



**BOARD MEETING AGENDA**  
**Monday, March 27, 2017**  
**Regular Meeting - 7:00 P.M.**

**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**Union Sanitary District**  
**Administration Building**  
**5072 Benson Road**  
**Union City, CA 94587**

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

Karen W. Murphy  
*Attorney*

1. Call to Order.

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2. Pledge of Allegiance.

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3. Roll Call.

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- Motion 4. Approve Minutes of the Meeting of March 13, 2017.

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- Motion 5. Approve Minutes of the Special Meeting of March 14, 2017.

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- Information 6. Monthly Operations Report for February 2017 *(to be reviewed by the Budget & Finance and Legal/Community Affairs Committees)*.

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7. Written Communications.

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8. Oral Communications.  
*The public may provide oral comments at regular and special Board meetings; however, whenever possible, written statements are preferred (to be received at the Union Sanitary District office at least one working day prior to the meeting). This portion of the agenda is where a member of the public may address and ask questions of the Board relating to any matter within the Board's jurisdiction that is not on the agenda. If the subject relates to an agenda item, the speaker should address the Board at the time the item is considered. Oral comments are limited to three minutes per individuals, with a maximum of 30 minutes per subject. Speaker's cards will be available in the Boardroom and are to be completed prior to discussion.*

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- Motion 9. Authorize the General Manager to Execute Task Order No. 2 with RMC Water and Environment for the Plant Master Plan *(to be reviewed by the Engineering and Information Technology Committee)*.

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- Motion 10. Consider a Resolution to Accept the Construction of the Plant Facilities Improvements Project from D.W. Nicholson Corporation and Authorize Recordation of a Notice of Completion *(to be reviewed by the Engineering and Information Technology Committee)*.

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- Information 11. Update of the Subsurface Investigation at the Alvarado Wastewater Treatment Plant *(to be reviewed by the Engineering and Information Technology Committee)*.

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- Information 12. Report on the East Bay Dischargers Authority (EBDA) Meeting of March 16, 2017.

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- Information 13. Check Register.
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- Information 14. Committee Meeting Reports. *(No Board action is taken at Committee meetings):*
- a. Legal/Community Affairs Committee – Wednesday, March 22, 2017, at 1:00 p.m.
    - Director Handley and Director Lathi
  - b. Budget & Finance Committee – Thursday, March 23, 2017, at 3:00 p.m.
    - Director Handley and Director Lathi
  - c. Engineering and Information Technology Committee – Friday, March 24, 2017, at 9:30 a.m.
    - Director Kite and Director Toy
  - d. Personnel Committee – will not meet.
  - e. Audit Committee – will not meet.
  - f. Legislative Committee – will not meet.
  - g. Ad Hoc Subcommittee for Communications Strategy.
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- Information 15. General Manager’s Report. *(Information on recent issues of interest to the Board).*
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16. Other Business:
- a. Comments and questions. *Directors can share information relating to District business and are welcome to request information from staff.*
  - b. Scheduling matters for future consideration.
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17. Adjournment – The Board will adjourn to the next Regular Meeting in the Boardroom on Monday, April 10, 2017, at 7:00 p.m.

The Public may provide oral comments at regular and special Board meetings; however, whenever possible, written statements are preferred (to be received at the Union Sanitary District at least one working day prior to the meeting).  
 If the subject relates to an agenda item, the speaker should address the Board at the time the item is considered. If the subject is within the Board’s jurisdiction but not on the agenda, the speaker will be heard at the time “Oral Communications” is calendared. Oral comments are limited to three minutes per individual, with a maximum of 30 minutes per subject. Speaker’s cards will be available in the Boardroom and are to be completed prior to discussion of the agenda item.

The facilities at the District Offices are wheelchair accessible. Any attendee requiring special accommodations at the meeting should contact the General Manager’s office at (510) 477-7503 at least 24 hours in advance of the meeting.

THE PUBLIC IS INVITED TO ATTEND



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**LEGAL/COMMUNITY AFFAIRS COMMITTEE MEETING**  
Committee Members: Director Handley and Director Lathi

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

**AGENDA**  
**Wednesday, March 22, 2017**  
**1:00 P.M.**

Karen W. Murphy  
*Attorney*

**Alvarado Conference Room**  
**5072 Benson Road**  
**Union City, CA 94587**

1. Call to Order

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2. Roll Call

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3. Public Comment

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4. Items to be reviewed for the Board meeting of March 27, 2017:
  - February 2017 Monthly Operations Report – Odor Report and Work Group reports

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5. Adjournment

Items reviewed at committee meetings will be included in the agenda packet for the upcoming Board meeting. No action will be taken at committee meetings.

The Public may provide oral comments at regular and special Board meetings; however, whenever possible, written statements are preferred (to be received at the Union Sanitary District at least one working day prior to the meeting).

If the subject relates to an agenda item, the speaker should address the Board at the time the item is considered. If the subject is within the Board's jurisdiction but not on the agenda, the speaker will be heard at the time "Public Comment" is calendared. Oral comments are limited to three minutes per individual, with a maximum of 30 minutes per subject. Speaker's cards will be available and are to be completed prior to discussion of the agenda item.

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THE PUBLIC IS INVITED TO ATTEND



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**BUDGET & FINANCE COMMITTEE MEETING**  
Committee Members: Director Handley and Director Lathi

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

**AGENDA**  
**Thursday, March 23, 2017**  
**3:00 p.m.**

Karen W. Murphy  
*Attorney*

**Alvarado Conference Room**  
**5072 Benson Road**  
**Union City, CA 94587**

**THIS MEETING WILL BE TELECONFERENCED WITH DIRECTOR HANDLEY AND DIRECTOR LATHI  
FROM 43225 MISSION BOULEVARD, FREMONT, CALIFORNIA.  
THE TELECONFERENCE LOCATION SHALL BE ACCESSIBLE TO THE PUBLIC.**

1. Call to Order  
\_\_\_\_\_
2. Roll Call  
\_\_\_\_\_
3. Public Comment  
\_\_\_\_\_
4. Items to be reviewed for the Board meeting of March 27, 2017:
  - February 2017 Monthly Operations Report – Financial Reports\_\_\_\_\_
5. Adjournment  
\_\_\_\_\_

Items reviewed at committee meetings will be included in the agenda packet for the upcoming Board meeting. No action will be taken at committee meetings.

The Public may provide oral comments at regular and special Board meetings; however, whenever possible, written statements are preferred (to be received at the Union Sanitary District at least one working day prior to the meeting).

If the subject relates to an agenda item, the speaker should address the Board at the time the item is considered. If the subject is within the Board's jurisdiction but not on the agenda, the speaker will be heard at the time "Public Comment" is calendared. Oral comments are limited to three minutes per individual, with a maximum of 30 minutes per subject. Speaker's cards will be available and are to be completed prior to discussion of the agenda item.

The facilities at the District Offices are wheelchair accessible. Any attendee requiring special accommodations at the meeting should contact the General Manager's office at (510) 477-7503 at least 24 hours in advance of the meeting.

**THE PUBLIC IS INVITED TO ATTEND**



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**ENGINEERING & INFORMATION TECHNOLOGY  
COMMITTEE MEETING**  
Committee Members: Director Kite and Director Toy

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

**AGENDA**  
**Friday, March 24, 2017**  
**9:30 A.M.**

Karen W. Murphy  
*Attorney*

**Alvarado Conference Room**  
**5072 Benson Road**  
**Union City, CA 94587**

**THIS MEETING WILL BE TELECONFERENCED WITH DIRECTOR KITE FROM THE EXTERIOR OF  
35040 NEWARK BOULEVARD, NEWARK, CALIFORNIA.  
THE TELECONFERENCE LOCATION SHALL BE ACCESSIBLE TO THE PUBLIC.**

1. Call to Order

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2. Roll Call

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3. Public Comment

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4. Items to be reviewed for the Board meeting of March 27, 2017:
  - Authorize the General Manager to Execute Task Order No. 2 with RMC Water and Environment for the Plant Master Plan
  - Consider a Resolution to Accept the Construction of the Plant Facilities Improvements Project from D.W. Nicholson Corporation and Authorize Recordation of a Notice of Completion
  - Update of the Subsurface Investigation at the Alvarado Wastewater Treatment Plant

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5. Adjournment

Items reviewed at committee meetings will be included in the agenda packet for the upcoming Board meeting. No action will be taken at committee meetings. The Public may provide oral comments at regular and special Board meetings; however, whenever possible, written statements are preferred (to be received at the Union Sanitary District at least one working day prior to the meeting). If the subject relates to an agenda item, the speaker should address the Board at the time the item is considered. If the subject is within the Board's jurisdiction but not on the agenda, the speaker will be heard at the time "Public Comment" is calendared. Oral comments are limited to three minutes per individual, with a maximum of 30 minutes per subject. Speaker's cards will be available and are to be completed prior to discussion of the agenda item.

The facilities at the District Offices are wheelchair accessible. Any attendee requiring special accommodations at the meeting should contact the General Manager's office at (510) 477-7503 at least 24 hours in advance of the meeting.

THE PUBLIC IS INVITED TO ATTEND

**MINUTES OF THE MEETING OF THE  
BOARD OF DIRECTORS OF  
UNION SANITARY DISTRICT  
March 13, 2017**

**CALL TO ORDER**

President Handley called the meeting to order at 7:00 p.m.

**PLEDGE OF ALLEGIANCE**

**ROLL CALL**

PRESENT: Tom Handley, President  
Pat Kite, Vice President  
Anjali Lathi, Secretary  
Manny Fernandez, Director  
Jennifer Toy, Director

ABSENT: None

STAFF: Paul Eldredge, General Manager  
Karen Murphy, District Counsel  
Sami Ghossain, Technical Services Manager  
James Schofield, Collection Services Manager  
Pamela Arends-King, Business Services Manager/CFO  
Armando Lopez, Treatment & Disposal Services Manager  
Robert Simonich, Fabrication, Maintenance, and Construction Manager  
Michael Dunning, Environmental Compliance Coach  
Curtis Bosick, Associate Engineer  
Michelle Powell, Communications and Intergovernmental Relations Coordinator  
Regina McEvoy, Executive Assistant to the General Manager/Board Clerk

VISITORS: PG&E Customer Relations Manager Allan Lacson  
PG&E Supervisor of Industrial Business Energy Solutions Chester Livingston

**APPROVAL OF THE MINUTES OF THE MEETING OF FEBRUARY 27, 2017**

It was moved by Vice President Kite, seconded by Director Fernandez, to approve the Minutes of the Meeting of February 27, 2017. Motion carried unanimously.

**APPROVAL OF THE MINUTES OF THE SPECIAL MEETING OF MARCH 6, 2017**

It was moved by Vice President Kite, seconded by Director Toy, to approve the Minutes of the Special Meeting of March 6, 2017. Motion carried unanimously.

## **PG&E STAFF TO PRESENT CALIFORNIA PERFORMANCE OPTIMIZATION PROGRAM INCENTIVE CHECK**

General Manager Eldredge introduced PG&E Customer Relations Manager Allan Lacson and PG&E Supervisor of Industrial Business Energy Solutions Chester Livingston. The Board was presented with a check for the District's High Speed Aeration Blower Project.

President Handley recessed the meeting at 7:04 p.m. for a brief photo session with PG&E staff.

President Handley reconvened the meeting at 7:08 p.m.

## **MONTHLY OPERATIONS REPORT FOR JANUARY 2017**

This item was reviewed by the Legal/Community Affairs and Budget & Finance Committees. General Manager Eldredge reported the following:

- Odor Complaints: There was one odor complaint received by Collection Services in January 2017. Details regarding the complaint were included in the Board meeting packet.
- The Cogen system produced 74% of power consumed for the month of January 2017.

Business Services Manager/CFO Arends- King reported the following:

- Revenues:
  - Received \$1.2 million in capacity fees from William Lyon Homes, and \$220,000 in capacity fees from Pulte Homes Corporation for the Peralta Crossing Development in Fremont.
- Expenses:
  - Expenses for all Work Groups were at or below budget.

General Manager Eldredge stated Monthly Operations Reports for each work group were included in the Board meeting packet.

## **WRITTEN COMMUNICATIONS**

There were no written communications.

## **ORAL COMMUNICATIONS**

There were no oral communications.

## **CONSIDER A RESOLUTION TO ACCEPT THE CONSTRUCTION OF THE NEWARK BACKYARD SANITARY SEWER RELOCATION PROJECT – PHASE 3 FROM MCGUIRE AND HESTER AND AUTHORIZE RECORDATION OF A NOTICE OF COMPLETION**

This item was reviewed by the Engineering and Information Technology Committee. Technical Services Manager Ghossain stated this item was the third and final phase of the project to relocate laterals and sewer mains for portions of the City of Newark. Phase

3 included relocation of 100 sanitary sewer laterals to new sanitary sewer mains constructed within the public right-of-way on Bonnie Street, Christine Court, Noel Avenue, Wilma Avenue, and parts of Zulmida Avenue in the City of Newark. Design for the Project was completed in March 2016 by West Yost & Associates. Harris and Associates provided construction management services for the Project. The Project was constructed by McGuire and Hester, and was substantially completed on October 7, 2016. Staff recommended the Board consider a resolution to accept the construction of the Newark Backyard Sanitary Sewer Relocation Project – Phase 3 from McGuire and Hester and authorize recordation of a Notice of Completion.

It was moved by Vice President Kite, seconded by Secretary Lathi, to Adopt Resolution No. 2802, Accepting the Construction of the Newark Backyard Sanitary Sewer Relocation Project – Phase 3 from McGuire and Hester, Located in the City of Newark, California. Motion carried unanimously.

**CONSIDER A RESOLUTION TO QUITCLAIM PORTIONS OF SANITARY SEWER EASEMENTS LOCATED IN TRACT 1188, TRACT 1276, AND TRACT 1251 IN THE CITY OF NEWARK IN CONJUNCTION WITH THE NEWARK BACKYARD SANITARY SEWER RELOCATION PROJECT**

This item was reviewed by the Legal/Community Affairs Committee. Technical Services Manager Ghossain stated the purpose of the Project was to relocate the sewer laterals from backyard sewer mains to new sewer mains located in the streets fronting the homes. A total of 200 sewer laterals were relocated between the three phases of the Newark Backyard Sanitary Sewer Relocation Project. The new laterals were installed, the old sewer mains were abandoned, and the corresponding easements are ready to be quitclaimed. Staff recommended the Board consider a resolution to quitclaim portions of six-foot wide sanitary sewer easements located in Tract 1188, Tract 1276, and Tract 1251 in the City of Newark, associated with the completion of the Newark Backyard Sanitary Sewer Relocation Project – Phase 3.

It was moved by Director Toy, seconded by Secretary Lathi, to Adopt Resolution No. 2803, Quitclaiming Portions of 6-Foot Wide Sanitary Sewer Easements in Tract 1188, Tract 1276, and Tract 1251, in Conjunction with the Newark Backyard Sanitary Sewer Relocation Project – Phase 3, Located in the City of Newark, California. Motion carried unanimously.

**AUTHORIZE THE GENERAL MANAGER TO EXECUTE A PIPELINE CROSSING AGREEMENT WITH THE UNION PACIFIC RAILROAD COMPANY, AND A PIPELINE CROSSING COSTS FUNDING AND REIMBURSEMENT AGREEMENT WITH FREMONT PAT RANCH LLC FOR THE PATTERSON RANCH DEVELOPMENT IN THE CITY OF FREMONT**

This item was pulled from the agenda.

## **REVIEW AND CONSIDER APPROVAL OF PUBLICLY AVAILABLE PAY SCHEDULE**

This item was reviewed by the Personnel Committee. Business Services Manager/CFO Arends-King stated the publicly available pay schedule is mandated by CalPERS to ensure consistency between CalPERS employers, and enhance disclosure and transparency of public employee compensation. Staff recommended the Board approve the District's publicly available pay schedule, effective March 1, 2017.

It was moved by Director Toy, seconded by Director Fernandez, to Approve the Publicly Available Pay Schedule Effective March 1, 2017 with the addition of language to clarify the pay schedule reflects bi-weekly compensation. Motion carried unanimously.

## **CONSIDER APPROVAL OF A STRATEGIC COMMUNICATION PLAN AND REBRANDING INITIATIVE**

General Manager Eldredge stated the Board formed an Ad Hoc Subcommittee for Communications Strategy in February 2016. The Ad Hoc met several times over a twelve month period to discuss and provide staff direction regarding development of a comprehensive communication strategy that would include social media. Staff prepared a Draft Strategic Communication Plan, which was reviewed by the Board at a workshop in January. The workshop included a discussion which resulted in the Board directing staff to separate the rebranding initiative component from the Draft Strategic Communication Plan. General Manager Eldredge requested the Board consider approval of the Draft Strategic Communication Plan, decide if and when the Plan should be implemented, and provide direction regarding the level of priority for the Rebranding Initiative.

Communications and Intergovernmental Relations Coordinator Powell stated it was staff's recommendation that if the Board would like the Rebranding Initiative to take precedence, the implementation of the Strategic Communication Plan should be limited to the items outlined in the staff report.

General Manager Eldredge requested the Board provide clarification regarding the essential elements of the Rebranding Initiative. Staff's interpretation of the feedback received at the Board workshop was to consider the following: a refresh of the District logo, a different color palate, use of a shorthand name, and creation of a tagline.

General Manager Eldredge and Communications and Governmental Relations Coordinator Powell stated that changes to the existing Rebranding Initiative would affect the timeline included in the Board meeting packet.

General Manager Eldredge noted that other agencies have begun the rebranding process by the use of focus groups to quantify customer satisfaction and understanding of the given agency's function. The Board agreed by consensus that external focus groups would not be necessary to begin the rebranding process.

Director Toy suggested staff consider preparing a survey to gauge customer expectations to be integrated into the District's Centennial Open House celebration in May 2018.

General Manager Eldredge stated it is the intent that internal stakeholders would be involved during the rebranding process. Staff will provide updates to the Board regarding the Rebranding Initiative timeline and budget, and would seek further Board direction as needed.

It was moved by Secretary Lathi, seconded by Director Toy, to Approve the Strategic Communication Plan, Implement the Limited Version of the Strategic Communication Plan Included in the Staff Report, Declare the Rebranding Initiative as the Higher Priority, Direct Staff to Broaden the Approach of the Rebranding Initiative to Provide Greater Flexibility, and Proceed with the Rebranding Initiative using the Schedule Included in the Board Meeting Packet. Motion carried unanimously.

### **INFORMATION ITEMS:**

#### **Medication Take Back Pilot Program Update**

Environmental Compliance Coach Dunning stated the District began operating a Medication Take Back Pilot program in 2006, and collected and safely disposed of over nine tons of expired or unused medications. The program began with one day take back events at local pharmacies, and grew to include the setup of drop off bins for the disposal of unused and expired prescription and non-prescription medication. District staff promoted the program through outreach events and a campaign to educate the public regarding the program. The Alameda County Safe Drug Disposal Ordinance, adopted in 2012, requires pharmaceutical manufacturers to take responsibility for the disposal of unused and expired medications sold in Alameda County. The Ordinance was the first of its kind in the country and was unsuccessfully challenged in court before the Alameda County Environmental Health Department was tasked with implementing the Ordinance in 2015. The MED Project LLC was created by the pharmaceutical industry to meet the requirements of the Ordinance. As of January 2017, there were 10 medication collection kiosks operated by the MED Project LLC in Alameda County. Moving forward, the cost, day to day operations, and oversight of the program will be handled by the MED Project LLC. Union Sanitary District will continue to participate in the Alameda MEDS Coalition to support implementation and expansion of the take back program.

#### **Check Register**

All questions were answered to the Board's satisfaction.

#### **COMMITTEE MEETING REPORTS:**

The Budget & Finance Committee, Legal/Community Affairs, Engineering and Information Technology, and Personnel Committees met.

#### **GENERAL MANAGER'S REPORT:**

General Manager Eldredge reported the following:

- The District Messaging Board Workshop will be held in the Boardroom at 6:00 p.m. on March 14, 2017.
- The City of Fremont State of the City Luncheon will be held March 31, 2017.
- Treatment & Disposal Services Manager Lopez returned to the office after attending the 2017 Water and Wastewater Leadership Center two week program.
- Recognized Associate Engineer Curtis Bosick in the audience.

**OTHER BUSINESS:**

Vice President Kite stated she attended the Alameda County Science and Engineering Fair.

Director Toy stated she attended the recent Alameda County Water District Financing Authority meeting.

**ADJOURNMENT:**

The meeting was adjourned at 7:56 p.m. to the District Messaging Board Workshop in the Boardroom on Tuesday, March 14, 2017, at 6:00 p.m.

The Board will then adjourn to the next scheduled Regular Board Meeting to be held in the Boardroom on Monday, March 27, 2017, at 7:00 p.m.

SUBMITTED:

ATTEST:

\_\_\_\_\_  
REGINA McEVOY  
BOARD CLERK

\_\_\_\_\_  
ANJALI LATHI  
SECRETARY

APPROVED:

\_\_\_\_\_  
TOM HANDLEY  
PRESIDENT

Adopted this 27<sup>th</sup> day of March, 2017

**MINUTES OF THE SPECIAL MEETING OF THE  
BOARD OF DIRECTORS OF  
UNION SANITARY DISTRICT  
March 14, 2017**

**CALL TO ORDER**

President Handley called the special meeting to order at 6:10 p.m.

**ROLL CALL**

PRESENT: Tom Handley, President  
Pat Kite, Vice President  
Anjali Lathi, Secretary  
Manny Fernandez, Director  
Jennifer Toy, Director

STAFF: Paul Eldredge, General Manager/District Engineer  
Pamela Arends-King, Business Services Manager/CFO  
James Schofield, Collection Services Manager  
Robert Simonich, Fabrication, Maintenance, and Construction Manager  
Sami Ghossain, Technical Services Manager  
Armando Lopez, Treatment & Disposal Services Manager  
Michelle Powell, Communications and Intergovernmental Relations Coordinator

VISITOR: Scott Summerfield, SAE Communications

**PUBLIC COMMENT**

There was no public comment.

