Orinda Water Treatment Plant Disinfection Improvements Project Update

February 13, 2018
Agenda

- Background
- Project objectives and scope
- Need for specialized services
- Collaborative consultant-led design
- Next steps
Background: Orinda WTP
Disinfection Improvements

- No dedicated post-filter chlorine contact
- Disinfection occurs in Aqueducts; forms higher DBPs
- Very little margin for reliable disinfection (CT ratio)
- Project introduced at 10/10/17 Planning Committee meeting
- Alternatives discussed at 12/12/17 Planning Committee meeting
Project Objectives

- Reduce DBPs
- Bring Orinda WTP to the same disinfection standards as our other inline WTPs
- Provide a robust, reliable multi-barrier disinfection process
- Implement disinfection improvements that are compatible with long-term pre-treatment plans for Orinda WTP
Specialized Services: Deep Excavation and Shoring

(L) Secant piles with interlocking concrete columns (more expensive)

(R) Interlocking steel sheet piles with bracing (less expensive)
Specialized Services: UV Design and Computational Fluid Dynamics

Computational fluid dynamic (CFD) modeling of complex hydraulics
Contracting Out Specialized Services

- UV system design, validation and DDW permitting expertise
- Closely coupled systems (UV/CCB) need to be designed in tandem
- Large-scale design would delay many other important projects
Project Scope: Consultant Services

- **Carollo Engineers**
  - Design new UV/chlorine contact basin facilities and supporting infrastructure
  - Los Altos Pumping Plant #2 electrical upgrades
  - Utility relocation within limits of new facilities
  - CEQA, permitting, startup and commissioning

- **CDM**
  - Design, value engineering, and constructability review
Project Scope: District Forces

- Utility relocation study and design
- Chemical system design
- Project management
- Construction management
- Document review
- UV pilot testing

Xylem/Wedeco Spektron 250e pilot UV reactor at OWTP
Next Steps

- Consider consultant agreements
  - Carollo: Design services
  - CDM: Design review, VE, constructability

- Complete District investigations
  - Surveying
  - Utility locations
  - Geotechnical investigations

- Begin detailed design
EBMUD Board Member
Succession Plan

Board Presentation
February 13, 2018
Overview

- Key definitions under the Succession Plan
- Determining the “unavailability” of Regular Officers
- Ongoing duties of Standby Officers
- The term of service of Standby Officers
The Board Succession Plan would apply only in a:

- “State of War Emergency”
- “State of Emergency” or
- “Local Emergency”
- **Not** in a District-declared emergency
The Definition of “Unavailable”

- CESA defines “unavailable” as either killed, missing, or so seriously injured as to be unable to attend meetings and otherwise perform duties.

- Additionally, the Succession Plan:
  - Clarifies that the “unavailability” must be the result of the emergency, and
  - Allows a Board member to declare himself or herself to be unavailable.
Upon declaration of an emergency under CESA:

- The General Manager shall determine the availability of Regular Officers.
- The Board shall convene as soon as possible.
- The General Manager shall request a Standby Officer to attend the meeting for each Regular Officer unable to attend.
- At the first Board meeting the General Manager shall report to the Board the availability of each Regular Officer not present.
Filling Vacancies at the First Meeting

If five Regular Officers are available, at the option of the Board:

- The Board may fill each vacancy within 60 days of the effective date of the vacancy by appointing Board members to fill those positions in accordance with the provisions of the MUD Act; or

- The Standby Officers shall immediately begin service in the remaining two positions as provided under CESA.

If five Regular Officers are unavailable, Standby Officers shall immediately serve in place of the unavailable Regular Officers as provided under CESA.
Standby Officer Ongoing Duties

Standby Officers shall:

- Take the Oath of Office following today’s appointment.
- Complete a Form 700 this year.
- Remain informed of Board member duties and District affairs.
- Remain ready to report for duty following an emergency.

