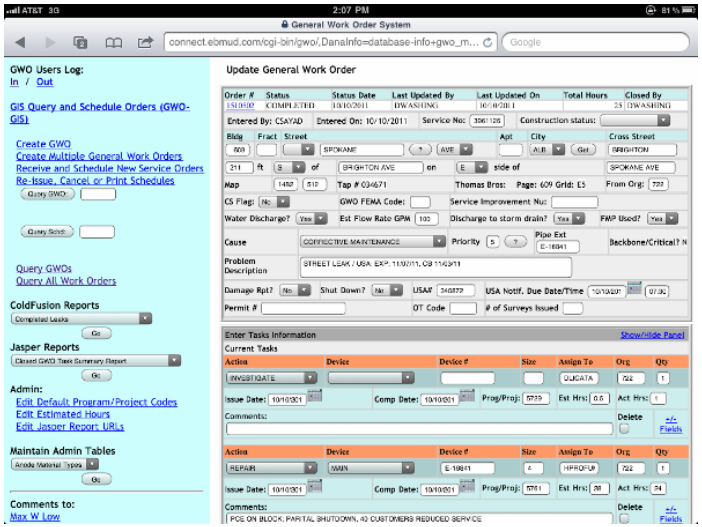


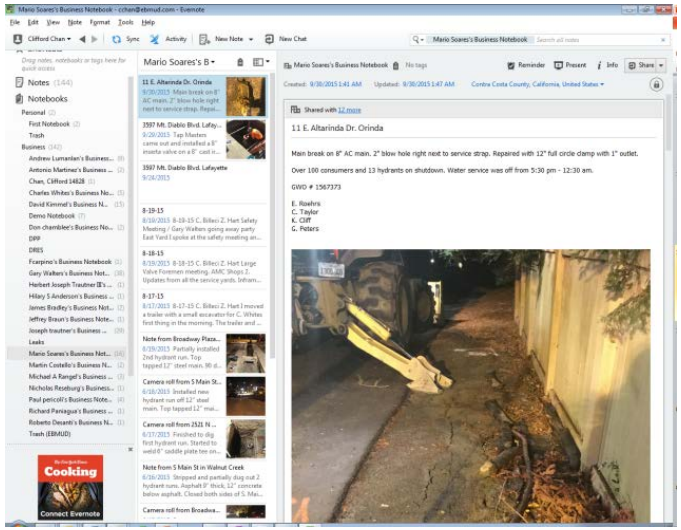


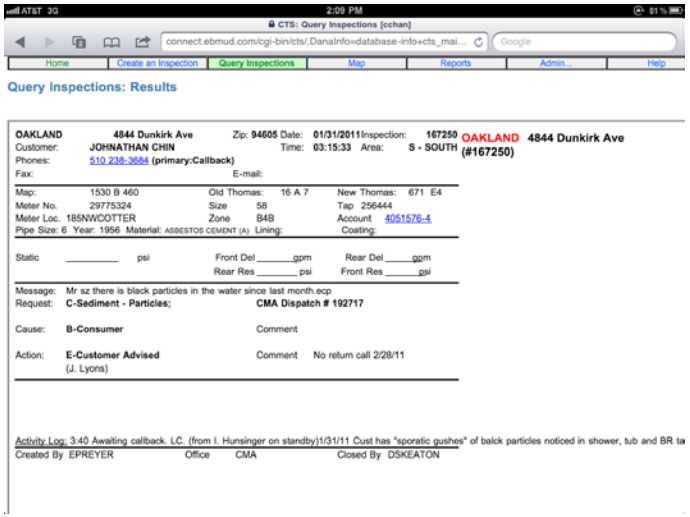


Mobile Computing

- Access to
  - Work orders
  - Journals
  - Customer inquiries





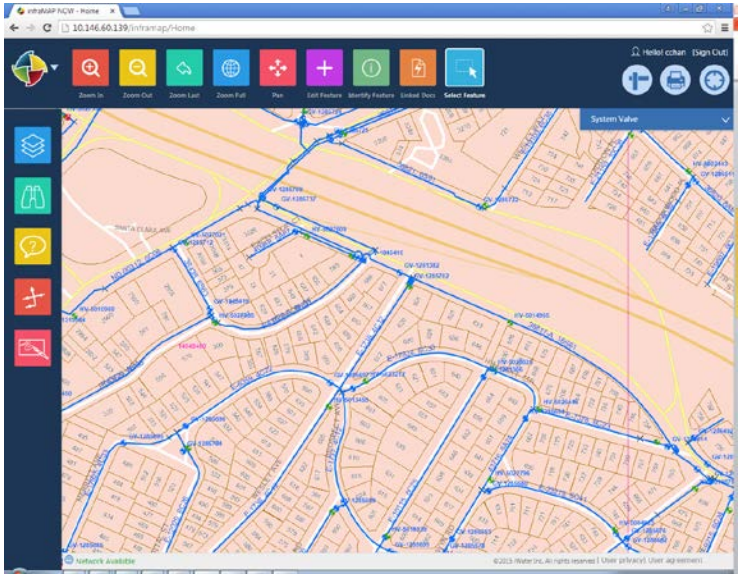


Mobile Computing

EBMUD

Access to distribution system maps

- Support maintenance
- Valve testing
- Shutdown planning and tracking



Leak Detection

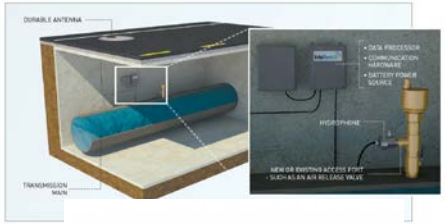