**BOARD WORKSHOP**

Mr. Summerfield presented information related to development of district messaging to the Board, and responded to questions.

**ADJOURNMENT:**

The special meeting was adjourned at approximately 7:40 p.m. to the next Regular Board Meeting in the Boardroom on Monday, March 27, 2017, at 7:00 p.m.

SUBMITTED:

ATTEST:

\_\_\_\_\_  
REGINA McEVOY  
BOARD CLERK

\_\_\_\_\_  
ANJALI LATHI  
SECRETARY

APPROVED:

\_\_\_\_\_  
TOM HANDLEY  
PRESIDENT

Adopted this 27<sup>th</sup> day of March, 2017



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

Karen W. Murphy  
*Attorney*

**DATE:** March 20, 2017

**MEMO TO:** Board of Directors - Union Sanitary District

**FROM:** Paul R. Eldredge, General Manager/District Engineer

**SUBJECT:** Agenda Item No. 6 - Meeting of March 27, 2017  
Information Item: **Monthly Operations Report for February 2017**

### Background

Attached are Monthly Operations Reports for February 2017. Staff is available to answer questions regarding information contained in the report.

### Work Group Managers

General Manager/Administration	Paul Eldredge	GM
Business Services	Pamela Arends-King	BS
Collection Services	James Schofield	CS
Technical Support	Sami Ghossain	TS
Treatment and Disposal Services	Armando Lopez	T&D
Fabrication, Maintenance, and Construction	Robert Simonich	FMC

### ODOR COMPLAINTS:

There was one odor complaint received by Collection Services and one odor complaint received by the Treatment Plant. Details regarding both complaints were included in the Board meeting packet.

### SAFETY:

- There were no injuries in February 2017.
- No employees were off work or on modified work from work related injuries.
- There were 2 incidents. A contractor cut into live electrical conduit. An employee was involved in a minor traffic accident.

## **STAFFING & PERSONNEL:**

### **Completed Recruitments Resulting in Promotions:**

- Virginia Holslag – Accounting and Financial Analyst I – effective 2/19/17

### **Other Completed Recruitments:**

- Acting Lead Pool for CSW – No one hired.

### **Recruitments Opened:**

- Chemist I/II

### **Continuing Recruitments:**

- Senior Accounting and Financial Analyst

### **Other Accomplishments:**

- DISC training was conducted for all Coaches and Managers

## **G.M. ACTIVITIES:** For the month of February, the GM was involved in the following:

- Participated in DISC training with Coaches and Managers
- Attended East Bay Dischargers Authority (EBDA) Strategic Planning Meeting
- Attended EBDA Managers Advisory Committee Meeting
- Attended EBDA Commission Meeting

Attachments: Odor Report and Map  
Hours Worked and Leave Time by Work Group  
Financial Reports  
Business Services  
Technical Services  
Collection Services  
Fabrication, Maintenance, and Construction  
Treatment and Disposal Services



**ODOR REPORT  
February 2017**

**Collection Services**

During the recording period from February 01, 2017 through February 28, 2017, there was one odor related service request received by Collection Services.

**City: Fremont**

**1. Complaint Details:**

<i>Date:</i> 2/22/2017	<i>Time:</i> 12:26 pm
<i>Location:</i> STIVERS ST	<i>Reported By:</i> Ann Sharkey
<i>Wind (from):</i> N/A	<i>Wind Speed:</i> 14 mph
<i>Temperature:</i> 52 Degrees F	<i>Weather:</i> Nice

**Response and Follow-up:**

We inspected sewer mains, drain inlets and storm lines in the area. We were unable to detect any sewer related odors. We relayed our findings to the reporting party and asked them to call us back should any odors return.

**Treatment Plant (Union City)**

During the recording period from February 01, 2017 through February 28, 2017, there was one odor related service request received by the Treatment Plant.

**1. Complaint Details:**

<i>Date:</i> 2/24/2017	<i>Time:</i> 10:15 pm
<i>Location:</i> MACKINAW ST	<i>Reported By:</i> Sam Dua
<i>Wind (from):</i> West	<i>Wind Speed:</i> 2 mph
<i>Temperature:</i> 45 Degrees F	<i>Weather:</i> Cloudy
<i>Tide Information:</i>	
<i>High Tide Reading:</i> 6.3 FT/Time	<i>Low Tide Reading:</i> 0.6 FT/Time
<i>High Tide Time:</i> 10:38 AM	<i>Low Tide Time:</i> 6:41 AM

**Response and Follow-up:**

- *USD Staff dispatched to complaint location?* Yes
- *Were any odors detected at the complaint location?* Yes
  - *If yes, was odor attributed to USD?* No
- *Were any odors detected at the Plant?* Yes
  - *If yes, what odors were found?* Detected a wetlands odor. Also, detected a wet ranchland odor emanating from the animal enclosure adjacent to the Plant.
- *Additional Information:* None



**Legend**

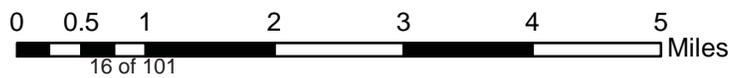
**Odor Complaints: February 2017**

- ^ Odor found, USD resolved (0)
- ! Odor found, not related to USD (1)
- # No odor found (1)

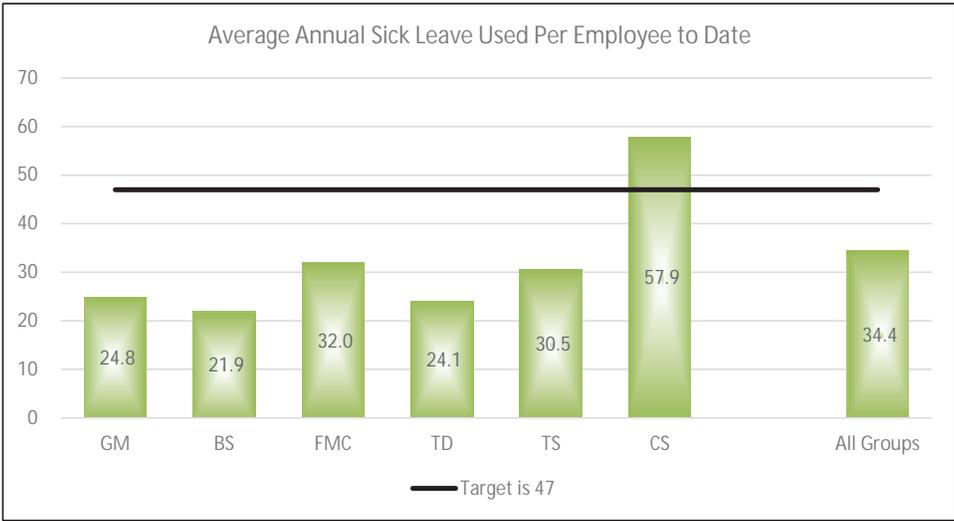
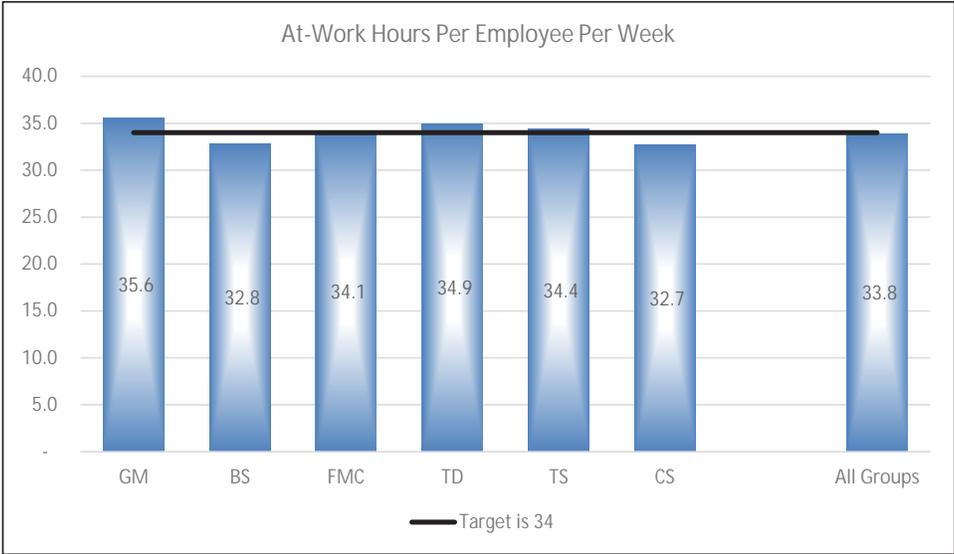
**Odor Complaints: Mar. 2016 to Jan. 2017**

- ^ Odor found, USD resolved (9)
- ! Odor found, not related to USD (7)
- # No odor found (12)

**Location of Odor Reports  
March 2016 to February 2017**



**HOURS WORKED AND LEAVE TIME BY WORK GROUP**  
**June 30, 2016 through February 22, 2017**  
**Weeks to Date: 34 out of 52 (65.38%)**



**NOTES**

- (1) Regular hours does not include hours worked by part-time or temporary employees.
- (2) Overtime hours includes call outs.
- (3) Discretionary Leave includes Vacation, HEC, Holiday, MAL, FLEX, Funeral, Jury Duty, Military, OT Banked Use, Paid Admin., SLIP, VRIP, Holiday Banked Use leaves.
- (4) Sick Leave includes sick and catastrophic sick leaves as well as protected time off, of which the District has no discretion.

An employee using 15 vacation, 11 holiday, 2 HEC, and 5 sick days will work an average of **34.9** hours per week over the course of a year; with 20 vacation days, **34.2** hours per week.

**HOURS WORKED AND LEAVE TIME BY WORK GROUP**

June 30, 2016 through February 22, 2017

Weeks to Date: 34 out of 52 (65.38%)

Group	Average Number of Employees	AT-WORK HOURS		At-Work Hours Per Employee Per Week	LEAVE HOURS				Average Annual Sick Leave Used Per Employee To Date	FY16		
		Regular (1)	Overtime (2)		Discretionary (3)	Short Term Disability	Workers Comp	Sick (4)		Average Number of Employees	At-Work Hours Per Week Per Employee	Annual Sick Leave Used
GM	2	2,352.50	56.75	35.6	318.00	-	-	49.50	24.8	2	36.1	40.6
BS	22	24,426.25	1.67	32.8	4,293.40	64.17	-	482.30	21.9	22	35.1	21.4
FMC	23	26,116.08	472.66	34.1	4,119.17	39.12	269.00	735.63	32.0	22	35.3	52.4
TD	27	31,218.67	670.42	34.9	4,686.64	215.34	16.50	649.85	24.1	25	35.4	49.9
TS	32	37,219.85	66.64	34.4	5,401.55	2.68	-	975.92	30.5	32	34.6	40.8
CS	32	33,716.83	1,695.94	32.7	5,897.06	533.35	-	1,852.09	57.9	31	35.1	55.0
<b>All Groups</b>	<b>138</b>	<b>155,050.18</b>	<b>2,964.08</b>	<b>33.8</b>	<b>24,715.82</b>	<b>854.66</b>	<b>285.50</b>	<b>4,745.29</b>	<b>34.4</b>	<b>134</b>	<b>35.1</b>	<b>44.5</b>

**SICK LEAVE INCENTIVE PROGRAM TARGETS**

**≥34**

**≤47**

The Sick Leave Incentive Program target goals are 47 or less hours of sick leave per employee annually, and 34 or more hours of at-work time per week per employee.

**NOTES**

(1) Regular hours does not include hours worked by part-time or temporary employees.

(2) Overtime hours includes call outs.

(3) Discretionary Leave includes Vacation, HEC, Holiday, MAL, FLEX, Funeral, Jury Duty, Military, OT Banked Use, Paid Admin., SLIP, VRIP, Holiday Banked Use leaves.

(4) Sick Leave includes sick and catastrophic sick leaves, as well as protected time off, of which the District has no discretion.

An employee using 15 vacation, 11 holiday, 2 HEC, and 5 sick days will work an average of 34.9 hours per week over the course of a year;

with 20 vacation days, 34.2 hours per week.

**BUDGET AND FINANCE REPORT**

FY 2017

**Year-to-date as of 02/28/17**

67% of year elapsed

**Revenues**

	<b>Budget</b>	<b>Actual</b>	<b>% of Budget Rec'd</b>	<b>Audited Last Year Actuals 6/30/16</b>
Capacity Fees	\$8,935,000	\$6,251,835	70%	\$7,233,337
Sewer Service Charges	50,404,690	26,733,605	53%	50,112,564
Operating (Work Groups)	1,355,000	984,216	73%	1,233,675
Interest	475,500	483,474	102%	496,439
Misc. (LAVWMA pymnt, solar, Cogen rebates)	505,000	539,275	107%	408,913
<b>Subtotal Revenues</b>	<b>\$61,675,190</b>	<b>\$34,992,404</b>	<b>57%</b>	<b>\$59,484,928</b>
SRF Loan Proceeds (Thickener Proj.)	2,800,000	2,203,296	79%	3,385,590
<b>Total Revenues + SRF Proceeds</b>	<b>\$64,475,190</b>	<b>\$37,195,700</b>	<b>58%</b>	<b>\$62,870,518</b>

**Expenses**

	<b>Budget</b>	<b>Actual</b>	<b>% of Budget Used</b>	<b>Last Year Actuals</b>
Capital Improvement Program:				
Capacity Proj.	\$4,342,500	\$2,665,372	61%	\$3,009,426
Renewal & Repl. Proj.	10,327,500	7,464,575	72%	8,494,486
Operating	34,714,533	21,096,139	61%	31,895,499
Special Projects	2,182,098	317,475	15%	707,526
Retiree Medical (ARC)	583,771	291,886	50%	561,205
Vehicle & Equipment	662,220	111,608	17%	341,967
Information Systems	1,232,100	335,749	27%	854,511
Plant & Pump Stat. R&R	250,000	183,110	73%	272,479
Emerg. Fund (Sinkhole)	0	286	0%	2,208,595
Pretreatment Fund	7,000	6,035	86%	29,249
Cty Fee for SSC Admin.	106,000	53,321	50%	105,866
Debt Servicing:				
SRF Loans	3,127,110	3,127,110	100%	3,127,110
<b>Total Expenses</b>	<b>\$57,534,832</b>	<b>\$35,652,665</b>	<b>62%</b>	<b>\$51,607,919</b>
<b>Total Revenue &amp; Proceeds less Expenses</b>	<b>\$6,940,358</b>	<b>\$1,543,034</b>		<b>\$11,262,599</b>

**Operating (Work Group) Expenses**

	<b>Budget</b>	<b>Actual</b>	<b>% of Budget Used</b>	<b>Last Year Actuals</b>
Board of Directors	\$178,500	\$84,379	47%	\$133,294
General Manager/Admin.	957,678	491,539	51%	884,051
Business Services	5,275,645	3,287,422	62%	4,772,324
Collection Services	6,296,287	3,791,748	60%	5,873,909
Technical Services	5,511,940	3,543,484	64%	5,156,725
Treatment & Disposal Services	10,631,833	6,328,653	60%	9,506,339
Fabrication, Maint. & Construction	5,862,650	3,568,914	61%	5,568,856
<b>Total</b>	<b>\$34,714,533</b>	<b>\$21,096,139</b>	<b>61%</b>	<b>\$31,895,499</b>

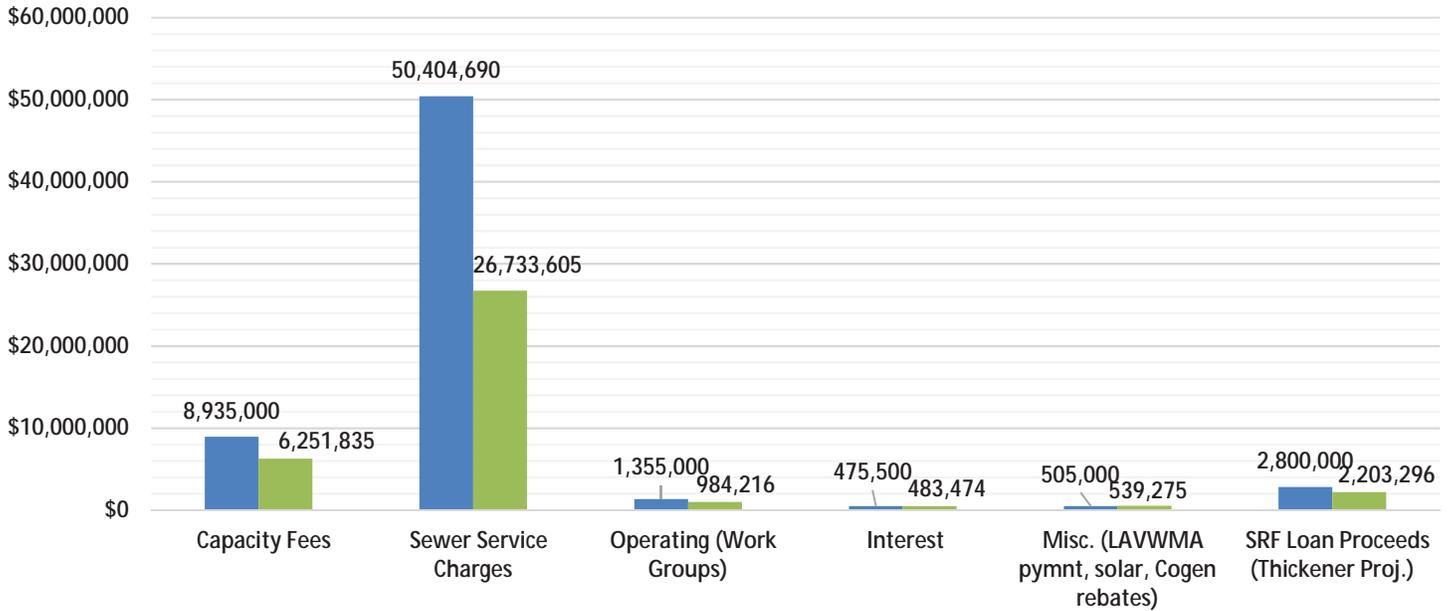
**Operating (Work Group) Expenses by Type**

	<b>Budget</b>	<b>Actual</b>	<b>% of Budget Used</b>	<b>Last Year Actuals</b>
Personnel (incl D&E)	\$23,912,246	\$14,945,108	62%	\$22,107,543
Repairs & Maintenance	2,022,630	1,263,437	62%	1,965,202
Supplies & Matls (chemicals, small tools)	2,424,140	1,262,463	52%	2,273,252
Outside Services (utilities, biosolids, legal)	6,029,045	3,625,117	60%	5,342,319
Fixed Assets	326,472	14	0%	207,183
<b>Total</b>	<b>\$34,714,533</b>	<b>\$21,096,139</b>	<b>61%</b>	<b>\$31,895,499</b>

