ALAMEDA COUNTY WATER DISTRICT

43885 So. Grimmer Boulevard
Fremont, CA  94538

OPERATIONS & WATER QUALITY COMMITTEE

AGENDA

Wednesday, August 5, 2020

4:15 p.m.

ACCESSIBLE PUBLIC MEETINGS: Upon request, ACWD will provide written agenda materials in appropriate alternative formats, or disability-related modification or accommodation, including auxiliary aids or services, to enable individuals with disabilities to participate in public meetings. Please send a written request at least 72 hours before the meeting to the District Secretary, ACWD, 43885 S. Grimmer Blvd., Fremont, CA 94538, or to gina.markou@acwd.com stating your name, mailing address, phone number, and brief description of the requested materials and preferred alternative format or auxiliary aid or service.

MEMBERS OF THE PUBLIC MAY PARTICIPATE IN THIS MEETING VIA WEBINAR https://us02web.zoom.us/j/82466043463 OR BY CALLING ANY OF THE FOLLOWING PHONE NUMBERS: 1-669-900-9128 or 1-346-248-7799 or 1-301-715-8592 FOLLOWED BY 824 6604 3463.

MEMBERS OF THE PUBLIC MAY NOT ATTEND THIS MEETING IN PERSON. DUE TO THE COVID-19 PANDEMIC AND IN ACCORDANCE WITH GOVERNOR NEWSOM’S EXECUTIVE ORDER N-25-20 WHICH SUSPENDS PORTIONS OF THE BROWN ACT, THIS MEETING WILL BE CONDUCTED BY WEBINAR/TELECONFERENCE ONLY.

1. Maintenance Projects and System Upgrades Status
   Presenter: Robert Marscheck and Dennis Kong

2. Lead Service Line Inventory Update
   Presenter: Uriel Moreno Ortiz

3. Staffing Analysis and Optimization Project Update
   Presenter: Mike Wickham

4. Public Comments

7/31/2020
Maintenance Projects and System Upgrades Status

Bob Marsheck, and Dennis Kong

August 5, 2020
Agenda

- Facilities Maint Division (FMD): Our Role
- Recently Completed Work
- Projects In Progress
- Upcoming Work
- Questions
Recently completed . . .
TP2 Shutdown March 2020

- Filter press hydraulic power unit replacement
- Drives the plate ram
- Existing was 27 years old; long lead time for parts
- New unit; parts commercially available
TP2 Shutdown March 2020

- Ozone contactor diffusers and piping
- 2 trains of 2 contactor cells each
- Corrosion and diffuser short-circuiting problems.
- Upgrade materials and diffusers to "engineer out" problems
- Upgraded one cell as proof of concept
TP2 Shutdown March 2020

- Refurbish Ozone Generators
- 5 years since refurbished during LOX upgrade
- Assessment by Ozonia/Suez in 2019
- Observed some fouling and out of service generating tubes
- Deferred due to virus travel restrictions; Rescheduled for 2021
Patterson Reservoir

- Maintain basic function of storage:
  - control water in and out
  - leak tight liner
- Reservoir Drain Valve Replacement
- Liner Inspection and Repairs
Patterson Reservoir

- Liner 15 years old; inspected while reservoir drained
- Cracks found in liner at transition to columns; stress point in liner. Otherwise the liner looked good
- Inject epoxy for underlayment support; prep and coat with polyurethane
Nearing completion . . .
Production Facilities Communications Project

• Antennas installed and links communicating at all sites
• Developing network configuration and testing. Next will begin integrating new links with existing network
Work of note coming up . . .

• Headquarters Roof Replacement

• TP2 March 2021 Shutdown
Coming up . . .

Headquarters Roof Replacement

- Existing tar and gravel roof at End of Life
- Install new Tremco roof membrane system
- Total bid costs at $1.3M vs. budgeted at $1.8M
- Board agenda item for August
TP2 Shutdown 2021

- Ozone contactor diffusers and piping
- Replace diffusers and piping in remaining 3 contactor cells
- Eliminate leak points and short circuiting
- Improve reliability of ozonation
TP2 Shutdown 2021

- Refurbish Ozone Generators
- Maintain reliability and capacity of ozone generation
- Disassemble generators, clean tubes, replace dielectric insulators and fuses as needed
Gravity Thickeners
Rake Arm & Drive Replacement

- Critical component of plant dewatering process
- Original to the plant built in 1993
- Have been operating for ~27 years
- In service 24/7 for 11 months/year
- Corrosion problems on rake arms and center shaft
- Main gear drives at end of their rated life
Gravity Thickeners – Existing Conditions
Gravity Thickeners
Rake Arm & Drive Replacement

- Complete replacement of the rotating components (rake arms, squeegees, center shaft and main gear drive)
- New rake arm assemblies of 316 stainless steel
- Materials furnished by OEM (WesTech Engineering) and installed through local representative (MISCO Water)
- Board agenda item for September
Questions
Operations & Water Quality Committee

Lead Service Line Inventory Update

July 28, 2020
Legislative Background

**SB 1398**
- Requires public water systems to compile an inventory of known lead service lines by July 1, 2018 and submit a replacement schedule of unknown service lines by July 1, 2020.
- Timeline to become public record.