EBMUD

<u>Find non-surfacing leaks and quantify water loss</u>

- Acoustic Loggers
- Non-Metallic Pipe
  - Pilot starting December 2015
  - Complete April 2016
- Satellite Leak Detection
  - Pilot started March 2015
  - Complete April 2016
- District Metered Areas
  - Pilot starting early 2016

AQUALOGY

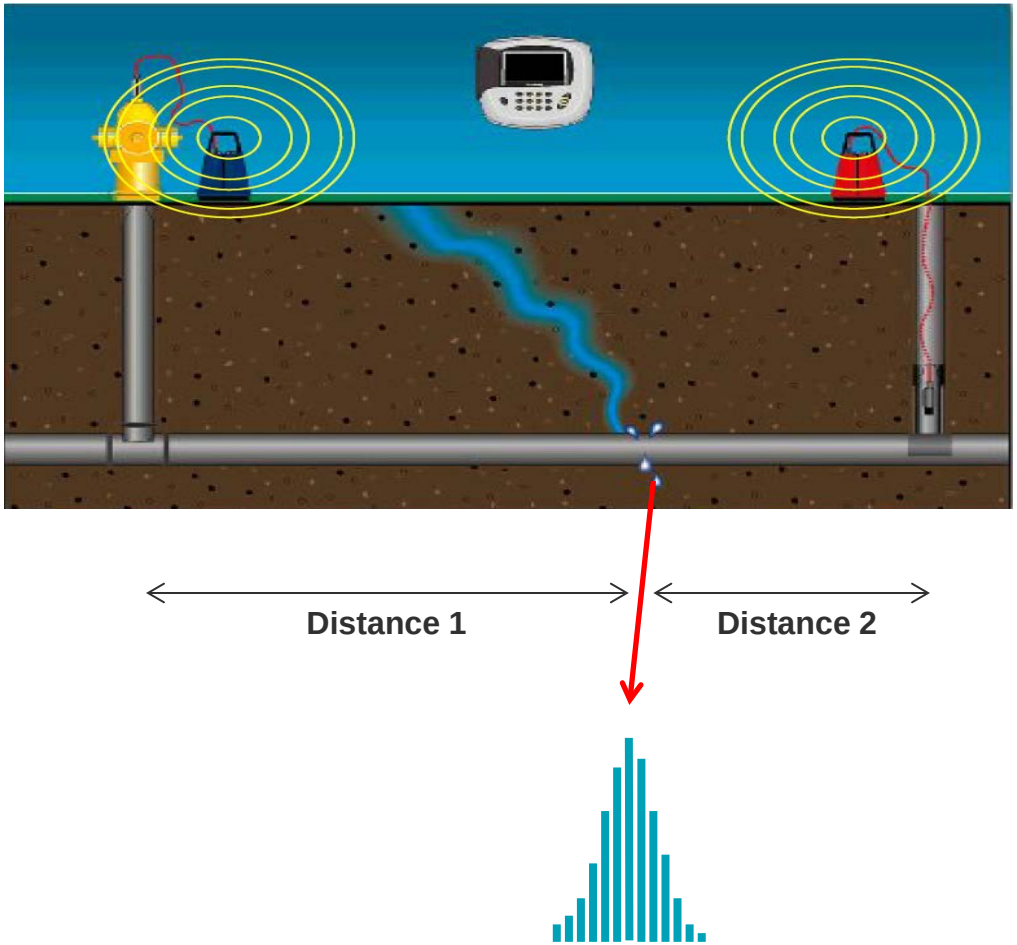
Fcs
Fluid Conservation Systems



echologics
A DIVISION OF MUELLER CO.