**REVENUES AND EXPENSES REPORT**  
as of 2/28/17

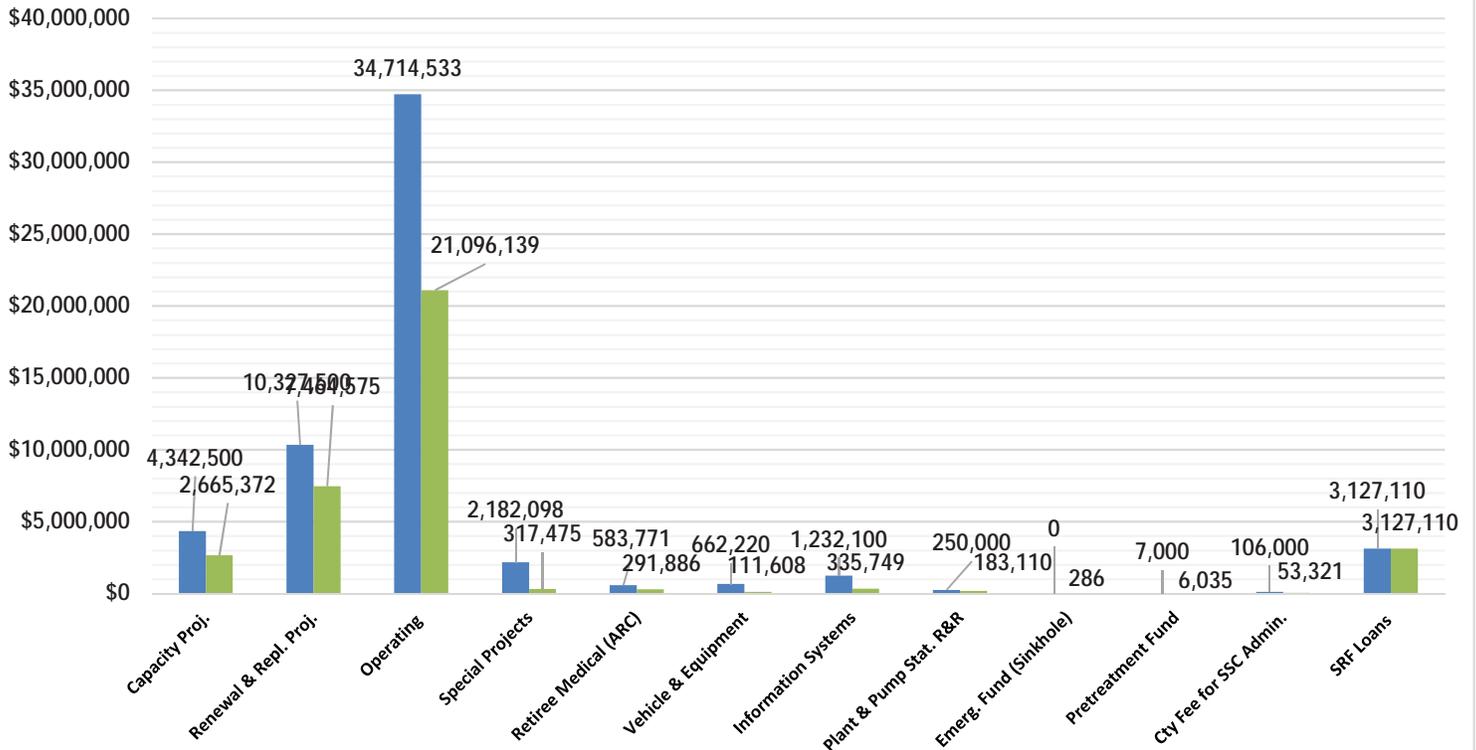
## Total Revenues

■ Budget ■ Actual



## Total Expenses

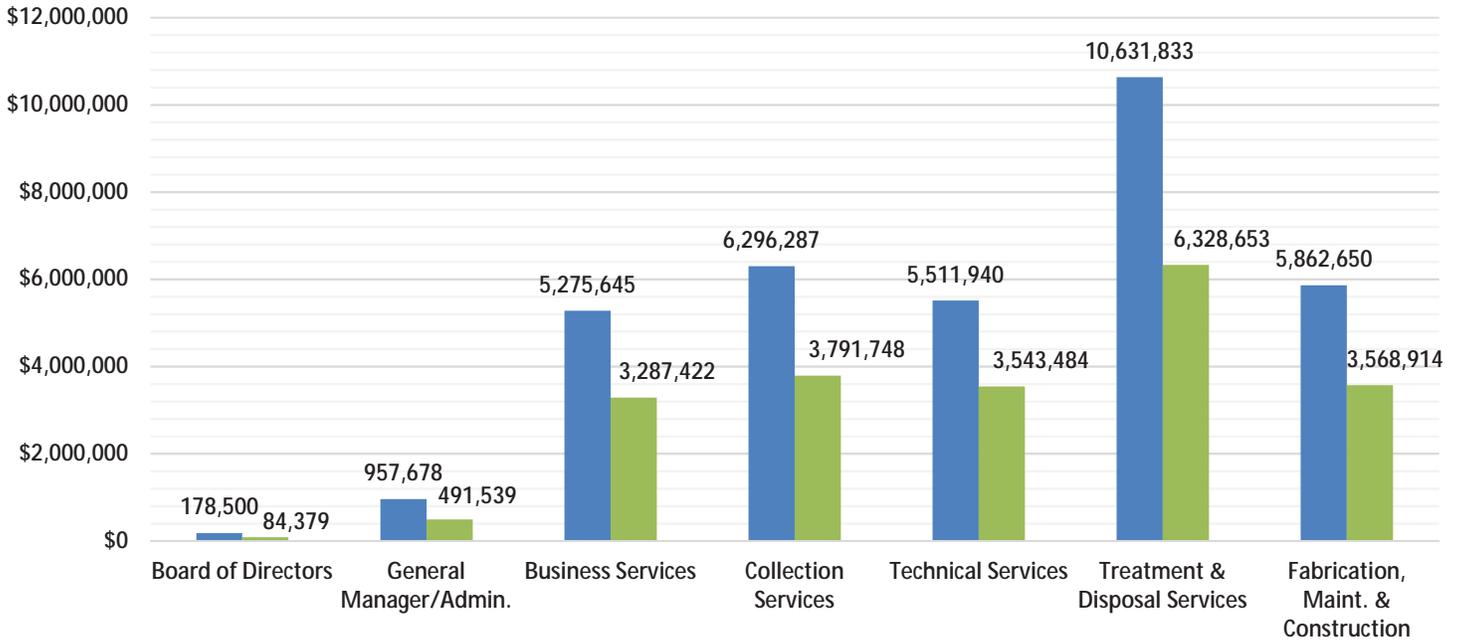
■ Budget ■ Actual



**REVENUES AND EXPENSES REPORT**  
as of 2/28/17

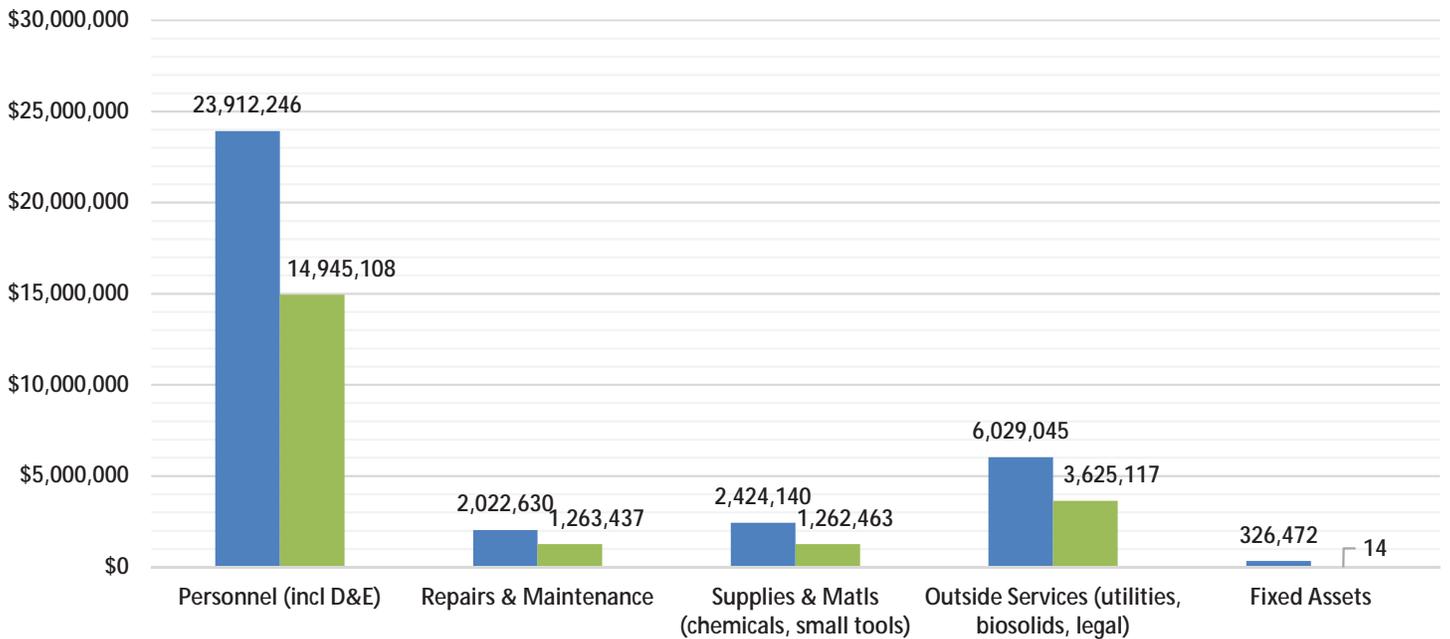
### Operating Expenses by Work Group

■ Budget ■ Actual



### Operating Expenses by Type

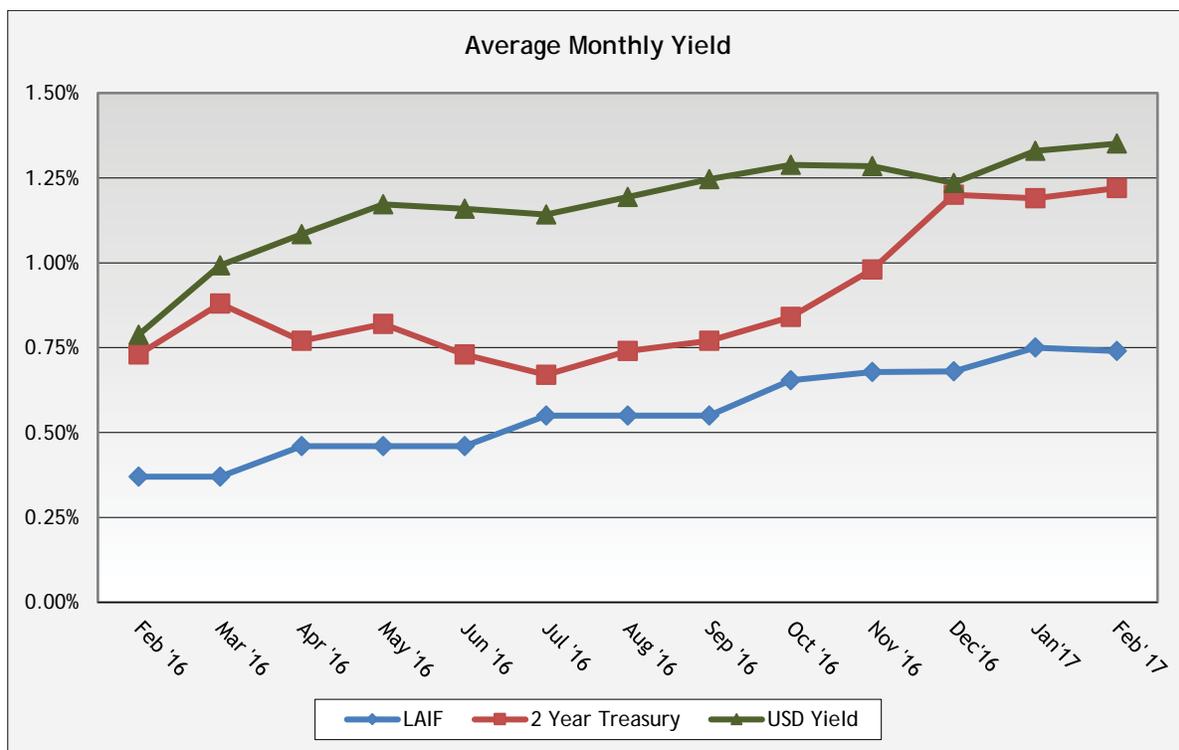
■ Budget ■ Actual



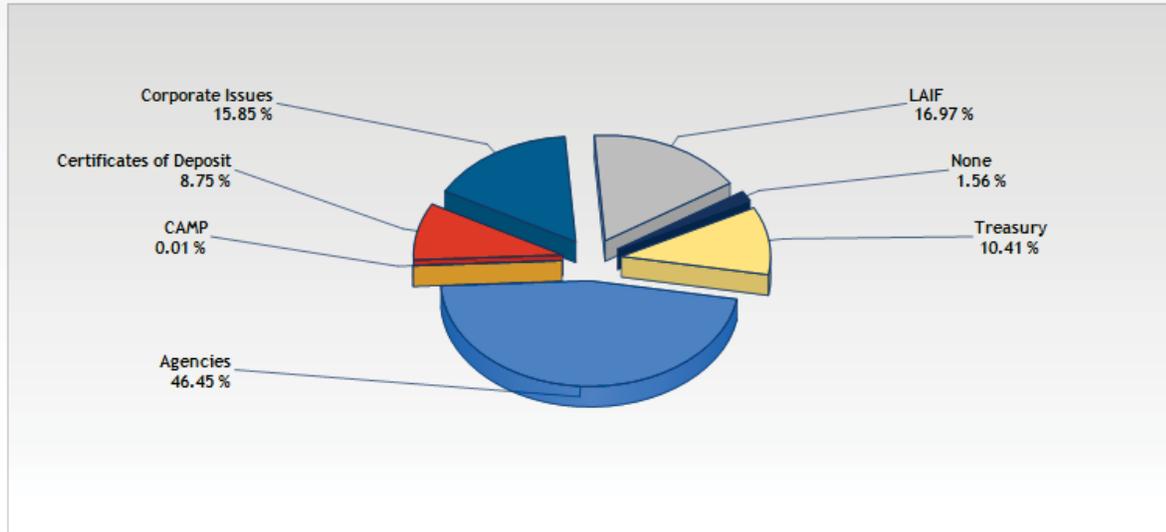
**Business Services Group  
February 2017**

- The recruitment for Accounting & Financial Analyst I was completed; Virginia Holslag was promoted on February 19, 2017.
- Management completed DISC training.
- Management attended CSMFO conference.
- Team completed MS Office 365 Training.
- FAST Coach facilitated Strategic Planning sessions with ET.
- Audit RFP issued.

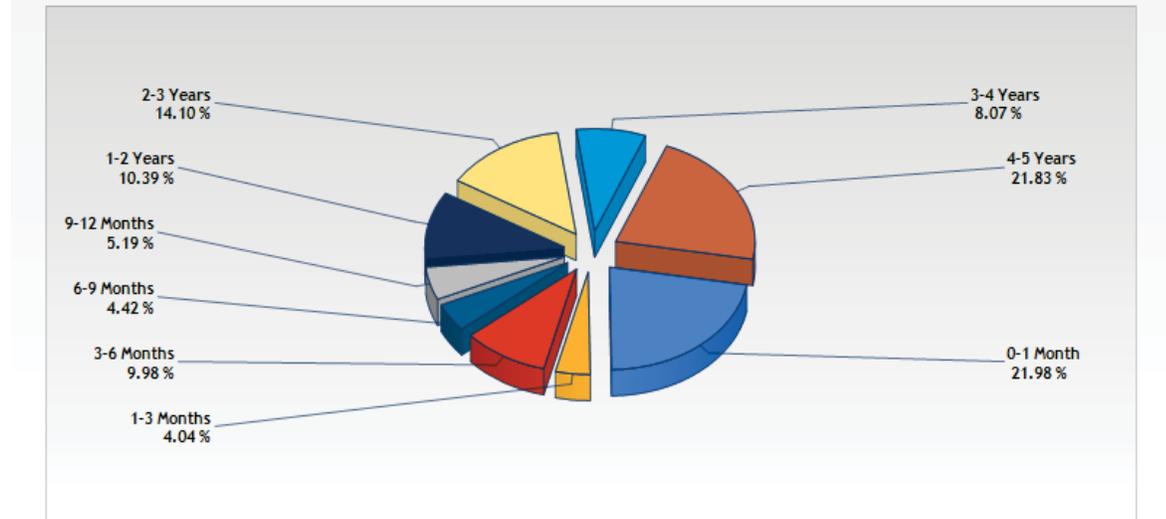
**Performance Measures for the USD Investment Portfolio**



### Portfolio Holdings Distribution by Asset Class



### Portfolio Holdings Distribution by Maturity Range



Maturity Range	Face Amount/Shares	YTM @ Cost	Cost Value	Days To Maturity	% of Portfolio	Market Value	Book Value	Duration To Maturity
0-1 Month	14,811,343.47	0.815	14,818,118.81	3	21.98	14,812,093.47	14,812,287.36	0.01
1-3 Months	2,725,000.00	0.738	2,725,107.43	62	4.04	2,725,619.93	2,725,041.80	0.17
3-6 Months	6,721,000.00	1.090	6,730,117.33	141	9.98	6,721,556.73	6,721,822.06	0.44
6-9 Months	2,975,000.00	0.938	2,976,720.00	232	4.42	2,975,716.12	2,975,495.19	0.63
9-12 Months	3,496,000.00	0.875	3,497,180.00	320	5.19	3,492,796.11	3,496,191.27	0.88
1-2 Years	7,000,000.00	1.258	7,006,090.00	597	10.39	6,994,840.00	7,004,667.29	1.62
2-3 Years	9,484,000.00	1.413	9,505,366.57	903	14.10	9,474,197.11	9,503,203.21	2.46
3-4 Years	5,248,000.00	2.043	5,439,145.28	1,242	8.07	5,376,862.53	5,403,979.45	3.25
4-5 Years	14,741,000.00	2.069	14,713,750.00	1,603	21.83	14,615,595.94	14,715,347.73	4.23
<b>TOTAL / AVERAGE</b>	<b>67,201,343.47</b>	<b>1.351</b>	<b>67,411,595.42</b>	<b>683</b>	<b>100</b>	<b>67,189,277.94</b>	<b>67,358,035.36</b>	<b>1.83</b>

Union Sanitary District  
Transactions Summary  
Monthly Activity - by Action  
Group By: Action  
Portfolio / Report Group: All Portfolios  
Begin Date: 02/01/2017, End Date: 02/28/2017

Description	CUSIP/Ticker	Coupon Rate	YTM @ Cost	Settlement Date	Face Amount/Shares	Principal	Realized Gain/Loss	Interest/Dividends	Total	Custodian	Portfolio Name
<b>Buy</b>											
FHLB 1.24 1/23/2019-18	3130AAN20	1.240	1.286	02/02/2017	1,000,000.00	999,100.00		310.00	999,410.00	Bank of New York 7537	Operating Fund
Synchrony Bank 2.3 2/24/2022	87165ELT2	2.300	2.300	02/28/2017	247,000.00	247,000.00		62.26	247,062.26	Bank of New York 7537	Operating Fund
T-Note 1.283 3/31/2019	912828SN1	1.283	1.067	02/22/2017	1,000,000.00	1,004,480.00		5,975.27	1,010,455.27	Bank of New York 7537	Operating Fund
T-Note 1.283 3/31/2019	912828SN1	1.283	1.067	02/22/2017	1,000,000.00	1,004,480.00		5,975.27	1,010,455.27	Bank of New York 7537	Operating Fund
<b>Sub Total / Average</b>					<b>3,247,000.00</b>	<b>3,255,060.00</b>		<b>12,322.80</b>	<b>3,267,382.80</b>		
<b>Interest</b>											
Bank Hapoalim 0.85 2/17/2017	06251AL65	0.850	0.000	02/17/2017	0.00	0.00		2,108.00	2,108.00	None	Operating Fund
Capital One National Asso Bank 1.25 8/28/2017	14042E6B1	1.250	0.000	02/28/2017	0.00	0.00		1,543.84	1,543.84	None	Operating Fund
Comenity Capital 1.25 4/11/2019	20033ASR8	1.250	0.000	02/12/2017	0.00	0.00		263.29	263.29	None	Operating Fund
FHLMC 0.8 8/25/2017-16	3134G8L49	0.800	0.000	02/25/2017	0.00	0.00		4,000.00	4,000.00	None	Operating Fund
FHLMC 1 8/15/2018-17	3134GABQ6	1.000	0.000	02/15/2017	0.00	0.00		5,000.00	5,000.00	None	Operating Fund
Franklin Synergy Bank 0.85 12/11/2017	35471TCH3	0.850	0.000	02/11/2017	0.00	0.00		179.04	179.04	None	Operating Fund
General Electric Capital Corp 5.4 2/15/2017	36962G2G8	5.400	0.000	02/15/2017	0.00	0.00		29,295.00	29,295.00	None	Operating Fund
HSBC 4.875 8/24/2020	4042Q1AE7	4.875	0.000	02/24/2017	0.00	0.00		48,750.00	48,750.00	None	Operating Fund
JP Morgan Chase & Co 2 8/15/2017	48126EAA5	2.000	0.000	02/15/2017	0.00	0.00		10,000.00	10,000.00	None	Operating Fund
Marlin Business Bank 0.85 8/24/2017	57116ALG1	0.850	0.000	02/24/2017	0.00	0.00		1,062.66	1,062.66	None	Operating Fund
Medallion Bank 1.15 10/30/2017	58403B2L9	1.150	0.000	02/28/2017	0.00	0.00		239.29	239.29	None	Operating Fund
Merrick Bank 0.9 5/19/2017	59013JLK3	0.900	0.000	02/19/2017	0.00	0.00		183.45	183.45	None	Operating Fund
Pacific Premier Bank 0.9 12/5/2017	69478QDG2	0.900	0.000	02/03/2017	0.00	0.00		189.57	189.57	None	Operating Fund
Peoples State Bank of Newton 0.7 6/15/2017	712490AC5	0.700	0.000	02/15/2017	0.00	0.00		148.04	148.04	None	Operating Fund
Santander Bank 0.8 2/17/2017	80280JLS8	0.800	0.000	02/17/2017	0.00	0.00		1,989.44	1,989.44	None	Operating Fund
TCF National Bank 0.85 8/17/2017	872278SH0	0.850	0.000	02/17/2017	0.00	0.00		1,062.66	1,062.66	None	Operating Fund
T-Note 1.5 2/28/2019	912828C24	1.500	0.000	02/28/2017	0.00	0.00		7,500.00	7,500.00	None	Operating Fund
Victor Valley Community College District 2/1/2017	92603PER9	1.896	0.000	02/01/2017	0.00	0.00		4,740.00	4,740.00	None	Operating Fund
Wells Fargo Bank 1.15 7/22/2019	9497486R3	1.150	0.000	02/20/2017	0.00	0.00		243.20	243.20	None	Operating Fund
<b>Sub Total / Average</b>					<b>0.00</b>	<b>0.00</b>		<b>118,497.48</b>	<b>118,497.48</b>		
<b>Matured</b>											
Bank Hapoalim 0.85 2/17/2017	06251AL65	0.850	0.000	02/17/2017	248,000.00	248,000.00		0.00	248,000.00	Bank of New York 7537	Operating Fund
General Electric Capital Corp 5.4 2/15/2017	36962G2G8	5.400	0.000	02/15/2017	1,085,000.00	1,085,000.00		0.00	1,085,000.00	Bank of New York 7537	Operating Fund
Santander Bank 0.8 2/17/2017	80280JLS8	0.800	0.000	02/17/2017	248,000.00	248,000.00		0.00	248,000.00	Bank of New York 7537	Operating Fund
<b>Sub Total / Average</b>					<b>1,581,000.00</b>	<b>1,581,000.00</b>		<b>0.00</b>	<b>1,581,000.00</b>		
<b>Withdraw</b>											
LAIF LGIP	LGIP1002	N/A	0.000	02/10/2017	1,000,000.00	1,000,000.00		0.00	1,000,000.00	None	Liquid Fund
<b>Sub Total / Average</b>					<b>1,000,000.00</b>	<b>1,000,000.00</b>		<b>0.00</b>	<b>1,000,000.00</b>		

Union Sanitary District  
 Transactions Summary  
 Monthly Activity - by Action  
 Group By: Action  
 Portfolio / Report Group: All Portfolios  
 Begin Date: 02/01/2017, End Date: 02/28/2017