The list of Standby Officers shall be reviewed annually by Office of the Secretary, and the appointment of Standby Officers shall be confirmed by the Board annually.
Upon filling a vacancy, Standby Officers shall have all the powers and duties of a Regular Officer and shall serve until:

- The Regular Officer becomes available;
- The dismissal of the Standby Officer; or
- The election or appointment of a new Regular Officer in accordance with the MUD Act.
Water Supply Update

Board of Directors Meeting
February 13, 2018
Current Water Supply
Gross Water Production

![Graph depicting Gross Water Production from FY 2018 to FY 2013 with average FY 2005-2007.](image-url)
Current Water Supply
Mokelumne Precipitation

<table>
<thead>
<tr>
<th></th>
<th>Rainfall Year 2018</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>JUL</td>
<td>0”</td>
<td>0”</td>
</tr>
<tr>
<td>AUG</td>
<td>0.17”</td>
<td>0”</td>
</tr>
<tr>
<td>SEP</td>
<td>1.68”</td>
<td></td>
</tr>
<tr>
<td>OCT</td>
<td>0.57”</td>
<td></td>
</tr>
<tr>
<td>NOV</td>
<td>9.68”</td>
<td></td>
</tr>
<tr>
<td>DEC</td>
<td>0.74”</td>
<td></td>
</tr>
<tr>
<td>JAN</td>
<td>6.29”</td>
<td></td>
</tr>
<tr>
<td>FEB</td>
<td>0.00”</td>
<td></td>
</tr>
<tr>
<td>MAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JUN</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Current Water Supply

East Bay Precipitation

- Rainfall Year 2018
- Average

- JUL: 0"
- AUG: 0"
- SEP: 0.04"
- OCT: 0.26"
- NOV: 3.68"
- DEC: 0.06"
- JAN: 4.81"
- FEB: 0.00"
- MAR: 0"
- APR: 0"
- MAY: 0"
- JUN: 0"
## Current Water Supply

### Precipitation

As of 2/8/2018 Cumulative Precipitation % of Average

<table>
<thead>
<tr>
<th>Location</th>
<th>Precipitation</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>East Bay</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Bay Watershed</td>
<td>8.84”</td>
<td>53%</td>
</tr>
<tr>
<td><strong>Mokelumne Basin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Station Average</td>
<td>19.13”</td>
<td>68%</td>
</tr>
</tbody>
</table>
### Current Water Supply

#### Snow

**As of 2/8/2018**

<table>
<thead>
<tr>
<th></th>
<th>Inches</th>
<th>% of Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caples Lake Snow Depth</td>
<td>12.00”</td>
<td>18%</td>
</tr>
<tr>
<td>Caples Lake Snow Water Content</td>
<td>5.04”</td>
<td>23%</td>
</tr>
</tbody>
</table>
California Water Supply
Automated Sensor Snow Water Equivalents

% of April 1 Average / % of Normal for This Date

Caples Lake Snow Water Content
18% / 23%
California Water Supply
Snow Water Equivalent

February 8, 2017

February 8, 2018
# Current Water Supply

## Reservoir Storage

As of 2/8/2018

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Current Storage</th>
<th>Percent of Average</th>
<th>Percent of Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pardee</td>
<td>181,210 AF</td>
<td>101%</td>
<td>89%</td>
</tr>
<tr>
<td>Camanche</td>
<td>314,420 AF</td>
<td>119%</td>
<td>75%</td>
</tr>
<tr>
<td>East Bay</td>
<td>126,730 AF</td>
<td>98%</td>
<td>84%</td>
</tr>
<tr>
<td><strong>Total System</strong></td>
<td><strong>622,360 AF</strong></td>
<td><strong>109%</strong></td>
<td><strong>81%</strong></td>
</tr>
</tbody>
</table>
### Water Supply Projections
(Runoff Projections as of February 8, 2018)

<table>
<thead>
<tr>
<th>Forecast</th>
<th>Annual Runoff</th>
<th>Total System Storage (on Sept 30, 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% Exceedance</td>
<td>560 TAF</td>
<td>630 TAF</td>
</tr>
<tr>
<td>(1 of 10 years are wetter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50% Exceedance</td>
<td>365 TAF</td>
<td>570 TAF</td>
</tr>
<tr>
<td>(5 of 10 years are wetter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90% Exceedance</td>
<td>255 TAF</td>
<td>500 TAF</td>
</tr>
<tr>
<td>(9 of 10 years are wetter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Year</td>
<td>745 TAF</td>
<td>630 TAF</td>
</tr>
</tbody>
</table>
## Reservoir Storage and Elevation

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Elevation</th>
<th>+Gain</th>
<th>Storage</th>
<th>+Gain</th>
<th>Maximum Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mokelumne</td>
<td>Feet</td>
<td>-Loss</td>
<td>Ac-Ft</td>
<td>-Loss</td>
<td>Feet</td>
</tr>
<tr>
<td>Pardee</td>
<td>557.47</td>
<td>0.27</td>
<td>181890</td>
<td>560</td>
<td>567.65</td>
</tr>
<tr>
<td>Camanche</td>
<td>220.65</td>
<td>-0.1</td>
<td>312980</td>
<td>650</td>
<td>235.5</td>
</tr>
</tbody>
</table>