Leak Detection

Acoustic Loggers



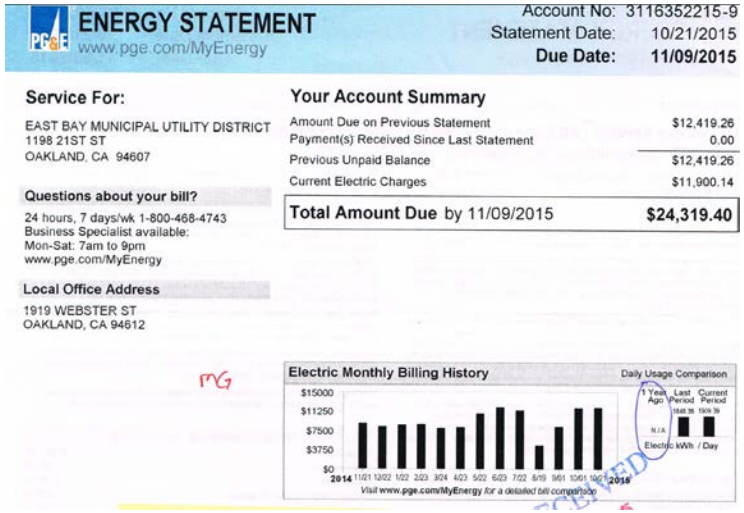
Leak Detection

Acoustic Loggers

- Find non-surfacing leaks
- Goal to survey 300 miles each year

Year	Miles Surveyed	Leaks Repaired
FY11	355	118
FY12	315	128
FY13	535	143
FY14	227	183
FY15	629	348

Leveraging Data
Electric Bill Tracking



PG&E ENERGY STATEMENT
www.pge.com/MyEnergy

Account No: 3116352215-9
Statement Date: 10/21/2015
Due Date: 11/09/2015

Service For:

EAST BAY MUNICIPAL UTILITY DISTRICT
1198 21ST ST
OAKLAND, CA 94607

Questions about your bill?

24 hours, 7 days/wk 1-800-468-4743
Business Specialist available:
Mon-Sat: 7am to 9pm
www.pge.com/MyEnergy

Local Office Address

1919 WEBSTER ST
OAKLAND, CA 94612

Your Account Summary

Amount Due on Previous Statement	$12,419.26
Payment(s) Received Since Last Statement	0.00
Previous Unpaid Balance	$12,419.26
Current Electric Charges	$11,900.14
Total Amount Due by 11/09/2015	**$24,319.40**

MG

Electric Monthly Billing History

Daily Usage Comparison

$15000
$11250
$7500
$3750
$0

2014 11/21 12/22 1/22 2/23 3/24 4/23 5/22 6/23 7/22 8/19 9/61 10/61 10/21 2015

1 Year Ago | Last Period | Current Period
N/A
Electric kWh / Day

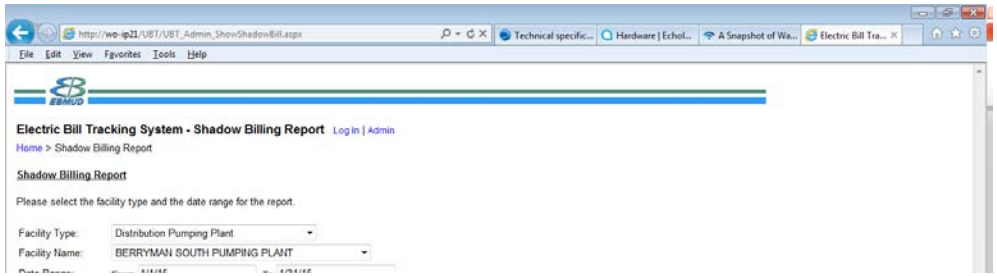
Visit www.pge.com/MyEnergy for a detailed bill comparison

Leverage operational data

- SCADA data
- Electric bill data
- Hydraulic models

Leveraging Data

Electric Bill Tracking



- Lev
  and PG&E data
  - Shadow billing
  - T
    optimization

Shadow Billing Report from 1/1/2015 to 1/31/2015

Service Name	Service ID	Calculated $	PG&E $	$ Difference	% Difference	
BERRYS/DINGEE/SUMMITS PP	2991337005	$104,067.22	$102,831.19	$1,236.03	1%	Details