Description	CUSIP/Ticker	Coupon Rate	YTM @ Cost	Settlement Date	Face Amount/Shares	Principal	Realized Gain/Loss	Interest/Dividends	Total	Custodian	Portfolio Name
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T-Note 1.283 3/31/2019	912828SN1	1.283	1.067	02/22/2017	1,000,000.00	1,004,480.00		5,975.27	1,010,455.27	Bank of New York 7537	Operating Fund
T-Note 1.283 3/31/2019	912828SN1	1.283	1.067	02/22/2017	1,000,000.00	1,004,480.00		5,975.27	1,010,455.27	Bank of New York 7537	Operating Fund
<b>Sub Total / Average</b>					<b>3,247,000.00</b>	<b>3,255,060.00</b>		<b>12,322.80</b>	<b>3,267,382.80</b>		
<b>Interest</b>											
Bank Hapoalim 0.85 2/17/2017	06251AL65	0.850	0.000	02/17/2017	0.00	0.00		2,108.00	2,108.00	None	Operating Fund
Capital One National Asso Bank 1.25 8/28/2017	14042E6B1	1.250	0.000	02/28/2017	0.00	0.00		1,543.84	1,543.84	None	Operating Fund
Comenity Capital 1.25 4/11/2019	20033ASR8	1.250	0.000	02/12/2017	0.00	0.00		263.29	263.29	None	Operating Fund
FHLMC 0.8 8/25/2017-16	3134G8L49	0.800	0.000	02/25/2017	0.00	0.00		4,000.00	4,000.00	None	Operating Fund
FHLMC 1 8/15/2018-17	3134GABQ6	1.000	0.000	02/15/2017	0.00	0.00		5,000.00	5,000.00	None	Operating Fund
Franklin Synergy Bank 0.85 12/11/2017	35471TCH3	0.850	0.000	02/11/2017	0.00	0.00		179.04	179.04	None	Operating Fund
General Electric Capital Corp 5.4 2/15/2017	36962G2G8	5.400	0.000	02/15/2017	0.00	0.00		29,295.00	29,295.00	None	Operating Fund
HSBC 4.875 8/24/2020	4042Q1AE7	4.875	0.000	02/24/2017	0.00	0.00		48,750.00	48,750.00	None	Operating Fund
JP Morgan Chase & Co 2 8/15/2017	48126EAA5	2.000	0.000	02/15/2017	0.00	0.00		10,000.00	10,000.00	None	Operating Fund
Marlin Business Bank 0.85 8/24/2017	57116ALG1	0.850	0.000	02/24/2017	0.00	0.00		1,062.66	1,062.66	None	Operating Fund
Medallion Bank 1.15 10/30/2017	58403B2L9	1.150	0.000	02/28/2017	0.00	0.00		239.29	239.29	None	Operating Fund
Merrick Bank 0.9 5/19/2017	59013JLK3	0.900	0.000	02/19/2017	0.00	0.00		183.45	183.45	None	Operating Fund
Pacific Premier Bank 0.9 12/5/2017	69478QDG2	0.900	0.000	02/03/2017	0.00	0.00		189.57	189.57	None	Operating Fund
Peoples State Bank of Newton 0.7 6/15/2017	712490AC5	0.700	0.000	02/15/2017	0.00	0.00		148.04	148.04	None	Operating Fund
Santander Bank 0.8 2/17/2017	80280JLS8	0.800	0.000	02/17/2017	0.00	0.00		1,989.44	1,989.44	None	Operating Fund
TCF National Bank 0.85 8/17/2017	872278SH0	0.850	0.000	02/17/2017	0.00	0.00		1,062.66	1,062.66	None	Operating Fund
T-Note 1.5 2/28/2019	912828C24	1.500	0.000	02/28/2017	0.00	0.00		7,500.00	7,500.00	None	Operating Fund
Victor Valley Community College District 2/1/2017	92603PER9	1.896	0.000	02/01/2017	0.00	0.00		4,740.00	4,740.00	None	Operating Fund
Wells Fargo Bank 1.15 7/22/2019	9497486R3	1.150	0.000	02/20/2017	0.00	0.00		243.20	243.20	None	Operating Fund
<b>Sub Total / Average</b>					<b>0.00</b>	<b>0.00</b>		<b>118,497.48</b>	<b>118,497.48</b>		
<b>Matured</b>											
Bank Hapoalim 0.85 2/17/2017	06251AL65	0.850	0.000	02/17/2017	248,000.00	248,000.00		0.00	248,000.00	Bank of New York 7537	Operating Fund
General Electric Capital Corp 5.4 2/15/2017	36962G2G8	5.400	0.000	02/15/2017	1,085,000.00	1,085,000.00		0.00	1,085,000.00	Bank of New York 7537	Operating Fund
Santander Bank 0.8 2/17/2017	80280JLS8	0.800	0.000	02/17/2017	248,000.00	248,000.00		0.00	248,000.00	Bank of New York 7537	Operating Fund
<b>Sub Total / Average</b>					<b>1,581,000.00</b>	<b>1,581,000.00</b>		<b>0.00</b>	<b>1,581,000.00</b>		
<b>Withdraw</b>											
LAIF LGIP	LGIP1002	N/A	0.000	02/10/2017	1,000,000.00	1,000,000.00		0.00	1,000,000.00	None	Liquid Fund
<b>Sub Total / Average</b>					<b>1,000,000.00</b>	<b>1,000,000.00</b>		<b>0.00</b>	<b>1,000,000.00</b>		

**MONTHLY OPERATIONS REPORT FOR THE MONTH OF FEBRUARY 2017  
TECHNICAL SUPPORT WORK GROUP SUMMARY**

**Capital Improvement Program**

**Thickener Control Building Improvements Project** – The installation of remaining electrical conduits, lighting and grating has been completed. Contractor worked on punchlist work and site cleanup.

**Fremont and Paseo Padre Lift Stations Improvements Project** – The operational testing of the first lift pump at Paseo Padre Lift Station was successfully completed. Contractor worked on testing for the second lift pump.

**Plant Facilities Improvements Project** –Change order negotiations are complete. Contractor worked on Project closeout.

**Chemical Tanks and Piping Replacement Project** – Contractor worked on the chemical piping trench inside the Odor Control Building.

**Newark Backyard Sanitary Sewer Relocation Project, Phase 3** – Change order negotiations are complete. Contractor worked on Project closeout.

**Sludge Degritter System Project** – Contractor submittals under review. Contractor worked on fabrication of degritter equipment.

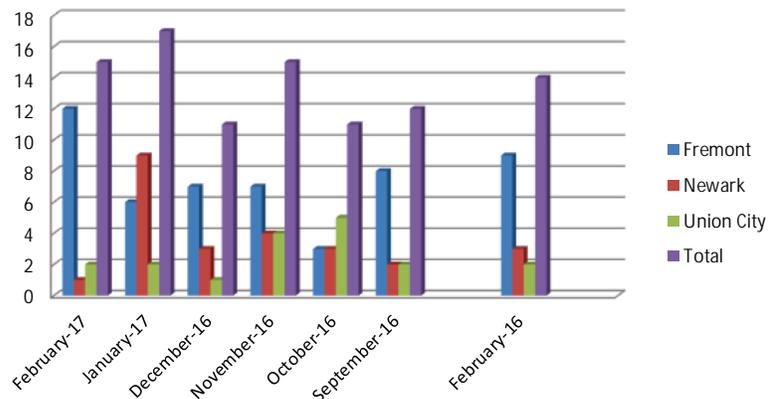
**Headworks Knife Gate Valves 1-3 Replacement Project** – Contractor submittals under review. Contractor worked on fabrication of knife gates valves and flanged coupling adapters.

**Digesters No. 1 and 3 Gas Isolation Valves Project** – Notice to Proceed was issued on February 7<sup>th</sup> and preconstruction meeting was conducted on February 16<sup>th</sup>. Contractor worked on submittals and procurement of materials.

**Customer Service**

Trouble Calls dispatched from the Front Desk during business hours:

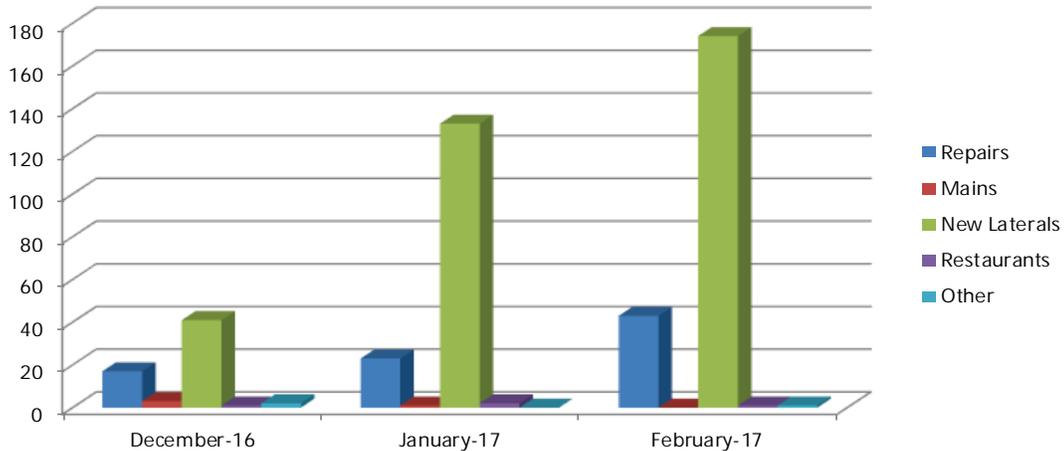
Month	Fremont	Newark	Union City	Total
February-17	12	1	2	15
January-17	6	9	2	17
December-16	7	3	1	11
November-16	7	4	4	15
October-16	3	3	5	11
September-16	8	2	2	12
<i>February-16</i>	<i>9</i>	<i>3</i>	<i>2</i>	<i>14</i>
6-Month Total				<b>81</b>



## Sewer Permits Issued

Month	Repairs	Mains	New Laterals	Restaurants	Other
February-17	43	0	174	1	1
January-17	23	1	133	2	0
December-16	17	3	41	1	2

New Laterals - New residential lateral connections  
 Other - Non-residential construction (except restaurants)



## Communication

- Social Media posts:
  - "15 things you should never flush down the toilet" - 2/2
  - Union City Police Department's support of girl scout robbed while selling cookies - 2/9
  - Shared CWEA driver seminar tweet - 2/15
  - CWEA professional development seminar held at USD: Construction Management Best Practices - 2/21
- Continued participation in USD virtual tour video production planning
- Continued activity on Union City Chamber of Commerce Board of Directors
- Continued planning for centennial celebration in 2018
- Continued research regarding USD 2017 newsletter
- Researched Fats, Oils, and Grease (FOG) public outreach campaigns
- Prepared materials for Alameda County Science and Engineering Fair Excellence in Water/Wastewater/Recycled Water award recipients (Fair dates: March 10 – 12, 2017)

## Environmental Compliance

### Pollution Prevention Program

USD's Environmental Compliance team conducts pollution prevention inspections to restaurants, car wash businesses, and other commercial facilities. EC also conducts inspections and enforcement for the City of Fremont's Environmental Services group. We conduct over 600 Stormwater compliance inspections every year to ensure that commercial facilities, including restaurants and auto shops, comply with City Ordinance requirements, and do not discharge pollutants to the creeks and bay.

For the past month, the EC team conducted 82 Stormwater (Urban Runoff), and 53 FOG (restaurant) inspections. During this reporting period, Inspectors identified 19 Stormwater and 17 FOG enforcement actions. Four (4) of the Stormwater enforcements resulted in administrative fines ranging from \$100 to \$500. All of the administrative fines were for repeated violations.

**Urban Runoff Inspections and Enforcements**

February 2017	No. of UR Inspections	VW	WL	NOV	AF	LA	Total Enforcements	No. of Illicit Discharge/s	0
	82	5	2	8	4	0	19	% enforcement	23%

**FOG Inspections and Enforcements**

February 2017	No. of FOG Inspections	VW	WL	NOV	AF	NOD	Total Enforcements	% enforcement	32%
	53	5	12	0	0	0	17		

*Enforcements:*

*VW – Verbal Warning*

*WL – Warning Letter*

*NOV – Notices of Violation*

*AF – Administrative Fine*

*LA – Legal Action*

*NOD – Notice of Deficiency*

*AO – Administrative Order*

*C&D – Cease & Desist Order*

*SNC – Significant Non-Compliance*

**Dental Inspections, School Outreach, and Plant Tours**

# of Dental Inspections	# of School Outreach Events including Sewer Science	# of Plant Tours
13	13	1

**Industrial Pretreatment**

The Industrial Pretreatment program has a number of pending permits as shown in the table below. USD inspectors are working with each of these companies to establish permitted industrial discharges.

**Pending Permits**

<b>New Industrial/Groundwater Permits</b>	<b>Groundwater/Temporary</b>
Chemetall	None
Seagate Technology LLC FRC	
Mission Linen	
TE Connectivity	

**Permits Issued**

<b>Company Name</b>	<b>Date Permit Issued</b>
None	

**Industrial Closures**

<b>Company Name</b>	<b>Date of Closure</b>
None	

**Reports (Annual & Semi-Annual Pretreatment Report, Union City Report, etc.)**

<b>Report Name</b>	<b>Date Report Completed and Submitted</b>
2016 Annual Pretreatment Report	2/28/17

**Enforcement Action**

IU Name & Nature of Business	Comments	City	Parameters Violated	Discharge concentration (mg/L)	USD/Fed Limit Violated (mg/L)	Enforcement (1)
None						

(1) *WL – Warning Letter*

*C&D – Cease and Desist Order*

*NOV – Notices of Violation*

*SNC – Significant Non-Compliance*

*AO – Administrative Order*

*EM – Enforcement Meeting*

**Other - Training, Special Meetings, Conferences, IAC (topics)**

Activity	Date of Event	Attendees
BAPPG Monthly Committee Meeting	2/1/2017	Doug Dattawalker
BAPPG Steering Committee Meeting	2/1/2017	Doug Dattawalker
CWEA P3S Federal Updates Webinar	2/2/17	Marian Gonzalez, Edda Marasigan, Jason Yeates
BACWA Executive Meeting	2/17/2017	Doug Dattawalker
IPM Training	2/24/17	Joe Mendoza
CWEA's P3S Conference	2/27 – 3/1/2017	Marian Gonzalez, Douglas Dattawalker, Jason Yeates, Michael Dunning, Audrey Villanueva

**Engineering/Construction**

No. of projects under construction: **8**

	Construction Projects	Capital (\$1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2017 Activities
1.	Thickener Control Building Improvements Project – Curtis	\$9,990	12/16	99%	100%	Contractor worked on punchlist and site cleanup.
2.	Fremont and Paseo Padre LSs Improvement - Derek	\$2,801	10/16	85%	100%	The first lift pump at Paseo Padre LS was successfully tested and is in service. Testing of the second lift pump has begun.
3.	Plant Facilities Improvements Project – Thomas	\$1,570	1/17	100%	100%	Change order negotiations are complete. Project closeout has begun.

	Construction Projects	Capital (\$1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2017 Activities
4.	Chemical Tanks and Piping Replacement Project – Thomas	\$2,102	10/17	10%	46%	Contractor worked on the chemical piping trench inside the Odor Control Building.
5.	Newark Backyard SS Relocation Project Phase 3 –Andrew/Rollie	\$2,107	09/16	100%	100%	Notice of Completion for Board's acceptance expected in March.
6.	Sludge Degritter System Project – Kevin	\$1,436	10/17	5%	36%	Submittals under review. Contractor worked on fabrication of equipment.
7.	Headworks Knife Gate Valves 1-3 Replacement – Kevin	\$478	10/17	1%	22%	Submittals under review. Contractor worked on fabrication of equipment.
8.	Digesters No. 1 and 3 Gas Isolation Valves Project - Derek	\$100	04/17	0%	29%	Notice to Proceed was issued on February 7 <sup>th</sup> . Preconstruction meeting conducted on February 16 <sup>th</sup> .

### Design/Study

No. of projects in design/study phase: 14

	Design/Study Projects	Capital (\$1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2017 Activities
1.	Alvarado Basin Master Plan Capacity Assessment - Rollie	\$167	4/17	83%	83%	Update of land use data, running the model, and drafting of report
2.	Plant Solids System / Capacity Assessment Phase 2 – Curtis	\$279	11/17	12%	15%	Project Plan, Outline, and Table of Contents for report has been completed. Consultant worked on Basis of Analysis.
3.	Recycled Water Feasibility Study Update – Chris E.	\$130	3/17	99%	99%	Final report under State Water Board review.
4.	Force Main Corrosion Repairs Phase 1 – Chris E.	\$113	4/17	50%	48%	75% design submittal complete. 90% design submittal is due in March.
5.	Cogeneration Building HVAC Improvements Project - Derek	\$27	09/16	100%	100%	Project is ready to advertise but on hold pending resolution of current Cogen issues.

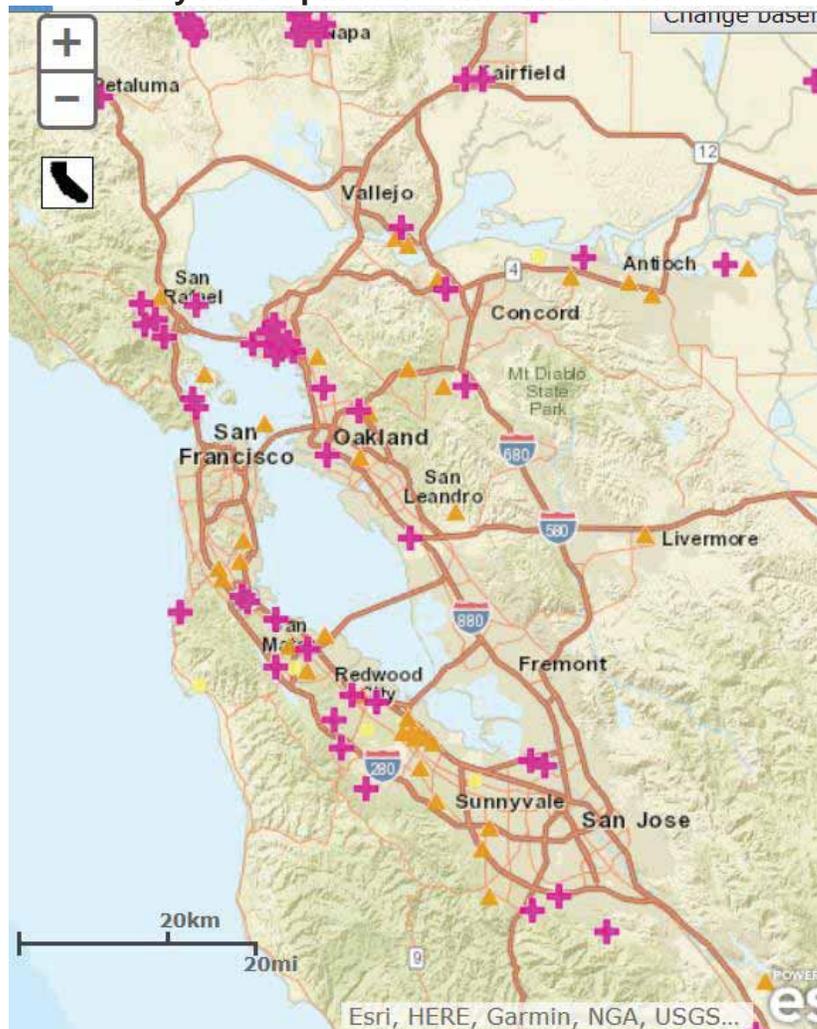
	Design/Study Projects	Capital (\$1000)	Scheduled Completion	Completed Scope	Completed Time	Comments for Feb. 2017 Activities
6.	Seismic Vulnerability Assessment, Phase 3 - Thomas	\$105	06/30	60%	50%	Continued with seismic evaluation of structures. Draft report is due in March/April.
7.	Newark Pump Station Wet Well Improvements - Thomas	\$99	05/17	40%	40%	Consultant worked on 90% design submittal, due in March.
8.	Standby Power Generation System Upgrade Project – Raymond/Kevin	\$175	05/17	30%	40%	Site Alternatives Evaluation Workshop completed on February 8 <sup>th</sup> .
9.	Pavement Condition Assessment Project – Andrew	\$26	2/17	90%	90%	Draft final report received, under staff review.
10.	Force Main Condition Assessment – Andrew	\$121	10/17	15%	25%	Progress to resume in August 2017 when the force main can be taken out of service.
11.	Primary Digester No. 7 Project – Curtis	\$127	7/17	30%	40%	Design Criteria Workshop completed on February 15 <sup>th</sup> .
12.	Plant Master Plan – Raymond	\$265	3/18	10%	14%	Workshop No. 1 completed on February 23 <sup>rd</sup> to review the preliminary results of the Administrative Building evaluation.
13.	Odor Control Alternatives Study - Kevin	\$140	11/17	5%	20%	Kickoff meeting held on February 13 <sup>th</sup> .
14.	Primary Digester No. 3 Rehabilitation - Derek	\$159	07/17	10%	19%	Kickoff meeting held on February 14 <sup>th</sup> . Consultant worked on 50% design.