**SB 427**
- Amends SB 1398.
- Clarifies, expands on definitions in SB 1398.
- Provides mechanism for enforcement.
Project Timeline

09/27/2016
- SB 1398 Approved by Gov.
- ACWD 84k Unknowns

07/01/2016
- Approvals received to plus/minus 12k.

12/2019
- Approximately 1,181 Unknowns remaining.

06/24/2020
- LSLI Replacement Schedule Submitted, 273 Unknowns.

07/20/2020
- Meeting with DDW to discuss submitted schedule.

07/21/2020
- DDW Approval of schedule received.

09/11/2017
- SB 427 Approved by Gov.

07/2019
- 8,029 Unknowns remaining.

01/2020
- Previous Committee update. 410 Unknowns.

06/24/2020
- LSLI Replacement Schedule Submitted, 273 Unknowns.

07/21/2020
- DDW Approval of schedule received.
<table>
<thead>
<tr>
<th>User Service Line location (address or general area):</th>
<th>Date user line to be replaced</th>
<th>Type of user service line (LSL, LFG, LFP, LF, USL, UF):</th>
<th>School or LCCC</th>
</tr>
</thead>
<tbody>
<tr>
<td>36894 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36884 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36874 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36854 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36834 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36864 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36844 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36742 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36730 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36718 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36824 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36814 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36804 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36798 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36754 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
<tr>
<td>36690 HAFNER ST</td>
<td>December-21</td>
<td>USL</td>
<td>NA</td>
</tr>
</tbody>
</table>
## Milestones

<table>
<thead>
<tr>
<th>Date</th>
<th>Number Of Services Scheduled to be Replaced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec-21</td>
<td>53</td>
</tr>
<tr>
<td>Dec-24</td>
<td>12</td>
</tr>
<tr>
<td>Dec-26</td>
<td>55</td>
</tr>
<tr>
<td>Dec-28</td>
<td>153</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>273</strong></td>
</tr>
</tbody>
</table>
Unknown Services Locations
QUESTIONS?
Staffing Analysis and Optimization
Project Update
Why did ACWD conduct the study in 2017?

- MSJWTP Shutdown impact on staffing needs
- Koff & Associates Organizational Assessment Report – recommended closer analysis
- Desirable outcomes:
  - Reducing overtime hours
  - Increasing morale
  - Improving succession planning
EMA Study Stated Objective

- “Reduce operator overtime hours and explore appropriate staffing levels and structure, while maintaining sufficient staffing to adequately and reliably operate ACWD’s Water Production facilities and Distribution system.”
Recommendations – Workforce and Workflow

- Combine WTPO and TFO classifications and cross train for competency
- Develop a succession plan to reduce impact from operator turnover
  - 10 operators (53%) eligible to retire in next 5 years
- Adjust supervisor workload to support more coaching and development
- Utilize environmental engineers and other technical positions to support a more flexible workforce
- Schedule for less attended for night and weekend shifts
- Review work tasks for relevance and importance: required frequency, timing, and appropriate workgroup assignment
Recommendations - Infrastructure

- Evaluate and Invest in more automated equipment and instrumentation to increase reliability and reduce confirmation sampling
- Leverage technology
  - Investigate electronic operating logs
  - Investigate mobile devices for continuous monitoring
- Invest in facility improvements to ensure reliable remote operations, and improve operational efficiencies.
Transition Plan

- Phased Approach
  - Phase I – Pre-Transition Preparation
  - Phase II – Operator cross training and initial transition
  - Phase III – Tuning and optimizing, transition substantially complete
Phase I Accomplishments

- **Staffing**
  - Re-allocated Blender WTPO shifts to WFOs and balanced workgroups
  - Added operator trainee position
  - Reduced the number of Operator positions from 21 to 19

- **Operator training**
  - Inventoryed and updated/developed SOPs
  - Cross-trained newly hired TFOs and operator trainees
  - Updated Distribution system help screens
Phase I Accomplishments - continued

- **Workflow**
  - Implemented electronic logs at production facilities
  - Conducted operator Task Assessments to prioritize work
  - Updating Operations plans

- **Infrastructure**
  - Improved solids handling controls and reliability
  - Increased B-16 reliability with PLC and power improvements
  - Improved Chlortec SCADA readback
  - Addressed numerous SCADA nuisance alarms
Challenges

- Lack of buy in from staff
- Concern that full range of facilities may be too complex for existing staff to operate
- New types of training materials and structure needed to operate facilities with a more flexible workforce
- Dedicating time for operator training
- Continuing to make system improvements which increase operator efficiency and system reliability
- Ability to dedicate staff time to make improvements while meeting daily operational commitments
Next Steps

- Complete key Phase I workflow and training elements
  - Identify and implement workflow improvements using electronic log software
  - Consolidate SOP information into new training documents to support more flexible operations
  - Create SCADA help screens for NDF and Blender
  - Evaluate and update the operator training program and structure

- Complete key Phase I infrastructure elements
  - Validate control logic at NDF and Distribution system
  - Enable remote operation of the Whitfield reservoir valves
  - Install additional ozone analyzes at WTP-2
  - Noise control modifications of the SFPUC valves at the blending facility to allow for less attended operation
Next Steps continued

- Long term effort
- Dedicating a position for two years to free up an Engineer to dedicate to this effort.
- Dedicating operator time for training
  - Working with the Operator’s Association
- Continuing to move forward
Questions?