Tariff Comparison Report for accounts currently in E19 Tariff for Calendar Year 2015

Service Name	Service ID	Current Tariff	Current Tariff $	E20 $	A6 $	A10 $	A1 $	$ Difference	% Difference
BAYFAIR PP PERALTA PP	5897607611	E19PX	$71,910	$84,612	$60,379	$79,524	$70,415	-$11,531	-16%

EMMONS PP	5897607044	E19S	$70,441	$70,411	$77,641	$95,758	$102,470	-$29	0%
HAWTHORNE PP	5897607159	E19SX	$68,651	$74,812	$76,161	$83,981	$90,165	$0	0%
JOAQUIN MILER PP	5897607889	E19SX	$44,118	$50,436	$43,811	$52,093	$52,367	-$307	-1%
MADRONE PP PALO SECO PP	5897607912	E19SX	$46,755	$53,698	$43,639	$52,220	$52,635	-$3,116	-7%
MONTCLAIR PP	5897607317	E19SX	$57,992	$63,730	$45,914	$61,988	$54,610	-$12,078	-21%
MOYERS PP ROAD 24 NO. 2 PP	5897607884	E19SX	$59,019	$64,745	$39,665	$61,623	$48,325	-$19,354	-33%
PIEDMONT PP	5897607553	E19SX	$90,601	$95,085	$70,963	$93,201	$79,560	-$19,639	-22%
QUARRY PP	5897607371	E19SX	$49,925	$55,908	$48,014	$58,326	$57,987	-$1,911	-4%
Total								-$107,843	

Tariff Comparison Report for accounts currently in E20 Tariff for Calendar Year 2015

Service Name	Service ID	Current Tariff	Current Tariff $	E19 $	A6 $	A10 $	A1 $	$ Difference	% Difference
BERRYMAN SOUTH PP DINGEE PP SUMMIT SOUTH PP	2991337005	E20P	$468,350	$467,130	$590,324	$591,669	$693,947	-$1,220	0%
CASTENADA PP	6522588005	E20P	$375,660	$374,350	$391,160	$454,572	$476,849	-$1,310	0%
SAN RAMON PP	7522612022	E20S	$434,171	$445,801	$473,548	$538,836	$567,273	$0	0%
Total								-$2,530	

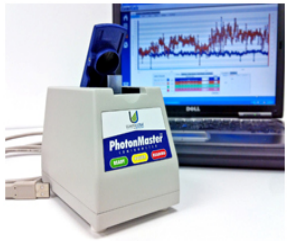
Water Quality Monitoring

EBMUD

<u>Improve real time water quality monitoring</u>

- Trihalomethane Analyzer
  - Purchased in 2014
  - Results in 30 minutes
- Luminultra
  - Purchased in 2014
  - Detect biological activity
  - Results in minutes

Parker



LUMINULTRA™

Water Quality Monitoring

EBMUD

Improve distribution system water quality

- Chloramine Boosting
  - Maintain chloramine residual in reservoirs
  - Installed 2014 at Tice Reservoir in Walnut Creek
- Ice Pigging
  - Clean distribution system pipes
  - Piloted in 2014 and 2015 at two sites

TANK Shark™
MIXING SYSTEMS

Utility Service Group

Lessons Learned

Conduct a Pilot

- Understand the purpose of the pilot
  - Test the technical feasibility of technology
  - Demonstrate feasibility with staff
- Carefully pick the pilot location and testers
- Think about scalability
- Include users in pilot design

Lessons Learned

Ask Questions

- "What are you trying to solve?" Don't get caught up in the allure of new technology
- "Do I already have something that solves this problem?"
- "Is this going to create more problems?"
- "How much is this going to <u>really</u> cost?"