**COLLECTION SERVICES  
ACTIVITIES REPORT  
February 2017**

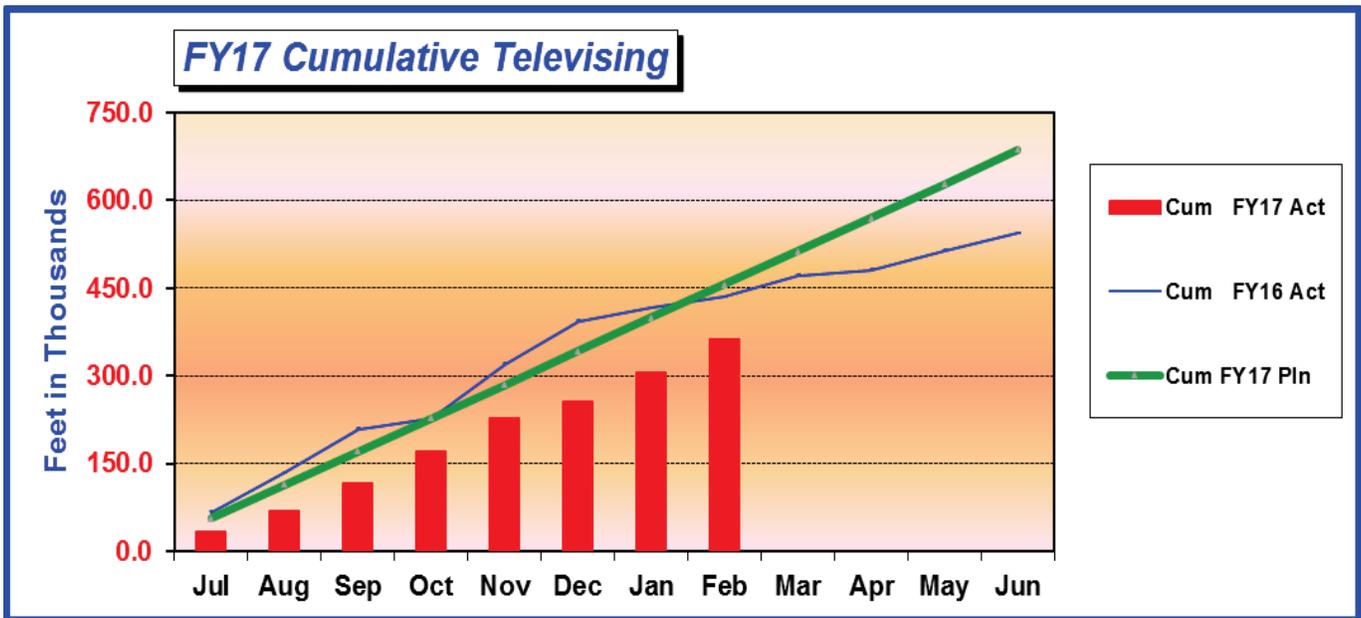
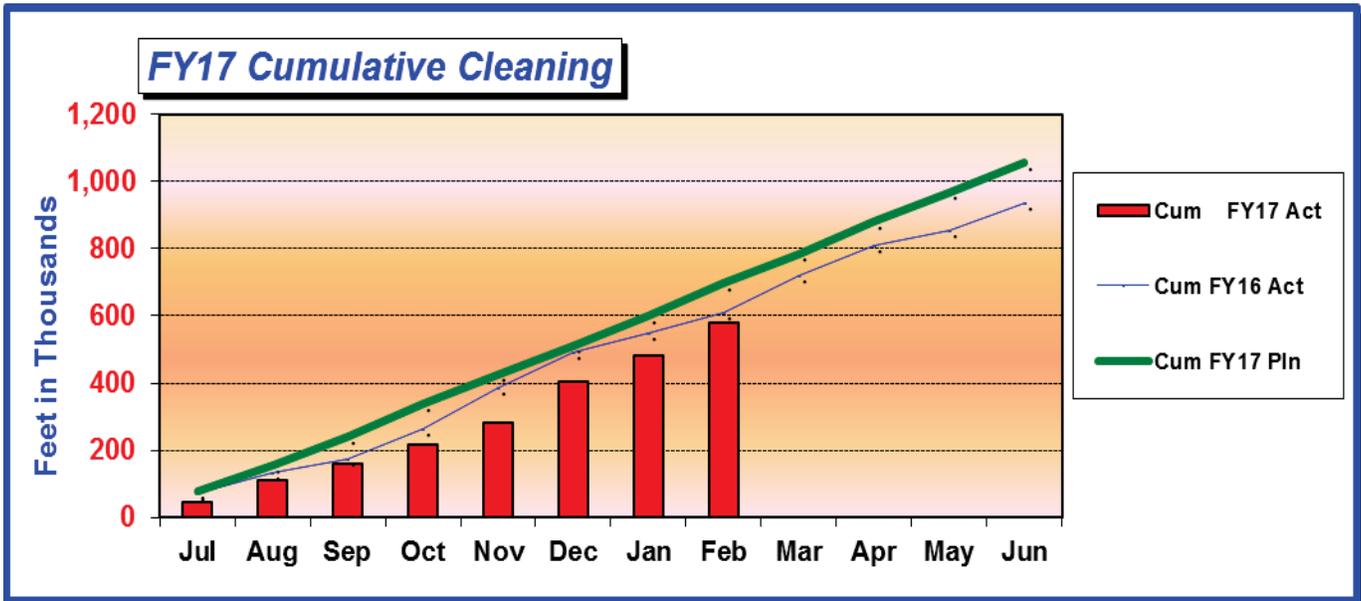
**Progress/Accomplishments**

- Category 3 Spill on 2/14, 96 gallons, all recovered, cause was construction debris
- Completed 19.0 miles of cleaning of sewer lines in February
- Completed 11.0 miles of televising of sewer lines in February
- Responded to 23 service request calls in February
- Completed a total of 33 main repairs February
- Trainings
  - SSO Sampling

**Bay Area Spills for Same Time Period**

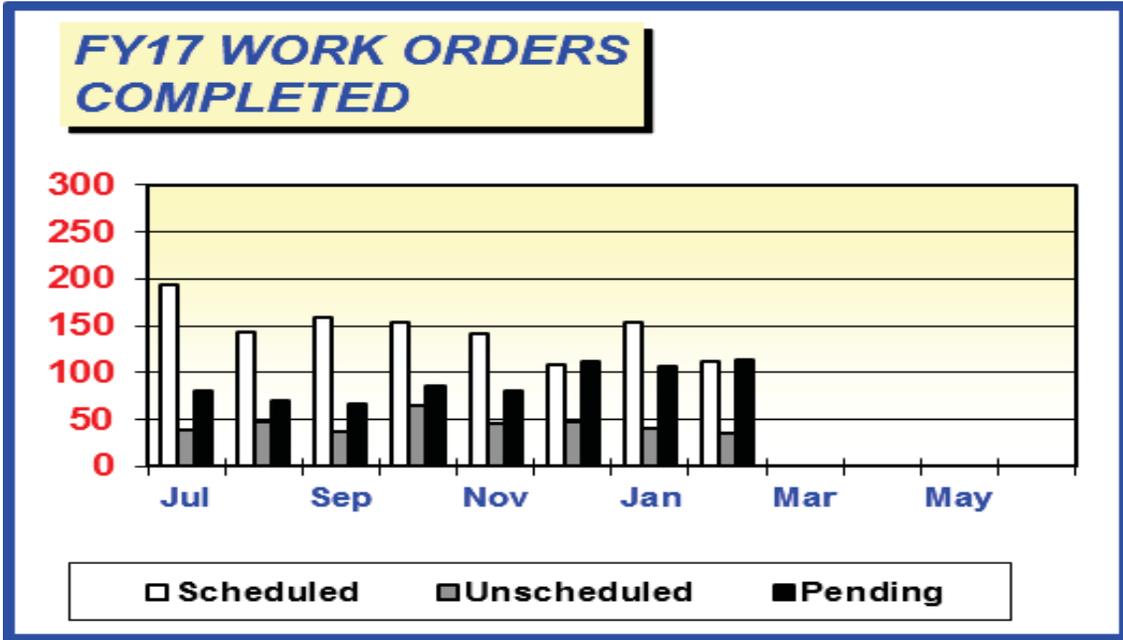


# Performance Measures

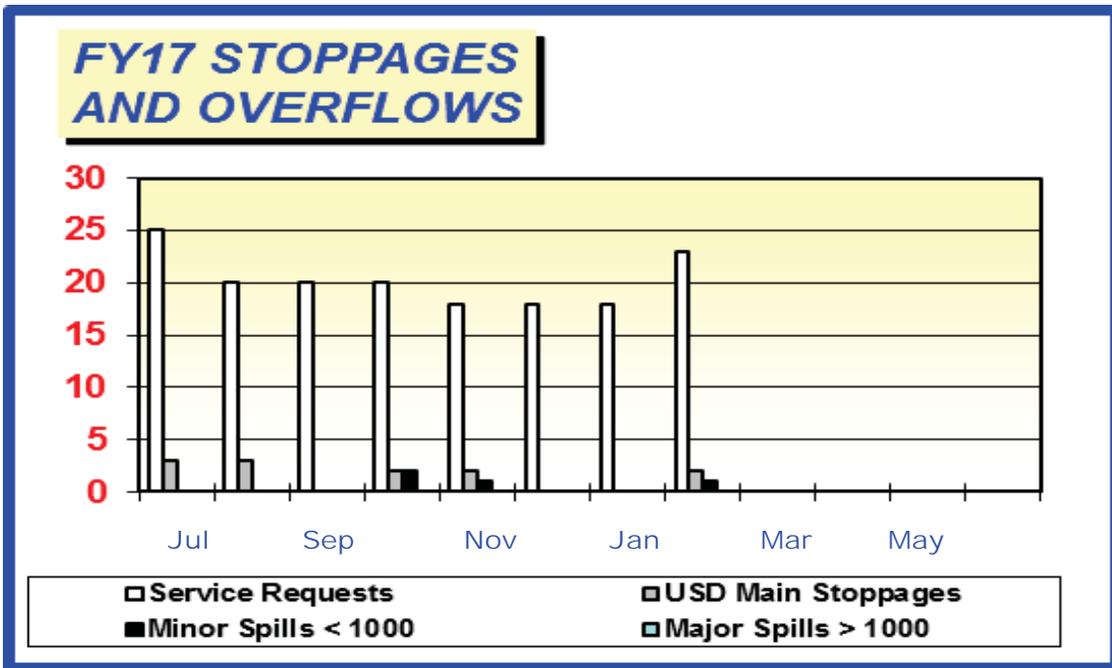


Other Collection Services Status Data:

Support Team Work Order Status:



C/S Maintenance Status:



**Fabrication, Maintenance and Construction  
Activities Report  
February 2017**

**Progress/Accomplishments**

- Completed 97% of preventive maintenance activities for the month of February
- Completed 122 corrective maintenance work orders for the month of February
- Mixing Pump 3 replacement
- Odor Scrubber 10 overhaul
- Co-Gen No. 1 rear main seal replacement with Western Energy
- Mixing Pump 6A replacement
- East Barscreen brake replacement

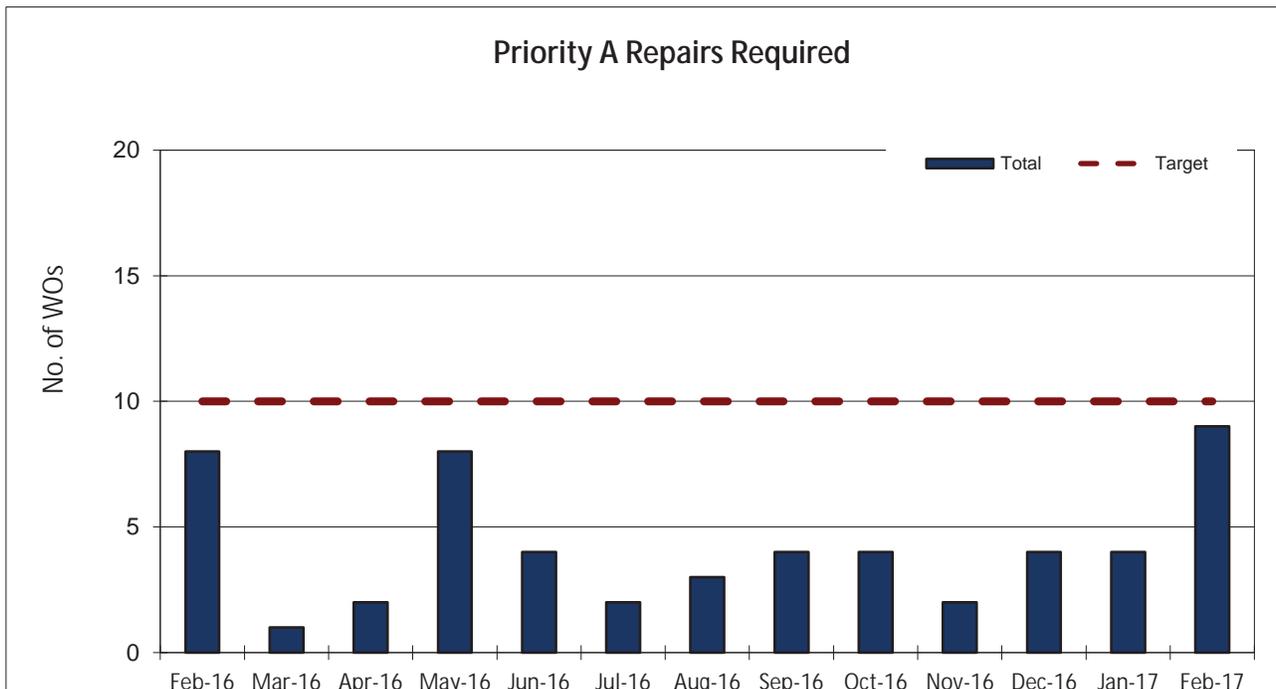
**Future Planning**

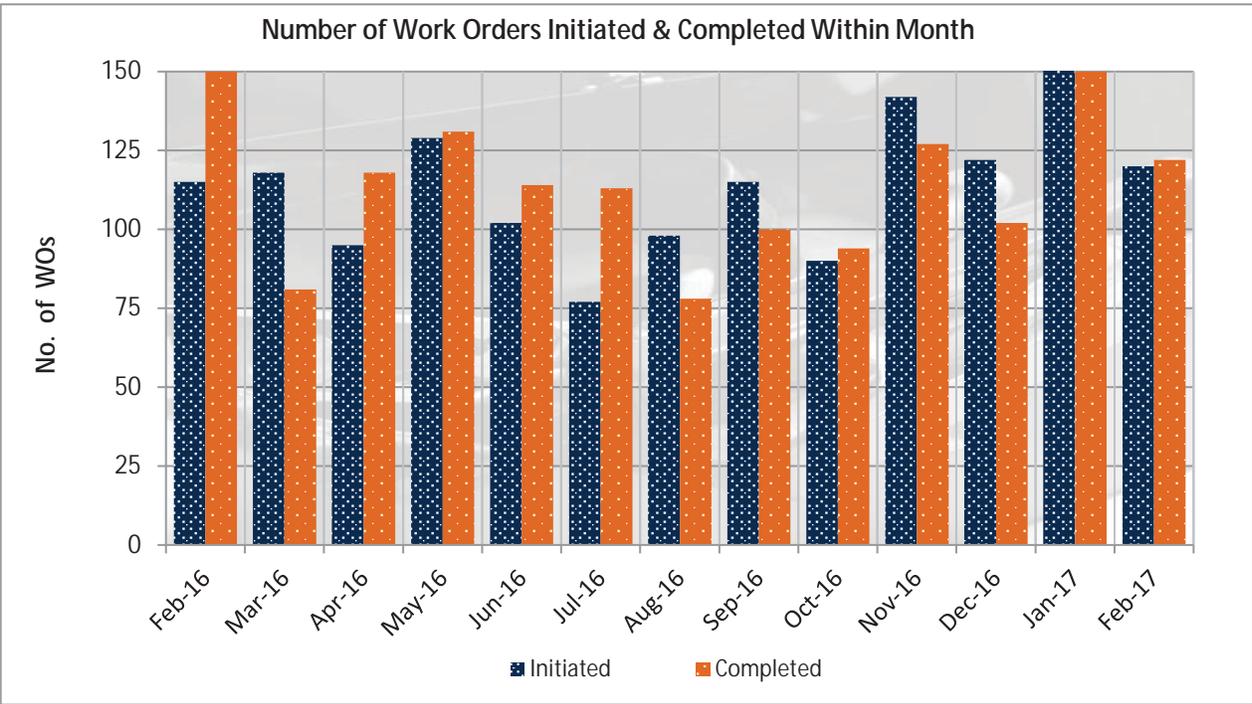
- Site Waste Pump 1 repair
- Odor Scrubber 11 overhaul
- Headworks actuator replacement (7 total)
- GBT bulk poly delivery system overhaul
- Centrifuge 2 feed pump replacement

**Other**

- Completed Boyce Lift Station Bypass exercise
- Three employees and coach became level 1 certified in ultra sound

**Performance Measurements**





Treatment & Disposal  
Activities Report  
February 2017

### Progress/Accomplishments

- Maintained 100% compliance with NPDES permits.
- Completed 100% preventive maintenance activities for the month of February.
- Conducted additional return activated sludge and waste activated sludge sampling for SSCAR Project Phase II.
- Conduct Solids system shutdowns to support the Thickener Control Building Improvements Project.
- Successfully managed high influent flows greater than 60 mgd during significant storm on 2/20/2017.
- Reviewed and submitted comments on the administrative draft of the EBDA NPDES permit.
- Attended a kickoff meeting for the Solids Capacity Assessment Report project. Compiled and submitted plant technical data in response to a request for information.
- Presented process control evaluation to TPO staff.
- Began planning and logistics for membrane cleaning demonstration project tentatively scheduled for April 2017.
- Hosted bench scale testing for a sewer corrosion control chemical to potentially replace caustic soda.
- Attended an SB 1383 workshop dealing with rule development for short lived climate pollutants (SLCP) and Cal recycle rules for the diversion of organics from landfills.
- Attended a kick off meeting for the design of digester No. 7. Reviewed and submitted plant modeling data in response to the consultant's request for information.

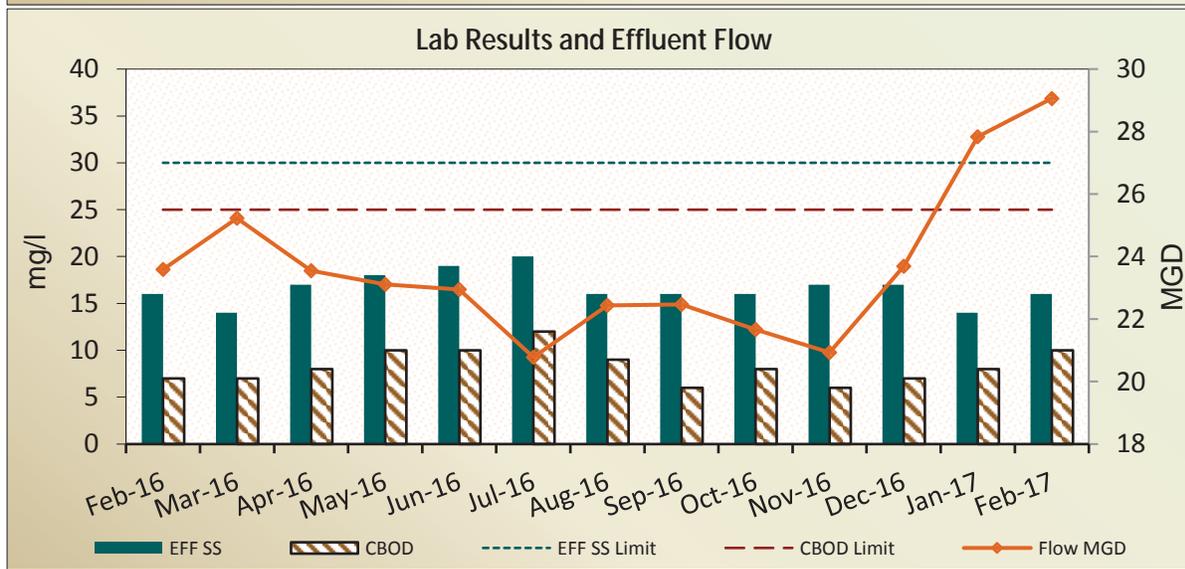
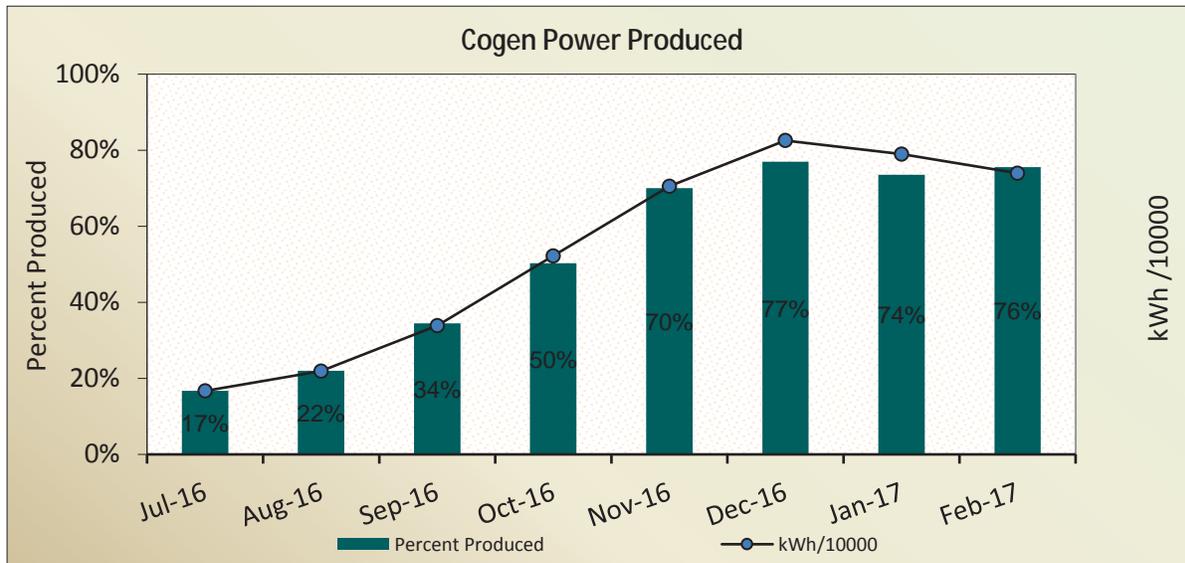
### Future Planning

- Conduct multiple shutdowns of the Digester Gas System to facilitate the Digester 1 and 3 Gas Isolation Valve CIP Project.
- Conduct field sampling and analysis for the SSCAR Phase II Study.
- Conduct initial planning and logistics for the Volute thickener demonstration project.
- Prepare recruitment materials and conduct selection process for an impending Laboratory Chemist I/II vacancy.
- Prepare for the aeration membrane cleaning demonstration project.
- Review and provide comments on the NPDES Tentative Order.
- Finalize Draft cogeneration demonstration project.
- Negotiate emission factors with BAAQMD for Nox CO and toxic constituents for the impending renewal of the Plant's BAAQMD permit.