### East Bay Reservoirs

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Elevation</th>
<th>+Gain</th>
<th>Storage</th>
<th>+Gain</th>
<th>Maximum Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briones</td>
<td>566.31</td>
<td>-0.22</td>
<td>52240</td>
<td>-150</td>
<td>576.14</td>
</tr>
<tr>
<td>Chabot</td>
<td>224.47</td>
<td>0.01</td>
<td>9430</td>
<td>10</td>
<td>227.25</td>
</tr>
<tr>
<td>Lafayette</td>
<td>439.9</td>
<td>0</td>
<td>3150</td>
<td>0</td>
<td>449.16</td>
</tr>
<tr>
<td>San Pablo</td>
<td>307.19</td>
<td>-0.14</td>
<td>33400</td>
<td>-110</td>
<td>313.68</td>
</tr>
<tr>
<td>Upper San Leandro</td>
<td>443.49</td>
<td>0.02</td>
<td>27660</td>
<td>10</td>
<td>459.98</td>
</tr>
</tbody>
</table>

### Total East Bay Res.

- Storage: 125880 Ac-Ft
- Loss: -240 Ac-Ft
- Release: 151065 Cfs
- Spill: 771980 Cfs

## Total System Storage

- Total: 620750 Ac-Ft
- Loss: -330 Ac-Ft

## Distribution System

### Distribution Reservoirs

<table>
<thead>
<tr>
<th>Reservoir</th>
<th>Storage</th>
<th>Operating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MG</td>
<td>Capacity</td>
</tr>
<tr>
<td>Today</td>
<td>335</td>
<td>720</td>
</tr>
<tr>
<td>Total Previous Day</td>
<td>318</td>
<td></td>
</tr>
<tr>
<td>Total Change</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>

### Water Production

- Lafayette WTP: 0 Million Capacity
- Orinda WTP: 84 Gallons MGD
- San Pablo WTP: 0 Gallons MGD
- Sobrante WTP: 38.8 Gallons MGD
- Upper San Leandro WTP: 0 Gallons MGD
- Walnut Creek WTP: 35.7 Gallons MGD

### Total Surface Production

- 158.5 Million Capacity
- Change: 17
- Wash Water: 0.6

### System Demand

- 141.3
- 32.5
- 108.8

## Raw Water Transmission

<table>
<thead>
<tr>
<th>Input</th>
<th>Ac-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Briones Res.</td>
<td>0</td>
</tr>
<tr>
<td>San Pablo Res.</td>
<td>15 122</td>
</tr>
<tr>
<td>U. San Leandro</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>15 273</td>
</tr>
</tbody>
</table>

## Remarks

- WID Canal Diversion = 0 cfs
- Mokelumne River below WID = 307 cfs

## Precipitation (Inches)

<table>
<thead>
<tr>
<th>Station</th>
<th>This Year</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Today</td>
<td>Month</td>
</tr>
<tr>
<td>USL WTP</td>
<td>9.93</td>
<td>16.34</td>
</tr>
<tr>
<td>Orinda WTP</td>
<td>11.43</td>
<td>20.37</td>
</tr>
<tr>
<td>Lafayette Reservoir</td>
<td>7.75</td>
<td>18.16</td>
</tr>
<tr>
<td>Walnut Creek WTP</td>
<td>9.3</td>
<td>14.96</td>
</tr>
<tr>
<td>Camp Pardee</td>
<td>9.03</td>
<td>12.94</td>
</tr>
<tr>
<td>Salt Springs P.H.</td>
<td>0.08</td>
<td>17.13</td>
</tr>
</tbody>
</table>

## Caples Lake (7,830 Ft) Data

- Snow Depth: 8 Inches
- Water Content: 5.2 Inches

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**EAST BAY MUNICIPAL UTILITY DISTRICT**
Social Media Update

Board of Directors

February 13, 2018
Why Social Media is Important for EBMUD

THE VALUE OF SOCIAL

- CUSTOMER ENGAGEMENT
- EMERGENCY PREP & RESPONSE
- BRAND REPUTATION
- DATA DRIVEN COMMUNICATIONS
With 4,200 miles of pipe, we're committed to increasing the number of miles of pipe we replace each year. #ReBuild

ow.ly/F51q30ct9kq

Ever wonder where your @ebmud #water comes from? The answer is right here: ow.ly/DxoD30gyGkI

Flush fact: EBMUD treats wastewater for 680,000 people in the #EastBay. That's 50 million gallons of sewage every day!
Managing the Message

- Rate Increases
- Water quality issues
- Customer Concerns
- Water Outages

@ebmud voted 6 to 1 to approve rates that invest in replacing aging pipelines & rehab water treatment plants, pumping plants & reservoirs.