Isle Technology Advisory Group

- Joined in 2013
- Technology and innovation consultant
- Partnership with Water Research Foundation
- 80 members worldwide, 15 in the United States

Technologies Presented	Technologies Piloted or Investigated	Technologies Used by District
50	15	8

Maintenance Technology Committee

- Started in 2015
- Staff from divisions within OMD
- Identify and vet new technologies
- Four new technologies identified

Lessons Learned

- Identify technology champions
- Plan big, start small
- Meet with the users
- Manage expectations
- Look for small wins
- Leverage existing technologies, tools and applications
- Be willing to make mistakes

Next Steps

- Evaluate and test new technologies
- Leverage and expand use of mobile computing
- Continue participation in Isle TAG

Questions

EAST BAY MUNICIPAL UTILITY DISTRICT

Water Recycling Coordination with West County Wastewater District

Planning Committee

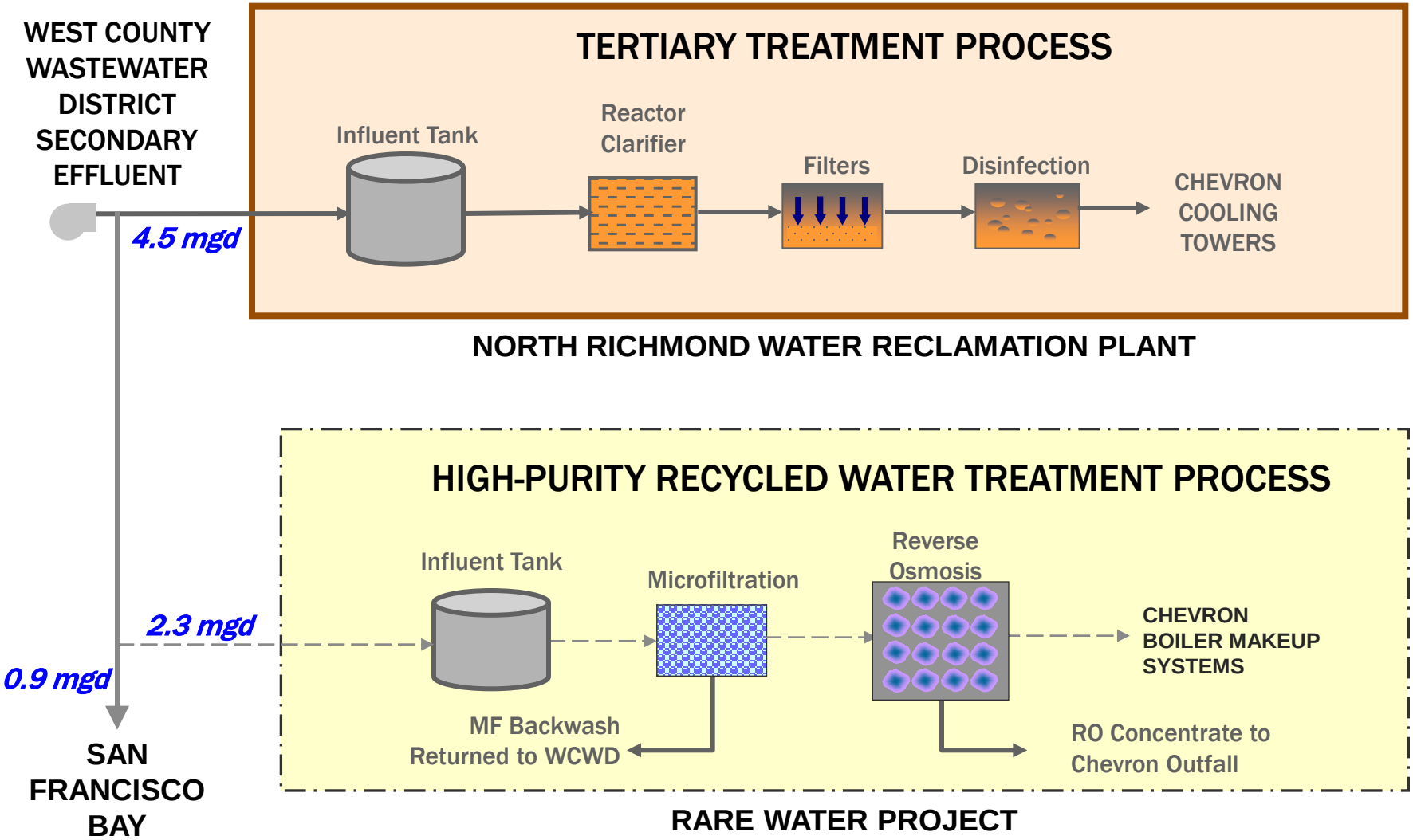
November 10, 2015

Presentation Outline

- Background
- Recycled Water Quality Issues
- Coordination Efforts with WCWD
- Next Steps

Water Recycling Facilities Serving Chevron Refinery

WCWD Supply to District Water Recycling Facilities



North Richmond Water Reclamation Plant

- Product water has been used in Chevron cooling towers since 1995
- Not designed to remove ammonia
- High ammonia and turbidity in WCWD source water