### Other

- Cogen system produced 76% of power consumed for the month of February.

## Performance Measurements



USD's Final Effluent Monthly Monitoring Results				
Parameter	EBDA Limit	Dec-16	Jan-17	Feb-17
Copper, µg/l	78	8.5	8.2	5.8
Mercury, µg/l	0.066	0.00395	0.00532	0.00476
Cyanide, µg/l	42	< 3.9	< 3.9	< 3.9
Ammonia- N, mg/L (Range)	130	35.8 - 40.0	29.6 - 40.0	22.0 - 41.0
Fecal Coliform, MPN/100ml (Range)				
• 5-Sample Geometric Mean	500	24 - 52	30 - 66	28 - 90
• 11-Sample 90th Percentile	1100	99 - 137	54 - 105	105 - 270
Enterococci				
• 5-Sample Geometric Mean	242	13 - 15	13 - 21	13 - 18

E = Estimated value, concentration outside calibration range. For SIP, E = DNQ, estimated concentration.



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

Karen W. Murphy  
*Attorney*

**DATE:** March 21, 2017

**MEMO TO:** Board of Directors - Union Sanitary District

**FROM:** Paul R. Eldredge, General Manager/District Engineer  
Sami E. Ghossain, Manager of Technical Services  
Raymond Chau, CIP Coach  
Curtis Bosick, Associate Engineer

**SUBJECT:** Agenda Item No. 9 – Meeting of March 27, 2017  
**Authorize the General Manager to Execute Task Order No. 2 with RMC Water and Environment for the Plant Master Plan**

### **Recommendation**

Staff recommends the Board authorize the General Manager to execute Task Order No. 2 with RMC Water and Environment in the amount of \$69,877 for the Plant Master Plan.

### **Background**

On December 14, 2016, the Board authorized the General Manager to execute an Agreement and Task Order No. 1 with RMC Water and Environment in the amount of \$265,217 for the Plant Master Plan. The purpose of the Plant Master Plan is to review and assess the District's near and long-term projects, evaluate the need to retrofit or replace existing facilities (e.g. Operations and Administration Buildings), recommend the sequence of design and construction implementation based on future regulatory changes, determine priorities and schedules of improvements, re-affirm previous recommendations, evaluate existing and future space and capacity needs, optimize process adjacencies, determine economic feasibility of options, and summarize what is intended to be a road map for the WWTP for the next 20 to 40 years.

### **Amendment No. 1**

On March 21, 2017, staff executed Amendment No. 1 to Task Order No. 1 in the amount of \$39,700 with RMC for additional services related to the evaluation of the Administration Building. Under Task Order No. 1, RMC will evaluate the retrofit of the Administration Building and compare the capital and operation and maintenance costs of the existing building to the cost of a new building. Since the Administration Building and the Plant Operations Control Building are both located in an area of the plant where future plant process facilities could be constructed, staff would like RMC to include the Plant Operation Control Building in its evaluation.

The 2016 Seismic Vulnerability Assessment identified seismic deficiencies in the Plant Operations Control Building. Additionally, future effluent discharge regulations could require new Laboratory equipment and space for the additional analyses required. Under Amendment No. 1, RMC will evaluate the costs to retrofit and remodel the existing Plant Operations Control Building and the on-going operation and maintenance costs of a building that was originally constructed in 1980. RMC will also conduct detailed cost estimates of the Administration and Plant Operation Control Buildings and assess whether the District should consider the retrofit of both buildings or construct a new building that would combine the functions of both.

### **Task Order No. 2**

The District is in the process of evaluating alternatives for the management of effluent peak wet weather flows, especially if the Hayward Marsh is no longer available in its current form. Some of these alternatives include: on-site options, such as equalization storage facilities, or shallow water discharge to Old Alameda Creek; off-site options, such as off-site equalization storage, restoration of the Hayward Marsh, and wet weather recycled water use; and influent flow reduction options, such as site drainage flow reduction, conveyance system storage, and satellite treatment/disposal.

Phase 1 of the effluent management will compare the feasibility of these alternatives, where, during an initial screening, some will be eliminated from further consideration. In Phase 2, which will be scoped once this screening level work is complete, the recommended option(s) would be subjected to a more detailed study that would identify the costs, benefits and implementation plan for the most preferable effluent management option(s).

The purpose of Task Order No. 2 is to conduct Phase 1 of this effort. The feasibility assessment of potential alternatives will include a life cycle cost analysis for up to four options. Task Order No. 2 will include the following scope of services:

1. Collect, compile, and review data or documents needed to identify and discuss effluent management alternatives.
2. Develop effluent management alternatives that best match the priorities of the District, minimize cost, and meet the expected future regulatory requirements.
3. Conduct two workshops with staff to compare and screen alternatives.
4. Prepare the draft and final Effluent Management Study Technical Memoranda.

The scope of services and their respective fees are summarized as follows:

<b>Task No.</b>	<b>Task Description</b>	<b>Fee</b>
1	Data Collection	\$4,590
2	Development of Effluent Management Options	\$24,150
3	Option Screening	\$34,859
4	Project Management	\$6,278
	<b>Total Not-to-Exceed Fee</b>	<b>\$69,877</b>

Staff has reviewed the scope and fee and found the proposal to be reasonable, considering the required level of effort. All work under this task order is expected to be completed by June 2017.

The total amounts for the Project's agreement with RMC Water and Environment are summarized in the table below:

<b>Description</b>	<b>Fee</b>
Task Order No. 1 – Plant Master Plan	\$265,217
Amendment No. 1 to Task Order No. 1 – Additional Services	\$39,700
Task Order No. 2 – Effluent Management Study	\$69,877
<b>Total Not-to-Exceed Fee for this Agreement</b>	<b>\$374,794</b>

Staff recommends the Board authorize the General Manager to execute Task Order No. 2 with RMC Water and Environment in the amount of \$69,877 for the Plant Master Plan.

PRE/SEG/RC/CB:ks

Attachment: Task Order No. 2

# PLANT MASTER PLAN

TASK ORDER NO. 2  
to  
AGREEMENT

BETWEEN

UNION SANITARY DISTRICT

AND

RMC WATER AND ENVIRONMENT

FOR

PROFESSIONAL SERVICES

Dated December 14, 2016

## 1. PURPOSE

The purpose of Task Order No. 2 is to evaluate long term strategies for equalization, storage, and reuse and/or disposal of treated effluent from the District's Alvarado Wastewater Treatment Plant (WWTP).

## 2. PROJECT UNDERSTANDING

The District can currently discharge treated effluent in various ways, namely to the East Bay Dischargers Authority (EBDA) system, to Hayward Marsh, and during storm events, to Old Alameda Creek. The WWTP is permitted to discharge up to 33 million gallons per day (MGD) average dry weather flow (ADWF) and 42.9 MGD peak daily flow of its wastewater to the EBDA outfall (Order No. R2-2012-0004, NPDES No. CA 0037869). During peak weather events when total wastewater flow discharged by EBDA member agencies is beyond the capacity of the current system, up to 20 MGD of treated effluent emanating from the District's WWTP can be directed to Hayward Marsh. After the secondary treated effluent flows through the marsh, the high quality reclaimed water flows to San Francisco Bay. Additional discharge during peak flow events is permitted to Old Alameda Creek. Although the previous maximum discharge flow limitation of 8.4 MG per discharge event is not retained in the current

permit for Old Alameda Creek, calculations performed were based on this assumed limitation.

The District's equalization storage requirements for a 10-year storm event were previously evaluated by Brown and Caldwell in the Flow Equalization Report Update (November 2013). Although the current peak flow of 56.9 MGD would exceed the District's capacity in the EBDA pipeline, Brown and Caldwell concluded that the excess flow could, under current Hayward Marsh operational conditions, be discharged to Old Alameda Creek without the need for additional storage. However, within two to three years Hayward Marsh may not be available to the District for treated effluent discharge. In addition, for the full buildout condition of the District's service area, the 10-year storm event could result in flows approaching approximately 73.3 MGD. Under this future condition, 53.6 million gallons (MG) of equalization storage would be required if there were no discharge to Hayward Marsh, even with capacity to discharge to Old Alameda Creek (using current regulatory criteria). Although an exact time frame for buildout is not defined, it is believed that buildout conditions would occur beyond 2035.

Therefore, the District is in the process of identifying and evaluating alternatives for management and/or disposal of peak wet weather flows once Hayward Marsh is no longer available in its current form. Phase 1 of the Effluent Management Study will compare the feasibility of these options, where, during an initial screening, some will be eliminated from further consideration. A narrower set of up to four options will then be subjected to a life cycle cost analysis to further narrow down the evaluation to one or two recommended options. A breakdown of order of magnitude capital and operations & maintenance (O&M) costs for each option will be provided as part of the life cycle cost analysis.

In Phase 2, which will be scoped once this screening level work is complete, the recommended option(s) would be subjected to a more detailed study that would identify the costs, benefits and implementation plan for the most preferable effluent management option(s).

### 3. PROJECT COORDINATION

All work related to this task order shall be coordinated through the District's Project Manager, Curtis Bosick.

#### 4. SCOPE OF SERVICES

The task numbers in this Scope of Services are associated with the cost data presented in Exhibit A.

##### **Task 1: Data Collection**

This task includes collection, compilation, and review of data needed to identify and discuss the effluent management options identified in this scope of work. A list of reference documents is as follows:

- RMC (2016), ACWD/USD Recycled Water Feasibility Study
- HDR and Brown and Caldwell (2016), Bay Area Clean Water Agencies Nutrient Reduction Study
- Brown and Caldwell (2013), Flow Equalization Report Update
- Carollo (2010), EBDA System Flow Master Plan
- RMC (2014), ACWD Alternative Water Supply Study Board Workshop
- RMC (2015), Hayward Marsh Rehabilitation Options Study
- RMC (2011), USD Treatment Plant Drainage Study
- RMC (2015), USD Alvarado Wastewater Treatment Plant Site Use Study

##### **Task 2: Development of Effluent Management Options**

Under this task, the characteristics of each effluent management option will be defined, in part through use of the information gathered during Task 1. Engineer shall prepare a draft summary of the developed options and shall submit it to the District for review. A review meeting shall be held to discuss the items included in the draft summary of options. A common understanding of the nature of the various options will help to identify which alternatives can be screened out in Task 3.

The following is a description of the set of options that will be subjected to the initial feasibility comparison, as well as a description of the process that will be undertaken during this task to screen out options that are not feasible or preferable.

##### **Wastewater Treatment Plant On-Site Options**

###### **Equalization Storage**

Under this option, the District would utilize the triangular 17-acre parcel adjacent to the WWTP, and owned by the Alameda County Flood Control

District, to construct an equalization basin for temporary storage of secondary treated effluent when the EBDA system is reaching its capacity. The land area of the site could decrease with consideration of a deeper equalization storage basin. Stored effluent would be metered back into the EBDA system after a peak flow event. However, much of the site is jurisdictional wetland, and its use for storage would present permitting constraints. A wetland delineation was conducted at a preliminary level by WRA as the District's consultant, and further strategy will be necessary to shed light on the extent of potential permitting constraints and mitigation options. If possible, the equalization storage facilities would be specifically sited and designed to minimize impacts on designated wetlands. Engineer shall engage WRA as a sub-consultant to further develop and evaluate this option. A design variation to be considered is a water quality enhancement wetland with freeboard provided for effluent storage capacity.

### **Shallow Water Discharge**

#### **Old Alameda Creek**

Under this option, the Hayward Marsh peak flow discharge capacity would be replaced by Old Alameda Creek as a discharge location for treated wastewater. Old Alameda Creek is currently used as an emergency outfall during peak wet weather flow conditions, but no maximum discharge rate is specified in the permit. Its discharge capacity could be increased long-term from the 8.4 MG per event assumption with some increase in treatment level at the WWTP. Future WWTP improvements would need to be accelerated (more quickly than what is anticipated by the District to comply with future nutrient removal requirements) to optimize plant operations while removing some nutrients, especially ammonia; in the long term, full biological nutrient removal and additional advanced treatment could then be fully implemented, if and as needed.

Engineer shall evaluate what constituents of concern will need to be addressed to get the discharge permitted, what treatment levels may be needed, and what ambient water quality and flow conditions would need to be characterized to establish dilution criteria and mixing zones.

#### **Eden Landing Marsh**

As the California State Coastal Conservancy (SCC) continues to implement salt marsh restoration in the South Bay and pursues wetland restoration in the vicinity of USD, the District may be able to

pursue a wetland creation and shallow water discharge project with SCC. Like Hayward Marsh, Eden Landing Marsh would be used during peak weather events when the EBDA system is at capacity. However, it would not be possible to implement this option within the time frame of the existing sunset of the Hayward Marsh permit, but it may be part of a larger strategy with EBDA in the region such that some permitting relief may be achievable for extending discharge at Hayward Marsh and/or expanding the Alameda Creek discharge in the interim. Compared to the Old Alameda Creek option described above, this option would require fewer near-term treatment facility improvements, while providing some additional treatment or water quality enhancement in the wetland before discharge. Engineer shall engage WRA as a sub-consultant to further develop and evaluate this option.

### **Influent Flow Reduction Options**

#### **Inflow/Infiltration and Site Drainage Flow Reduction**

Stormwater inflow/infiltration (I/I) into the wastewater infrastructure system occurring during wet weather events decreases the amount of wastewater that can be conveyed through the system. This option would involve implementation of strategies that would reduce the level of I/I into the wastewater system. Engineer shall help in determining the potential flow reduction associated with this strategy; however, because the District has relatively low I/I for systems of its size and age, and no existing unaddressed capacity or condition issues, it is not anticipated that this will be a stand-alone solution to offset the loss of Hayward marsh discharge capacity.

Similarly, RMC conducted a Treatment Plant Drainage Study in 2011 which highlighted capacity constraints with the Plant's Site Waste Pump Station (SWPS). During high rainfall events, peak onsite stormwater flows stress the capacity of the SWPS and increase the risk of exceeding the District's contractual peak capacity with the EBDA system. The study identified and evaluated alternatives for storing stormwater runoff and reducing peak flows at the WWTP. Because the Drainage Study is constrained within the Plant site, this approach to influent flow reduction may be more feasible compared to addressing I/I issues across the District's collection system.

#### **Conveyance System Storage**

This option involves evaluating the possibility of expanding usage of available storage within the existing conveyance system. For example,

the Brown and Caldwell report identified how the influent storage facility at the Irvington Pump Station could be operated differently, and influent storage could be added at the Newark Pump Station to reduce peak flows at the WWTP and subsequent effluent discharge peaks. This approach will not be sufficient to offset the loss of the Hayward Marsh discharge, but could be a component of the solution.

### **Satellite Treatment and Disposal**

This option would involve treatment of wastewater at either Irvington or Newark Pump Station and reuse and/or disposal of the treated effluent in that basin area. This option has been evaluated in the past, specifically at Irvington, and was determined to be infeasible because a location for shallow discharge of the highly treated recycled water during lower demand periods was problematic. Now that EBDA partners are considering wetland treatment and shallow water discharge at various locations in the system, this option may deserve additional consideration, at least at the screening level.

### **Off-Site Options**

#### **Off-Site Equalization Storage (i.e., Hayward Ponds)**

Under this option storage could be developed at the City of Hayward oxidation ponds. Approximately 50 acres of existing clay-bottomed ponds near the Hayward wastewater treatment plant could be converted to storage basins for District's use. Stored effluent would be metered back into the EBDA system after a peak flow event. Some modeling work may need to be done, although the Engineer has access to the Flow Equalization Update Project report prepared by Brown and Caldwell in 2013. Additionally, a hydraulic analysis of the EBDA system between the WWTP and the Hayward Ponds was conducted in the EBDA System Flow Master Plan (Carollo 2011).

Alternatively, similar permutations of this option can also be considered. For example, flows may be pumped from the WWTP to the Hayward Ponds, in conjunction with a regional EBDA project, install a new pump station and wet well to manage combined flows into EBDA. This option depends upon other agencies within EBDA (foremost, Hayward) to collaborate to make this project feasible, and to implement it in a timely manner.

#### **Restore Hayward Marsh**

This option involves restoration of Hayward Marsh to improve and prolong operational functions within the marsh. Rehabilitation options and their

costs were previously evaluated in the Hayward Marsh Rehabilitation Options Study (RMC 2015). It is estimated that restoration would cost up to \$27 million to implement. Challenges with this option include ongoing management, operations and maintenance of the marsh, clarifying the long-term objectives with East Bay Regional Parks District and resource agency stakeholders, and collaboration with multiple agencies whose objectives for the marsh have varied from those of the District.

### **Increase EBDA Hydraulic Capacity**

#### **Infrastructure Improvements**

Implementation of various infrastructure improvements to the EBDA could enable an increase in the EBDA system's hydraulic capacity. This project would rely upon work done recently by EBDA on its system capacity. It is anticipated that this option will involve a major investment in infrastructure and rely on extensive collaboration with multiple EBDA partner agencies.

#### **Coordination with EBDA Agencies to Purchase Capacity**

Coordination between EBDA agencies to increase the District's permitted capacity in discharging to EBDA's wastewater system could offset the loss of capacity that is currently available through discharging to Hayward Marsh.

### **Wet Weather Recycled Water Use (i.e., IPR)**

Under this option, treated effluent would undergo advanced treatment and be injected into groundwater basins for indirect potable use. However, the brine reject from the advanced treatment process would still be released to EBDA. There are various release options under this scenario, ranging from 5 to 20 MGD. RMC previously assisted Alameda County Water District (ACWD) in a Water Supply Alternatives Study, where the 5 MGD option was explored. For any variants greater than 5 MGD, purchase of extracted groundwater would need to be coordinated with other agencies in the region. Engineer shall assist with the development of the most feasible option from the perspective of what ACWD and its regional partners may be interested in developing.

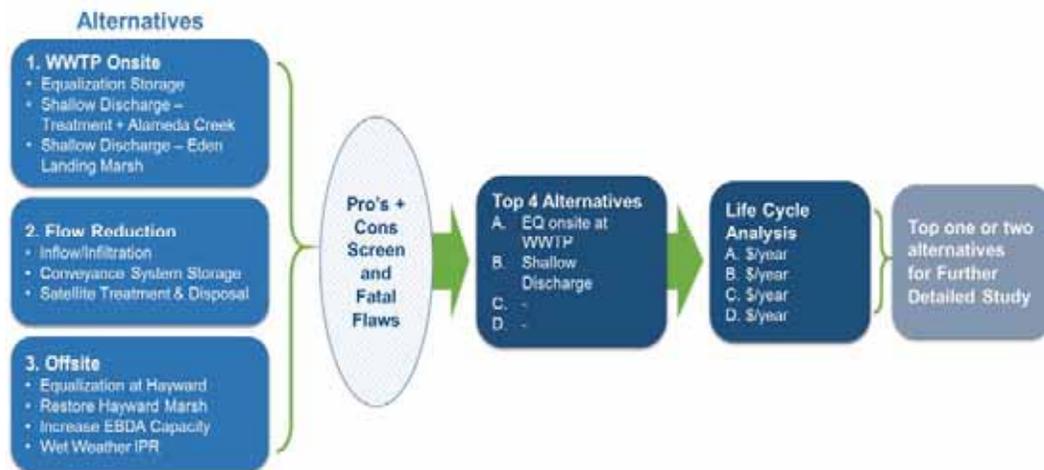
#### **Assumptions:**

- Engineer shall attend one workshop with District staff to brainstorm and define the effluent management options.
- It is assumed that further development of the range of effluent management options can be accomplished via use of existing

information, and that preparation of new studies would not be required to complete this task.

### Task 3: Option Screening

Under this task, the set of effluent management options will be subjected to an evaluation process through which some options will be eliminated from further consideration, and one or two will emerge as the most preferable options. This evaluation process is illustrated in the following diagram:



OPC will be engaged as a sub-consultant to RMC during work on Task 3 to assist with development of the proper action plan, scope of work and risk assessment for the future acquisition of key parcels for the project.

Engineer shall formulate a work plan for completion of Phase 2 of the Effluent Management Study based on the results from Phase 1. During Phase 2, Engineer shall subject the top one or two effluent management options that were selected in Phase 1 to a more detailed level of analysis, to identify the costs, benefits and implementation plan for one or two of the most preferable options.

#### Assumptions:

- Engineer shall attend one screening workshop to discuss and screen the effluent management options.
- Engineer shall attend one meeting with District's staff to review comments on the draft TM.

#### **Task 4: Project Management**

Engineer shall coordinate with the District's Project Manager and provide monthly reports to describe progress on the project. It is expected that regular progress meetings with District staff will be held to ensure the project stays on schedule. These meetings may be held in person or as a conference call.

#### 5. DELIVERABLES

Project deliverables are listed below:

##### **Task 2: Development of Effluent Management Options**

###### Deliverables:

- Draft summary of the developed effluent management options.

##### **Task 3: Option Screening**

###### Deliverables:

- RMC will prepare a draft technical memorandum (TM) that documents the options evaluation process as well as the results of Phase 1 of the Effluent Management Study.
- After District's review of the draft TM, RMC will incorporate District's comments and revise the document and prepare a Final version of the TM.
- Work plan for Phase 2 of the Effluent Management Study.

##### **Task 4: Project Management**

###### Deliverables:

- Monthly invoices and progress reports.

#### 6. PAYMENT TO THE ENGINEER

Payment to the Engineer shall be as called for in Article 2 of the Agreement. The billing rate schedule is equivalent to an overall labor multiplier of 3.22, including profit. Subconsultants and outside services

will be billed at actual cost plus 5%; other direct costs will be billed at actual cost; and mileage will be billed at prevailing IRS standard rate.