“As a public not-for-profit agency, we work hard to make smart decisions with the dollars entrusted to us by our customers.

We don’t take the decision to raise rates lightly, but these are challenging times and we have to make difficult decisions in order to support the public health of our East Bay customers.”

EBMUD Board President Lesa McIntosh

We are taking important steps to address a lingering effect of the drought. Learn more: ow.ly/4p7x30cBpOO @DenisCuff @EastBayTimes

While EBMUD drinking water quality remains in full compliance with all state and federal regulations, EBMUD is taking action to address a lingering effect of the drought -- elevated levels of disinfection byproducts.
### 2017 Highlights

<table>
<thead>
<tr>
<th>Audience</th>
<th>Savvy users, law makers, reporters, public agencies, customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Followers</td>
<td>2,025 (30% ↑ over 2016)</td>
</tr>
<tr>
<td>Engagement</td>
<td>Link clicks to ebmud.com: 92% ↑  Likes: 180% ↑</td>
</tr>
</tbody>
</table>
| Content           | • Feature EBMUD’s diversity of work and critical 24/7 water & wastewater operations.  
                    • Customer Pipeline, Splashes, On the Job profiles, events and emerging issues. |

**Most popular Tweet**

Awesome #timelapse video of @ebmud’s new Summit Reservoir in the #Berkeley Hills. @berkeleyside @abc7newsbayarea @EastBayTimes

**#1 Tweet in 2017**

• Views: 1,120  
• Impressions: 6,600
On the Job Profiles

- Posted on Twitter, LinkedIn and ebmud.com
- 45 profiles in 2017
- Highlights the District’s workforce and critical 24/7 operations.
- 2,500 unique page views to ebmud.com/OntheJob
## 2017 Highlights

### Audience
- Customers, Government agencies

### Members
- 286,000

### Posts published
- 45 posts (closed replies)

### Engagement
- Over 1,200 Thanks. Closed responses.

### Content
- Construction updates
- Emerging issues
- Customer Pipeline

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**#1 Post in 2017**
- John Muir Land Trust and EBMUD land partnership announcement
- 450 Thanks

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1,000+ acres of Bay Area watershed lands, preserved forever!

**EBMUD Public Affairs** from East Bay Municipal Utility District • 16 Mar

Hello East Bay. In order to provide high-quality drinking water to our customers, EBMUD carefully manages tens of thousands of acres of pristine watershed lands here in the East Bay and in the Sierra foothills. To that end, EBMUD recently acquired 604 acres of watershed land in Lamorinda by designating another 430 acres in Pinole as a conservation bank, find out more at www.ebmud.com/about-
# 2017 Highlights

## 2017 Growth

<table>
<thead>
<tr>
<th>Audience</th>
<th>Business relationships, Job candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Followers</td>
<td>3,800</td>
</tr>
<tr>
<td>Engagement</td>
<td>• 233,000/year Impressions</td>
</tr>
<tr>
<td></td>
<td>• 1,000 likes</td>
</tr>
<tr>
<td></td>
<td>• 4,000 clicks on links to ebmud.com</td>
</tr>
<tr>
<td>Content</td>
<td>On the job profiles</td>
</tr>
<tr>
<td></td>
<td>Job postings and career fairs</td>
</tr>
</tbody>
</table>

# #1 Post in 2017
- Impressions: 3,600
- Clicks: 91
### Audience
- Customers that care about water and waste water.

### Content
- Developed content

### Followers
- Goal: 800 followers

### Launch Plan
- March 2018
- Repurpose content.
- Increase monitoring during business hours.
- Respond to comments in a timely manner.
- Social ads
Assess response
+ If positive, affirm.
– If negative, monitor, correct facts or fix.
Next steps & questions

#GOALS

- Grow to 3,000 followers
- Launch March 2018
- Invest in social ads
- Increase engagement
- Measure growth