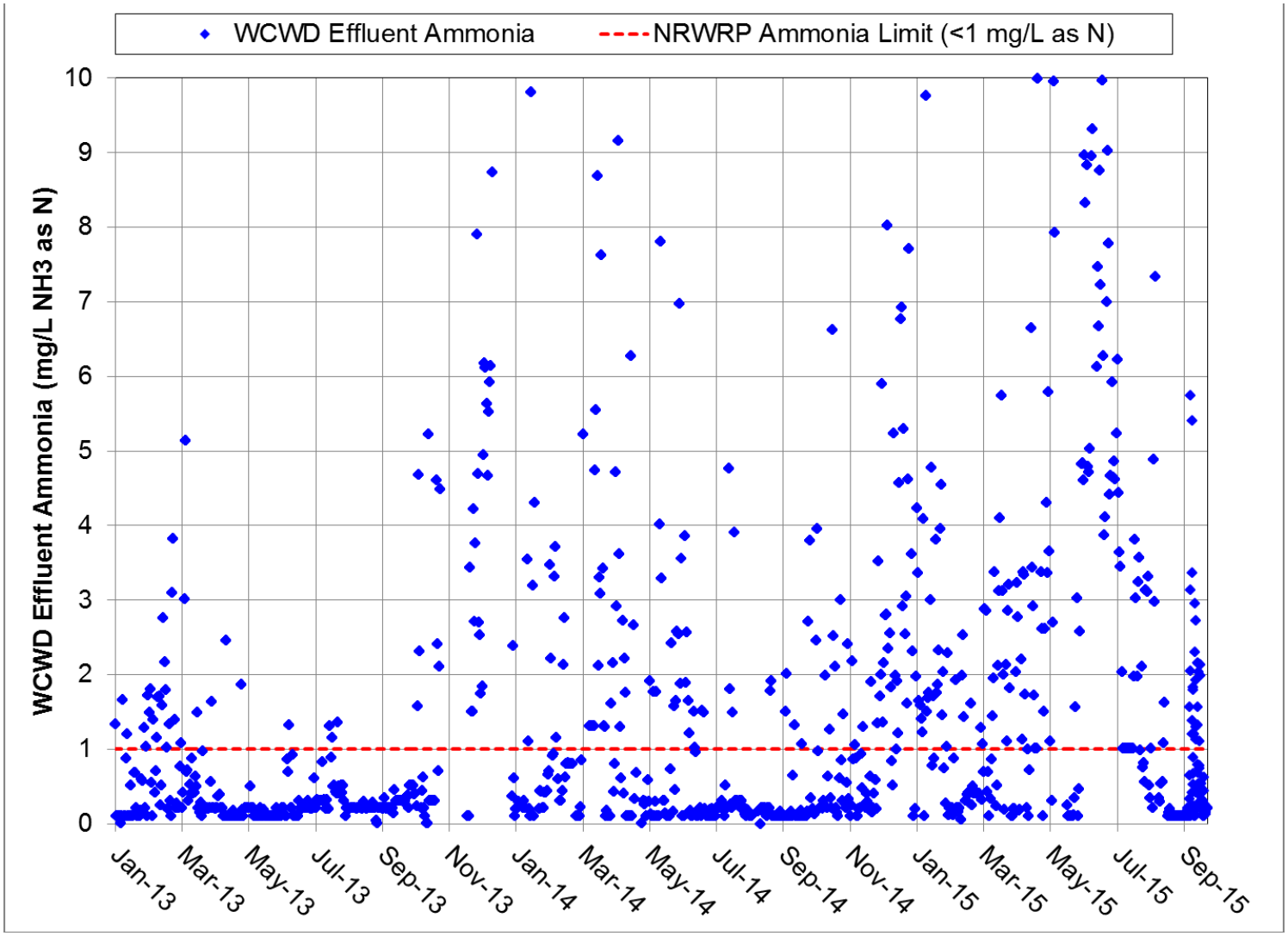
Recycled Water Quality Issues

Key NRWRP Water Quality Requirements

- Ammonia <1.0 mg/L—District agreement with Chevron
- Effluent turbidity <2 NTU—RWQCB Order