Total charges to the DISTRICT not-to-exceed amount shall be \$69,877. A summary of the anticipated distribution of cost and manpower between tasks is shown in Exhibit A.

The following table summarizes the previously-executed and proposed task orders and amendments under the Agreement:

<b>Task Order / Amendment</b>	<b>Not to Exceed Amount</b>	<b>Board Authorization Required?</b>	<b>District Staff Approval</b>
Task Order No. 1 – Plant Master Plan	\$265,217	Yes	Paul Eldredge
Amendment No. 1 to Task Order No. 1	\$39,700	No	Sami Ghossain
Task Order No. 2 – Effluent Management	\$69,877	Yes	Paul Eldredge
<b>Total</b>	<b>\$374,794</b>		

## 7. TIME OF COMPLETION

All work defined in this Task Order shall be complete in 95 calendar days after the execution of this Task Order and subject to the conditions of Article 3 of this Agreement. The anticipated milestones are approximately as follows:

- Notice to Proceed: March 27, 2017
- Effluent Management Brainstorming Workshop: April 10, 2017
- Effluent Management Options Summary: April 24, 2017
- Screening Options Workshop: May 3, 2017
- Draft Effluent Management Study TM: May 26, 2017
- Draft Effluent Management Study TM Review Meeting: June 7, 2017
- Final Effluent Management Study Submittal: June 28, 2017

8. KEY PERSONNEL

Engineering personnel assigned to this Task Order No. 1 are as follows:

<u>Role</u>	<u>Key Person to be Assigned</u>
Principal-In-Charge	Steve Clary
Project Manager	Dave Richardson
Project Engineer	Mark Takemoto

Key personnel shall not be changed except in accordance with Article 8 of the Agreement.

IN WITNESS WHEREOF, the parties hereto have made and executed this Task Order No. 2 as of March \_\_\_\_, 2017 and therewith incorporate it as part of the Agreement.

DISTRICT

ENGINEER

Union Sanitary District

RMC Water and Environment

By: \_\_\_\_\_  
Paul R. Eldredge, P.E.  
General Manager/District Engineer

By: \_\_\_\_\_  
David Richardson  
Principal Engineer

Date: \_\_\_\_\_

Date: \_\_\_\_\_



**Union Sanitary District  
 Effluent Management Study: Phase 1**

Tasks	Labor										Total Hours	Total Labor Costs (1)	Outside Services			ODCs		Total Fee	
	PIC	PM	Tech/ Env Lead	Staff Engineer	Engineering Support	Engineering Support	Engineering Support	Planning Support	Graphics	Admin.			Environmental	Land	Subtotal	Sub Consultant Total Cost (2)	ODCs		Total ODCs (3)
	Dave Richardson \$310	Mark Takemoto \$266	Rudy Calderon \$237	Joey Yan \$152	Gisa Ju \$295	Carrie del Boccio \$237	Mary Cousins \$237	Robin Cort \$295	Graphics and Support \$145				WRA	OPC					
<b>Task 1: Data Collection</b>	2	4	2	16	0	0	0	0	0	0	24	\$4,590	\$0	\$0	\$0	\$0	\$0	\$0	\$4,590
<b>Task 2: Development of Effluent Management Options</b>	8	24	12	40	4	4	12	4	0	0	108	\$23,940	\$0	\$0	\$0	\$0	\$200	\$210	\$24,150
<b>Task 3: Option Screening</b>	14	26	10	44	0	0	0	0	4	4	102	\$21,314	\$7,000	\$5,700	\$12,700	\$13,335	\$200	\$210	\$34,859
<b>Task 4: Project Management</b>	4	12	0	8	0	0	0	0	0	4	28	\$6,068	\$0	\$0	\$0	\$0	\$200	\$210	\$6,278
<b>TOTAL</b>	<b>28</b>	<b>66</b>	<b>24</b>	<b>108</b>	<b>4</b>	<b>4</b>	<b>12</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>262</b>	<b>\$55,912</b>	<b>\$7,000</b>	<b>\$5,700</b>	<b>\$12,700</b>	<b>\$13,335</b>	<b>\$600</b>	<b>\$630</b>	<b>\$69,877</b>

1. The individual hourly rates include salary, overhead and profit.
2. Subconsultants will be billed at actual cost plus 5%.
3. Other direct costs (ODCs) such as reproduction, delivery, mileage (rates will be those allowed by current IRS guidelines), and travel expenses, will be billed at actual cost.
4. RMC reserves the right to adjust its hourly rate structure and ODC markup at the beginning of the calendar year for all ongoing contracts.



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

Karen W. Murphy  
*Attorney*

**DATE:** March 20, 2017

**MEMO TO:** Board of Directors - Union Sanitary District

**FROM:** Paul R. Eldredge, General Manager/District Engineer  
Sami E. Ghossain, Manager of Technical Services  
Raymond Chau, CIP Coach  
Thomas Lam, Associate Engineer

**SUBJECT:** Agenda Item No. 10 - Meeting of March 27, 2017  
**Consider a Resolution to Accept the Construction of the Plant Facilities Improvements Project from D. W. Nicholson Corporation and Authorize Recordation of a Notice of Completion**

### **Recommendation**

Staff recommends the Board consider a resolution to accept the construction of the Plant Facilities Improvements Project (Project) from D. W. Nicholson Corporation (DWN) and authorize recordation of a Notice of Completion.

### **Background**

Various equipment and facilities at the plant and the Newark Pump Station were in need of rehabilitation, replacement, or modification in order to improve the plant and pump station's operation and maintenance. The scope of work or the cost for each improvement was not extensive enough to warrant its own standalone construction project. Therefore, these improvements were combined into a larger construction project to allow for more favorable bids. In 2004, the District constructed a similar project, the Plant Mechanical Improvements Project, which included various mechanical, electrical, and site improvements in the Plant.

### **Project Scope**

The Project included the following improvements:

1. Repair of the lining in the 60-inch primary effluent pipe between the primary clarifiers and Lift Station No. 1.
2. Installation of two jib cranes and safety hand railing on the roof of the Degritter Building to provide for the safe removal and other maintenance activities of the sludge degritter equipment.
3. Relocation of the concrete island at the front vehicle gate to provide safer access for large trucks.
4. Installation of permanent groundwater dewatering pumps around Primary Clarifiers Nos. 1-4 to reduce uplift forces exerted on out-of-service tanks.
5. Recoating of the structural steel beams located at the Solar Carport facility.
6. Replacement of one of the two bar screens at the Headworks Building.
7. Installation of permanent polymer solution piping from the polymer preparation facilities in the Gravity Belt Thickener (GBT) Building to the effluent channel of the aeration basins.
8. Miscellaneous concrete repairs of the Plant surge tower, chlorine contact tank walkway, primary effluent flow meter vault, and Newark Pump Station wall and surge tower.
9. Replacement of digester sludge heat exchanger No. 3 and No. 6.
10. Recoating of the structural steel beam joints at the Covered Storage Building.

Attached Figure 1 shows the locations of these improvements in the Plant.

West Yost Associates completed the design of the Project in November 2015.

### **Construction Contract**

On December 14, 2015, the Board awarded the Project's construction contract to DWN in the amount of \$1,570,346. Staff issued the Notice to Proceed to DWN on January 11, 2016. The 365-day project was scheduled to be completed on January 9, 2017. DWN substantially completed the Project on January 9, 2017. Staff provided construction management and inspection services for the Project.

The attached Figures 2 through 12 show the completed improvements.

### **Change Orders**

The Project included ten change orders for a total credit of \$368,340.67, which is approximately 23% below the original contract amount. The large deduction is primarily due to Change Order No. 9 which is explained below. All negotiations have been finalized and the change orders have been executed. A summary of these change orders follows in Table 1:

**Table 1  
 Change Order Summary**

<b>No.</b>	<b>Description</b>	<b>Amount</b>
1	Change in the heat exchanger gasket type (Owner Request)	\$1,995.56
2	Installation of precast concrete trench for the polymer solution piping due to underground utility obstructions (Unforeseen Condition)	\$11,165.00
3	Remove and reinstall metal plates at the Degritter Building roof (Unforeseen Condition)	\$5,000.00
4	Vehicle gate modifications to allow for security camera installation (Owner Request)	\$3,500.00
5	Install new handrail section at the Degritter building roof (Owner Request)	\$3,219.00
6	Repair water-damaged roof sections on Degritter Building (Unforeseen Condition)	\$3,626.00
7	Repair coating on one additional beam at the Solar Carport (Owner Request)	\$2,956.00
8	Repair the 60" Primary Effluent pipeline using a different repair material (Unforeseen Condition)	\$39,941.00
9	Modification to the 60" Primary Effluent pipeline repair (Unforeseen Condition)	(\$436,156.43)
10	Delete replacement of bolts and nuts at the primary effluent flow meter vault (Owner Request)	(\$3,586.80)
<b>Change Order Total</b>		<b>(\$368,340.67)</b>

A summary of the notable change orders is provided below.

Change Order No. 2, in the amount of \$11,165, was for the installation of a precast concrete trench between the GBT Building and Aeration Basin No. 5-7. The Contract specified the installation of polymer solution piping from the GBT Building to the effluent channel of the aeration basins. The piping between the GBT Building and the west wall of Aeration Basins 5-7 was originally designed to be direct buried in the roadway. However, during excavation, the contractor encountered underground utilities that obstructed the construction of the piping. To cross these utilities, the contractor installed a shallow traffic-rated precast concrete trench in the road above the utilities and installed the polymer solution piping inside the concrete trench.

Change Order Nos. 8 and 9 were for the modification to the repair of the 60-inch Primary Effluent pipeline lining. In 2008, the District hired V&A Consulting Engineers to inspect the

pipeline and assess its condition. V&A reported corrosion damage in the existing cement mortar lining of the pipeline, and recommended repairs with SewperCoat, a calcium aluminate mortar product that is designed to be used in wastewater environments highly susceptible to corrosion. However, after the contractor cleaned the pipeline, it was determined that the existing cement mortar lining was not damaged throughout and that only minor repairs to the lining and the underlying steel pipeline were necessary. It is possible that the build-up of wastewater materials on the lining during the past 30 years made the lining appear to be deteriorating.

Furthermore, and due to the minor corrosion damage in the cement mortar lining, it was determined that Sewpercoat was not the appropriate product to use in those areas of minor repairs. Instead, the consultant recommended the use of SikaTop 123, a polymer-modified and cement-based mortar product, to repair the damaged areas of the lining and steel pipeline. The change in the lining repair was tracked on a time and material basis and paid under Change Order No. 8 in the amount of \$39,941. The removal of SewperCoat in the lining repair resulted in deleting the scope in Bid Item Nos. 6, 7, and 9 and Bid Alternate B and a net credit of \$436,156.43 to the District under Change Order No. 9.

DWN is in the process of completing the Project's punch list items and the District has assumed beneficial use of the Project. Staff recommends the Board considers a resolution to accept the construction of the Plant Facilities Improvements Project from D. W. Nicholson Corporation and authorize recordation of a Notice of Completion.

PRE/SEG/RC/TL:ks

Attachment: Figure 1 – Project Locations  
Figures 2 through 8 – Photos of the Project improvements  
Resolution  
Notice of Completion

**FIGURE 1  
PROJECT LOCATIONS**

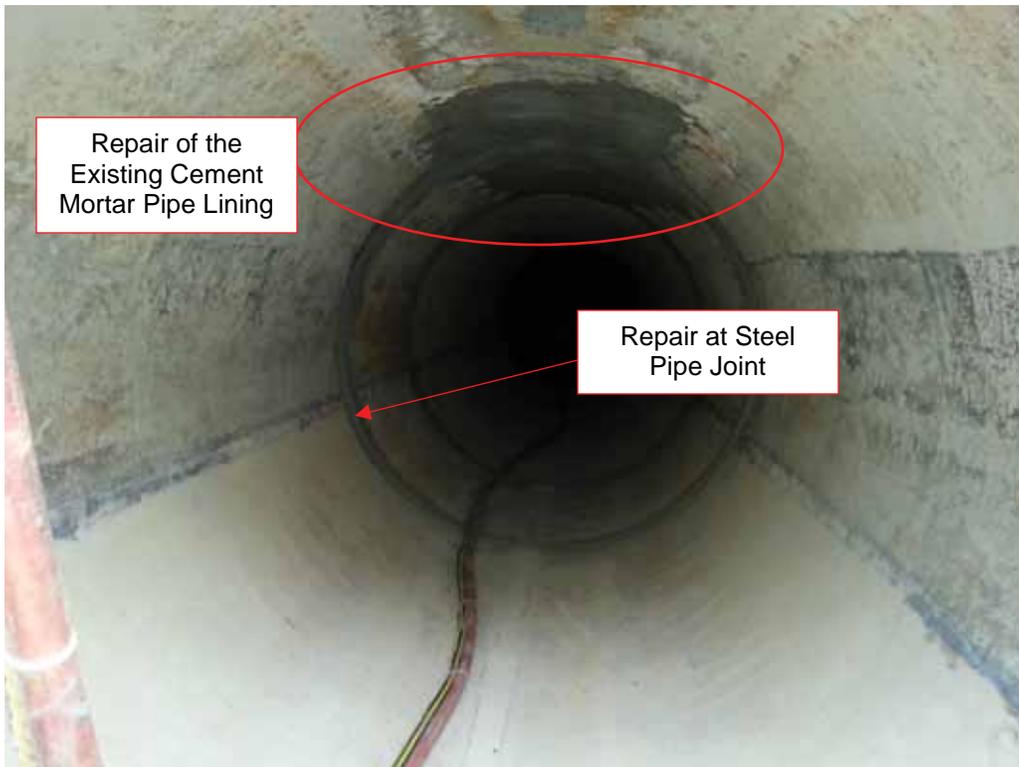




Minor Deterioration of the Existing Cement Mortar Pipe Lining

Corrosion at the Steel Pipe Joint

Before repair



Repair of the Existing Cement Mortar Pipe Lining

Repair at Steel Pipe Joint

After repair

Figure 2 –Repair of the lining in the 60-inch primary effluent pipe



Figure 3 – New jib cranes on the roof of the Degritter Building



Figure 4 – New safety hand railing on the roof of the Degritter Building



Figure 5 – Relocation of the concrete island at the front vehicle gate



Figure 6 – New bar screen at the Headworks Building



Flow Meter Vault – before repair



Flow Meter Vault – after repair

Figure 7a – Miscellaneous concrete repairs



Newark Pump Station wall – before repair



Newark Pump Station wall – after repair

Figure 7b – Miscellaneous concrete repairs



Figure 8a – New digester sludge heat exchanger No. 3



Figure 8b – New digester sludge heat exchanger No. 6

**RESOLUTION NO. \_\_\_\_\_**

**ACCEPT CONSTRUCTION OF THE  
PLANT FACILITIES IMPROVEMENTS PROJECT  
LOCATED IN THE CITY OF UNION CITY, CALIFORNIA  
FROM D.W. NICHOLSON CORPORATION**

RESOLVED, by the Board of Directors of the UNION SANITARY DISTRICT that it hereby accepts Plant Facilities Improvements Project from D.W. Nicholson Corporation, effective March 27, 2017.

FURTHER RESOLVED: That the Board of Directors of the UNION SANITARY DISTRICT authorize the General Manager/District Engineer, or his designee, to execute and record a "Notice of Completion" for the Project.

On motion duly made and seconded, this resolution was adopted by the following vote on March 27, 2017:

AYES:

NOES:

ABSENT:

ABSTAIN:

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TOM HANDLEY  
President, Board of Directors  
Union Sanitary District

Attest:

---

ANJALI LATHI  
Secretary, Board of Directors  
Union Sanitary District



**RECORDING REQUESTED BY  
AND WHEN RECORDED  
RETURN TO:**

**Regina McEvoy  
Union Sanitary District  
5072 Benson Road  
Union City, CA 94587**

NO RECORDING FEE – PER GOVERNMENT CODE SECTIONS 6103 & 27283 (R&T Code 11911)

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**NOTICE OF COMPLETION**

**NOTICE IS HEREBY GIVEN** by the **UNION SANITARY DISTRICT**, Alameda County, California, that the work hereinafter described, the contract for the construction of which was entered into on December 14, 2015, by said District and **D.W. NICHOLSON CORPORATION**, 24747 Clawiter Road, Hayward, CA 94545, Contractor for the Project, “Plant Facilities Improvements Project,” was substantially completed on January 9, 2017 and accepted by said District on March 27, 2017.

The name and address of the owner is the **UNION SANITARY DISTRICT**, at 5072 Benson Road, Union City, CA 94587.

The estate or interest of the owner is: FEE SIMPLE ABSOLUTE.

The description of the site where said work was performed and completed is the Union Sanitary District’s Wastewater Treatment Plant, located at 5072 Benson Road, City of Union City, County of Alameda, State of California.

The undersigned declares under penalty of perjury that the foregoing is true and correct.

Executed on \_\_\_\_\_ at UNION CITY, CALIFORNIA.

\_\_\_\_\_  
PAUL R. ELDREDGE, P.E.  
GENERAL MANAGER/DISTRICT ENGINEER  
UNION SANITARY DISTRICT



**Directors**  
Manny Fernandez  
Tom Handley  
Pat Kite  
Anjali Lathi  
Jennifer Toy

**Officers**  
Paul R. Eldredge  
*General Manager/  
District Engineer*

Karen W. Murphy  
*Attorney*

**DATE:** March 20, 2017

**MEMO TO:** Board of Directors - Union Sanitary District

**FROM:** Paul R. Eldredge, General Manager/District Engineer  
Sami E. Ghossain, Manager of Technical Services  
Raymond Chau, CIP Coach  
Derek Chiu, Assistant Engineer

**SUBJECT:** Agenda Item No. 11 - Meeting of March 27, 2017  
**Information Item: Update on the Subsurface Investigation at the Alvarado Wastewater Treatment Plant**

## **Recommendation**

Information only.

## **Background**

The Alameda County Water District (ACWD) is responsible for regulating the groundwater supply within our service area, most of which is underlain by aquifers that provide drinking water for the three cities. In 1999, pursuant to ACWD's request to investigate potential releases of petroleum hydrocarbons into soil and groundwater beneath the treatment plant property, the District initiated environmental investigation activities in three areas of the plant. These areas are shown in Figure 1 and are summarized as follows:

- Former Boneyard Area – The District conducted an environmental investigation and remediation in this area (Figure 2), which was previously used for equipment storage and maintenance. The investigation indicated a subsurface petroleum impact of primarily diesel-range hydrocarbons. In the summer of 1999, a source removal operation was conducted with approximately 5,000 cubic yards of impacted soil excavated and disposed offsite. Upon completing the soil removal, the District backfilled the excavation with clean fill, installed three groundwater monitoring wells (MW-1 through MW-3) and initiated monitoring these wells.

- Former 550-Gallon Gasoline Underground Storage Tank (UST) Area – In August 1999, a subsurface investigation was initiated in this area (Figure 3) after the observation of hydrocarbon odors emanating from an excavation performed during construction at the facility. In September 2000, the District removed this UST under the oversight of the Union City Environmental Program Department (UCEPD) and the ACWD. Observations made during the UST removal indicated that the subsurface petroleum hydrocarbons likely originated from a leak in an underground fuel line beneath a fuel dispenser. The District over-excavated impacted soil in the suspected source area.

In 2000, another subsurface investigation was conducted at the site to assess whether petroleum hydrocarbons were present in soil near a 10,000-gallon diesel UST and a 1,000-gallon waste oil UST. This investigation was conducted at the request of the UCEPD after pressure testing indicated potential failures of the secondary containment systems of these USTs. The investigation included collecting soil and grab groundwater samples from borings advanced throughout the area. The laboratory results indicated the presence of hydrocarbons associated with gasoline, primarily methyl tertiary butyl ether (MTBE), and not diesel or waste oil. It was concluded that these hydrocarbons were likely from the former 550-gallon gasoline UST.

In 2003, the District installed and initiated monitoring of five groundwater monitoring wells (MW-5 through MW-9) in this area. Well MW-4 was an existing well in the area and was included in the groundwater monitoring program.

- Closed-in-place 6,000-gallon Diesel UST Area – The subsequent investigation conducted in 2000 also included sampling the subsurface in the vicinity of a 6,000-gallon diesel UST located in the southwest corner of the plant (Figure 4). The soil and grab groundwater samples collected adjacent to this UST contained detectable concentrations of petroleum hydrocarbons in the diesel range. The 6,000-gallon diesel UST was closed-in-place by the District in June 2005, under oversight from the City of Union City and the ACWD.

In 2003, the District installed and initiated monitoring of one groundwater well (MW-10) in this area.

### **Groundwater Monitoring Program**

The purpose of the plant's groundwater monitoring program is to document groundwater conditions in the areas of concern. The monitoring is performed to evaluate changes in water levels and groundwater flow direction and gradient, establish water quality conditions, and assess hydrocarbon concentration trends. The ten groundwater monitoring wells were initially monitored quarterly but upon approval of the ACWD, the frequency was reduced to semi-

annual or annual in subsequent years. Due to the analytical results at wells MW-4, MW-9, and MW-10, the ACWD approved the removal of these wells from the monitoring program and the District closed the wells in 2008.

The current sampling schedule of the remaining seven wells is summarized in Table 1 below:

**Table 1 – Summary of Sampling Schedule**

Well	Sampling Frequency	Sampling Constituents
MW-1	Annual	TPH-D, TPH-MO, Monthly Purging
MW-2	Annual	TPH-D, TPH-MO
MW-3	Annual	TPH-D, TPH-MO
MW-5	Annual	MTBE, TBA
MW-6	Removed from Sampling	Groundwater Level Measurement Only
MW-7	Removed from Sampling	Groundwater Level Measurement Only
MW-8	Annual	MTBE, TBA

Legend

TBA = tertiary-butyl alcohol

MTBE = methyl tertiary-butyl ether

TPH-D = total petroleum hydrocarbons as diesel

TPH-MO = total petroleum hydrocarbons as motor oil

Since 2007, staff has conducted monthly purging of the light, non-aqueous phase liquid (LNAPL) present in well MW-1. The objective of this purging is to eliminate the LNAPL layer observed in this monitoring well and mitigate the elevated dissolved petroleum hydrocarbons present in the groundwater in its vicinity.