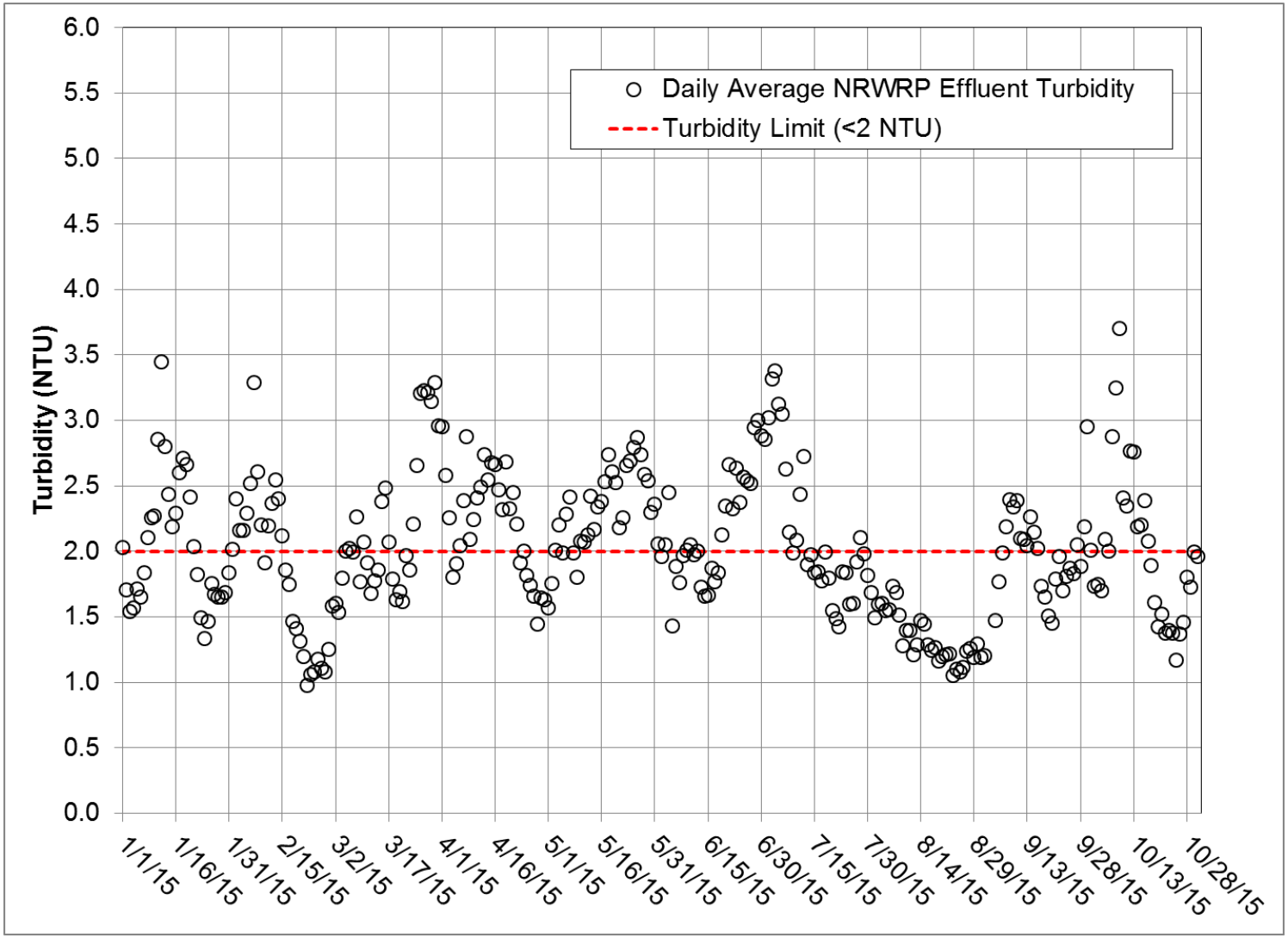
Recycled Water Quality Issues

WCWD Effluent Ammonia



Recycled Water Quality Issues

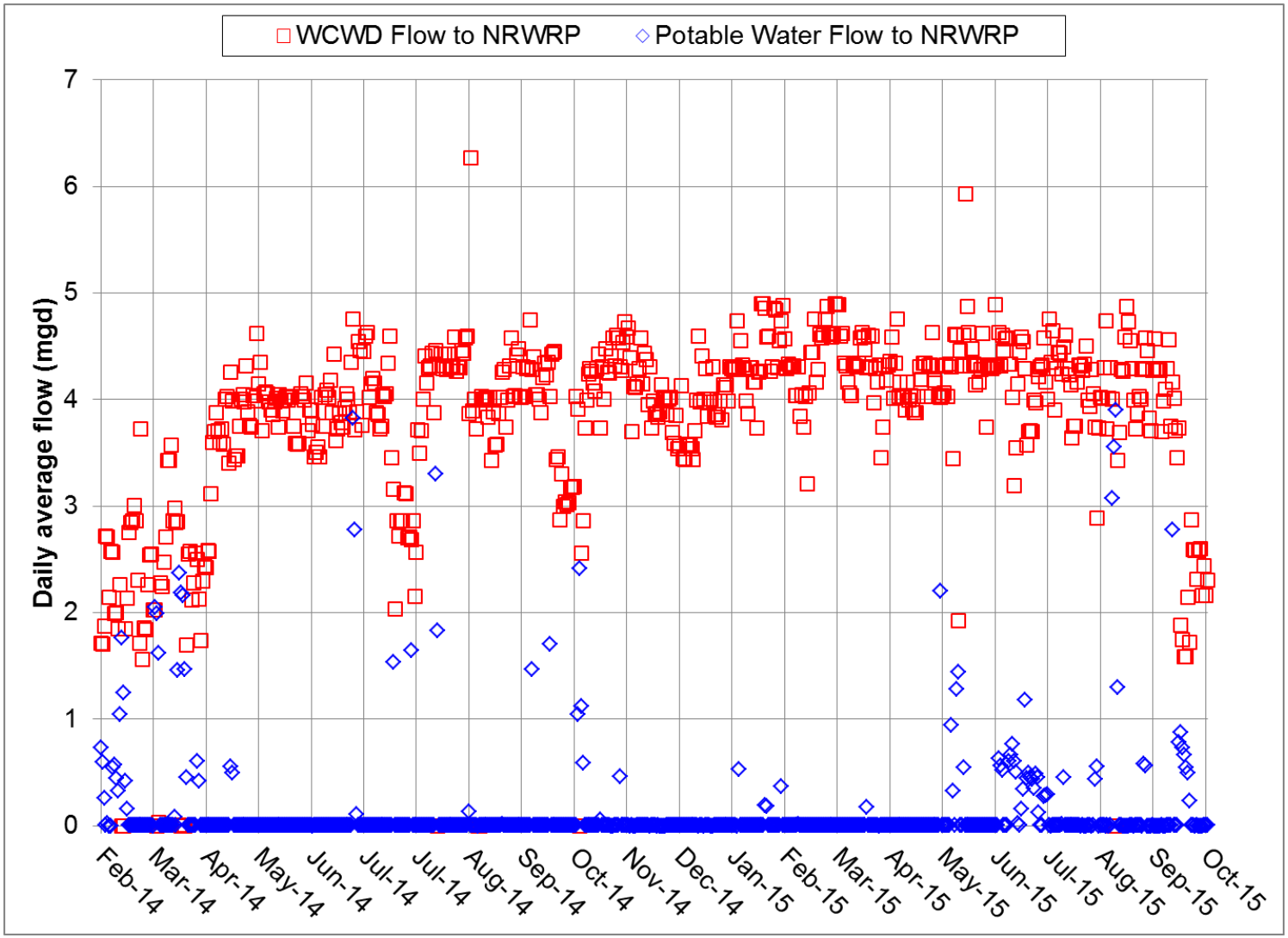
NRWRP Effluent Turbidity



Recycled Water Quality Issues
District Operational Response

- Blend NRWRP recycled water product with potable water to meet Chevron requirements (avoid plant shutdown)
- Use breakpoint chlorination
  - Oxidizes ammonia to a nitrogen gas
  - Limited effectiveness, unreliable, costly

Potable Water Blending at NRWRP



Coordination Efforts with WCWD

- In September 2015, senior management from both agencies met to develop a joint process to address water quality issues
  - Agreement to jointly develop operational and capital improvements with short- and long-term focus
- Staff is participating in regular technical meetings with WCWD staff to jointly develop short- and long-term improvement plans

Joint Coordination
Short-term Plan Development

- Identify and implement interim measures (pre-June 2017) to ensure reliable ammonia removal via the biological treatment process at WCWD
- Identify fair apportionment of costs between the two agencies

Joint Coordination
Long-term Plan Development

- WCWD intends to have a new nitrogen removal process operational by June 2017
  - Work with WCWD to meet District recycled water quality requirements using new process
  - Identify fair apportionment of costs between the two agencies
- Coordinate development of the District's master planning activities for NRWRP and RARE with WCWD long-term planning efforts

Next Steps

- Continue joint development of long- and short-term improvement plans
- Request a meeting with Board representatives from both agencies where staff would jointly present the improvement plans