Following the 2015 annual monitoring event, and in consultation with ACWD, staff switched to placing a hydrocarbon absorbing sock in MW-1 to remove LNAPL in place of the monthly purging. It was expected to be more efficient in removing the hydrocarbons than the monthly purging. However, the results of the 2016 annual monitoring event indicated otherwise. Staff has discontinued the use of the hydrocarbon absorbing sock and resumed monthly purging of MW-1.

## Annual 2016 Groundwater Monitoring Event

In October 2016, staff procured the services of Brown and Caldwell to sample the groundwater from the wells, analyze the test results, and prepare a report. The conclusions from the annual 2016 groundwater monitoring event are as follows:

1. Groundwater elevations in the Former Boneyard Area and the Former 550-Gallon UST Area have remained consistent throughout the year with previous years, with the groundwater flow direction corresponding with the results from the previous monitoring events.
2. Three of four monitoring wells (MW-2, MW-5, and MW-8) measured groundwater with an electrical conductivity that exceeded the State Water Resources Control Board's (SWRCB's) acceptable limits for a groundwater source to be considered suitable, or potentially suitable, for domestic or municipal drinking water supply. Electrical conductivity in water is a measurement to determine the concentration of total dissolved solids.
3. A less than 0.1 foot thick layer of LNAPL was encountered in well MW-1 during the Annual 2016 event. This layer of LNAPL decreased slightly from 2015.
4. From August 2007 to September 2015, the District has conducted 91 monthly purging events on MW-1 removing a total of 536 gallons of groundwater/LNAPL mixture and removing approximately 4.2 gallons of LNAPL. It appears that these purging events have been successfully mitigating the petroleum hydrocarbon concentrations present in the groundwater in the vicinity of this well. Monthly purging ceased after the 2015 monitoring event and hydrocarbon absorbing socks was used instead to remove the LNAPL.
5. From October 2015 to September 2016, the District installed hydrocarbon absorbing socks to remove LNAPL from MW-1. Socks were replaced every other month and inverted in between replacements. The sampling results of the Annual 2016 event indicated the hydrocarbon absorbent sock may not be effective in removing the LNAPL from MW-1 and staff will resume monthly purging of MW-1.
6. Drinking water environmental screen levels (ESLs) were exceeded in the groundwater samples collected from monitoring wells MW-5 and MW-8 for MTBE and from wells MW-1, MW-2, and MW-3 for TPH-D and TPH-MO. Non-drinking water ESLs were not exceeded in the monitoring wells for any constituent of concern, with the exception of MW-1 for TPH-D and TPH-MO. The results of wells MW-5 and MW-8 were consistent from the results of 2015.

The sampling results of well MW-1 did not improve from 2015's results and were significantly worse. The significant increases in the levels of TPH-D and TPH-MO recorded in MW-1 may be the result of the change to the absorbent sock method in lieu of monthly purging. Staff will return to monthly purging of MW-1 and the results of the next annual monitoring event can confirm if there was a correlation.

Even though groundwater samples from wells MW-2 and MW-3 were below the drinking water ESLs of the constituents, the sampling of these wells will be necessary to monitor the extent of the contamination plume in the groundwater table in the Former Boneyard Area. No groundwater samples were taken from wells MW-6 and MW-7 but the groundwater levels were measured to determine the groundwater gradient in the Former 550-Gallon Gasoline UST Area. This will help document that the contamination plume is stable and has not extended outside the area.

The analytical test results are included in Table 2.

### **Vapor Intrusion Investigation**

In June 2014, ACWD reevaluated the District's case under a new SWRCB low-threat closure policy and the review concluded that the plant's monitoring wells were not eligible for closure. However, ACWD provided a "Path to Closure Plan" for the monitoring wells. One of the requirements of the plan includes conducting a vapor intrusion investigation.

Brown and Caldwell completed the vapor intrusion investigation in August 2016. The investigation is to determine if petroleum vapors migrating from the soil or groundwater will have no significant risk of adversely affecting human health. Brown and Caldwell determined that human health is not threatened from the residual concentrations in the groundwater.

### **Next Steps**

The last requirement in the Path to Closure Plan is to remove free product to the maximum extent practicable. Staff met with ACWD on December 12, 2016 to discuss the status on the closure of the wells. Following the meeting, ACWD requested additional sampling be performed to define the extent of the remaining petroleum contamination around MW-1 and to verify the extent and stability of the MTBE plume near MW-5. Staff is consulting with Brown and Caldwell to determine the next steps.

PRE/SEG/RC/DC:ks

Attachments:     Figures 1 through 4  
                      Table 2

# Figure 1

## Alvarado WWTP Site Plan

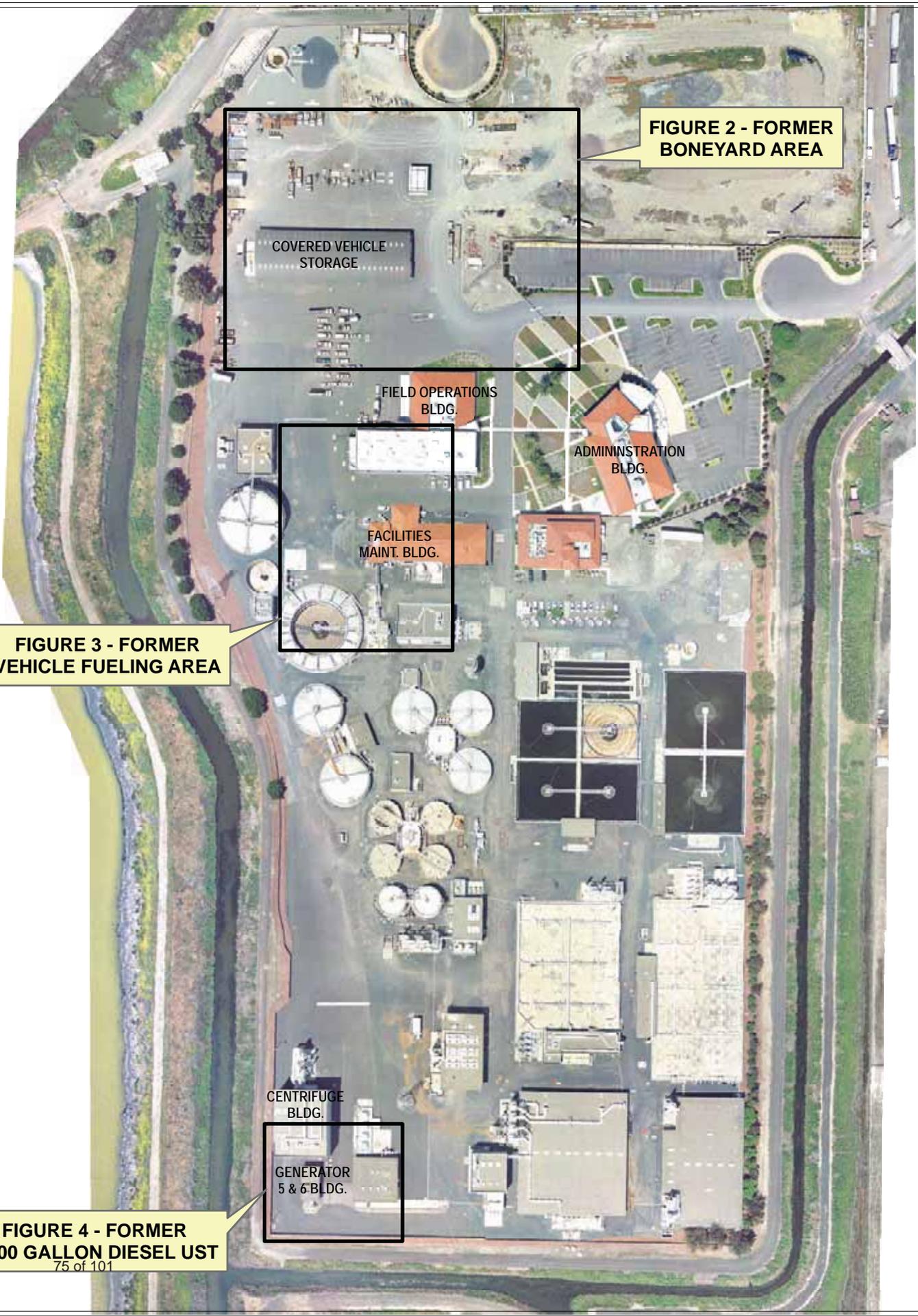
**FIGURE 2 - FORMER BONEYARD AREA**



**FIGURE 3 - FORMER VEHICLE FUELING AREA**



**FIGURE 4 - FORMER 6,000 GALLON DIESEL UST**



# Figure 2

## Former Boneyard Area



# Figure 3

## Former Vehicle Fueling Area

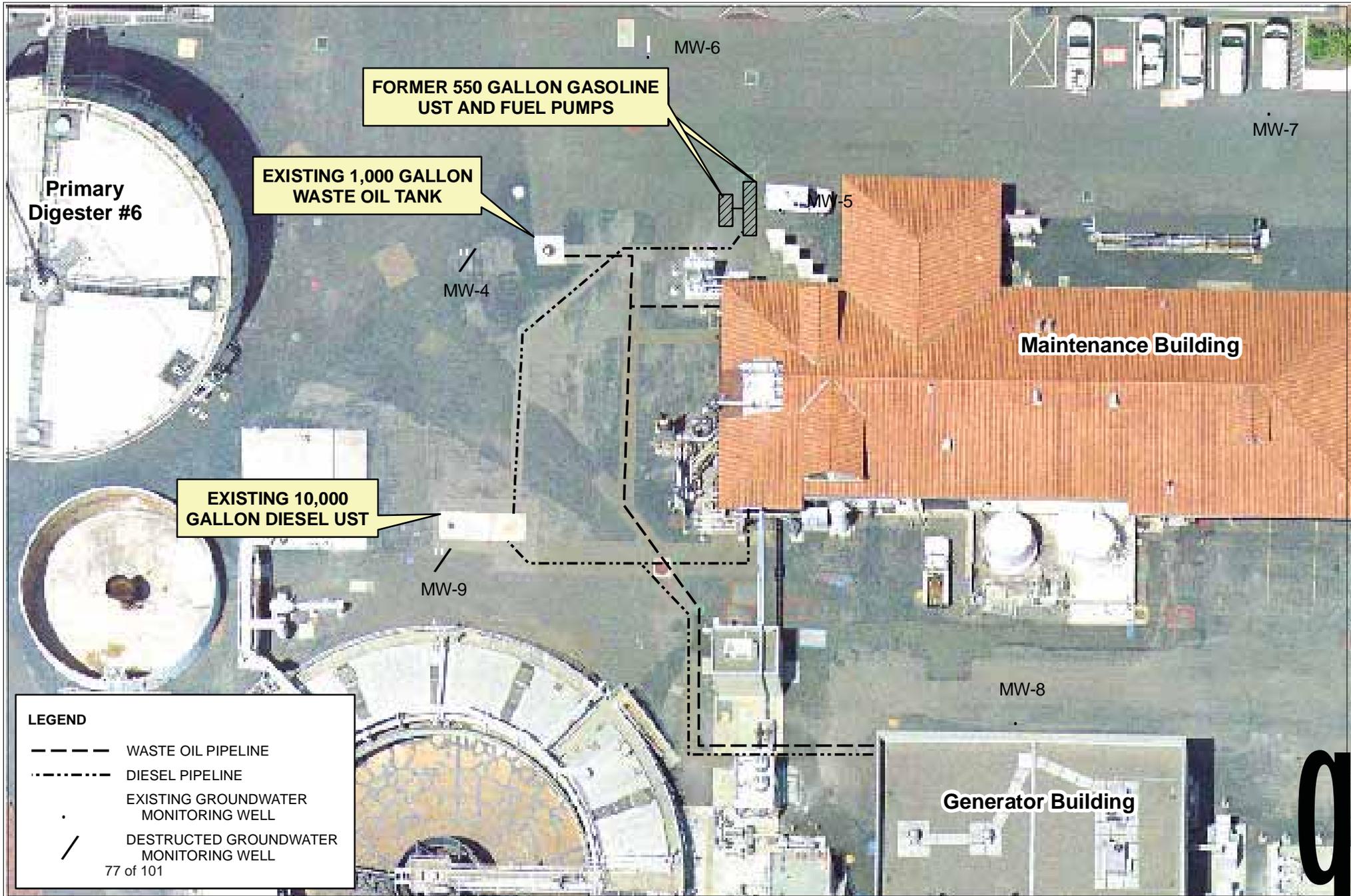
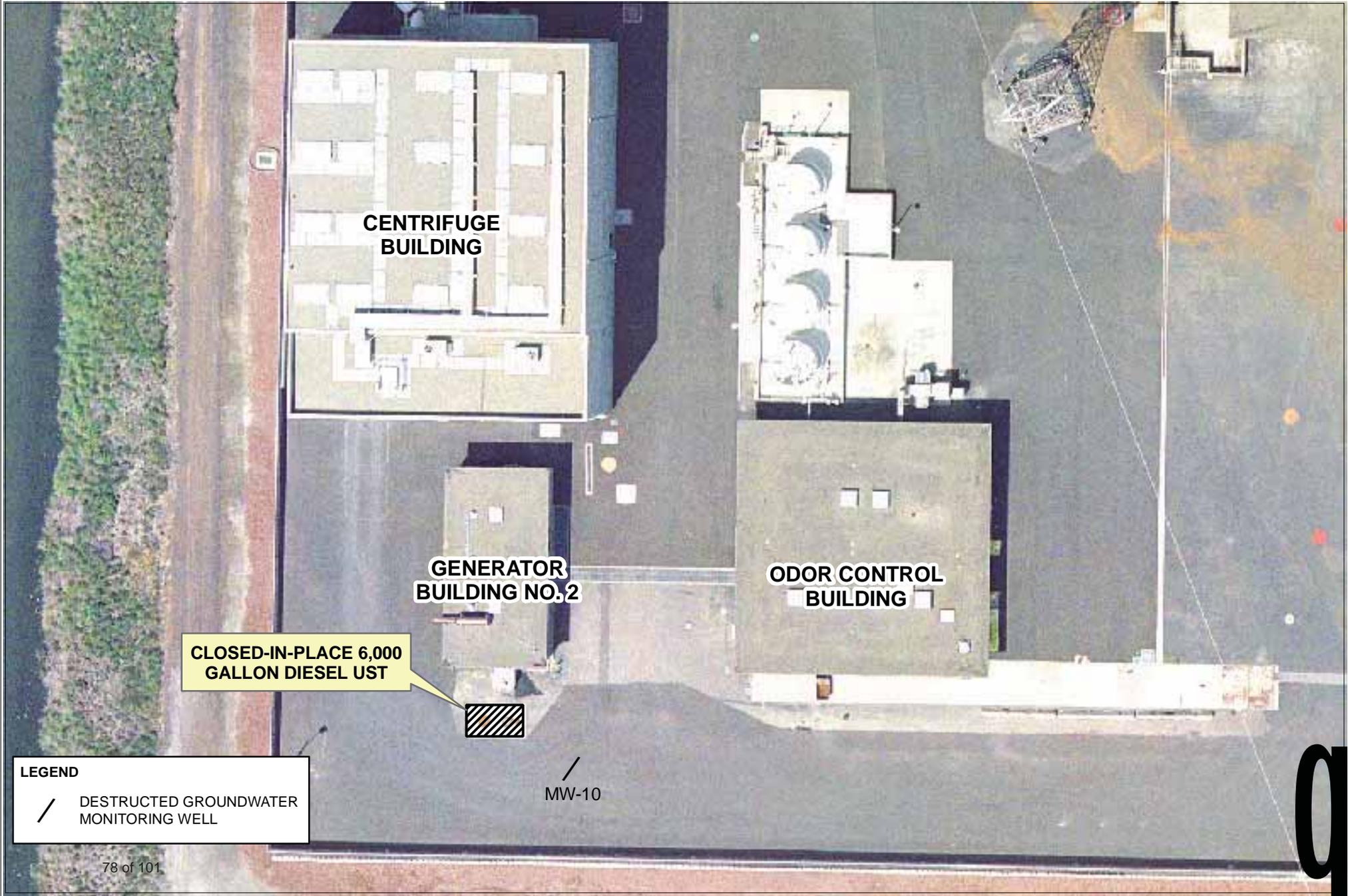


Figure 4  
Closed-in-Place 6,000 Gallon Diesel UST



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Table 2. Analytical Results - Petroleum Hydrocarbons  
Alvarado Wastewater Treatment Plant

Well ID	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	IAME (ug/L)	MIBE (ug/L)	TPH-G (ug/L)	TPH-D (ug/L)	TPH-MO (ug/L)	PNAS (ug/L)
MW-1	11/8/1999	<0.5	<0.5	<0.5	<0.5	---	---	---	---	<5.0	61 <sup>u</sup>	750 <sup>u</sup>	<250	ND
	6/8/2000 <sup>nr</sup>	---	---	---	---	---	---	---	---	---	---	---	---	---
	9/18/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<1.0	<50	570 <sup>mp</sup>	700	ND
	12/21/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	51 <sup>mp</sup>	<500	ND
	2/27/2001	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	ND
	12/15/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	1,500 <sup>l</sup>	1,300 <sup>l</sup>	---
	3/21/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<50	960 <sup>u</sup>	1,000 <sup>l</sup>	---
	3/21/2006 Dup	---	---	---	---	---	---	---	---	---	---	3,100 <sup>u</sup>	3,600 <sup>l</sup>	---
	6/28/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	160 <sup>ty</sup>	19,000 <sup>u</sup>	16,000 <sup>l</sup>	---
	6/28/2006 Dup	---	---	---	---	---	---	---	---	---	---	18,000 <sup>u</sup>	14,000 <sup>l</sup>	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	17,000 <sup>u</sup>	13,000 <sup>l</sup>	---
	9/11/2006 Dup	---	---	---	---	---	---	---	---	---	---	13,000 <sup>u</sup>	10,000 <sup>l</sup>	---
	4/10/2007	---	---	---	---	---	---	---	---	---	---	1,600 <sup>ty</sup>	1,200 <sup>ty</sup>	---
	4/10/2007 Dup	---	---	---	---	---	---	---	---	---	---	4,700 <sup>ty</sup>	3,800 <sup>ty</sup>	---
	9/24/2007	---	---	---	---	---	---	---	---	---	---	390 <sup>u</sup>	340 <sup>u</sup>	---
	3/7/2008	---	---	---	---	---	---	---	---	---	---	450	<300	---
	9/9/2008	---	---	---	---	---	---	---	---	---	---	300 <sup>l</sup>	<300	---
	3/17/2009	---	---	---	---	---	---	---	---	---	---	540 <sup>l</sup>	<300	---
	9/30/2009	---	---	---	---	---	---	---	---	---	---	120 <sup>y</sup>	<300	---
	4/21/2010	---	---	---	---	---	---	---	---	---	---	890 <sup>y</sup>	550	---
	4/21/2010 Dup	---	---	---	---	---	---	---	---	---	---	210 <sup>y</sup>	<300	---
	9/17/2010	---	---	---	---	---	---	---	---	---	---	350 <sup>y</sup>	<300	---
	10/28/2011	---	---	---	---	---	---	---	---	---	---	510	360	---
	10/28/2011 Dup	---	---	---	---	---	---	---	---	---	---	320	150	---
	9/14/2012	---	---	---	---	---	---	---	---	---	---	<55	<110	---
	9/14/2012 Dup	---	---	---	---	---	---	---	---	---	---	210	140	---
	9/24/2013	---	---	---	---	---	---	---	---	---	---	1300	1300	---
9/24/2013 Dup	---	---	---	---	---	---	---	---	---	---	320	330	---	
9/29/2014	---	---	---	---	---	---	---	---	---	---	1300	1400	---	
9/23/2015	---	---	---	---	---	---	---	---	---	---	86	<100	---	
	10/4/2016	---	---	---	---	---	---	---	---	---	---	6100	5500	---
MW-2 **	11/8/1999	<0.5	<0.5	<0.5	<0.5	---	---	---	---	<5.0	<50	<50	<250	ND
	11/8/99 Dup	<0.5	<0.5	<0.5	<0.5	---	---	---	---	<5.0	<50	---	---	---
	6/8/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	170 <sup>mp</sup>	<500	ND
	6/8/2000 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	ND
	9/18/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.0	<50	<50	<500	ND
	9/18/2000 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.1	<50	<50	<500	ND
	12/21/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	240 <sup>mp</sup>	3,700	---
	12/21/2000 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	200 <sup>mp</sup>	4,000	---
	2/27/2001	<0.50	<0.50 (0.86*)	<0.50	<0.50	---	---	---	---	<5.0	<50	56 <sup>ur</sup>	1,100	---
	2/27/2001 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	71 <sup>ur</sup>	1,400	---
	12/13/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	2.2	<50	61 <sup>ur</sup>	<300	---
	3/20/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.2	<50	65 <sup>u</sup>	650	---
	6/27/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.2	<50	<50	<300	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.0	<50	<50	<300	---
	4/10/2007	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/24/2007	---	---	---	---	---	---	---	---	---	---	<50	430 <sup>u</sup>	---
	9/24/2007 Dup	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	3/7/2008	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	3/7/2008 Dup	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/8/2008	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	3/17/2009	---	---	---	---	---	---	---	---	---	---	<50	350	---
	3/17/2009 Dup	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/29/2009	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/29/2009 Dup	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/17/2010	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/17/2010 Dup	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	10/28/2011	---	---	---	---	---	---	---	---	---	---	69	430	---
9/14/2012	---	---	---	---	---	---	---	---	---	---	<53	<110	---	
9/24/2013	---	---	---	---	---	---	---	---	---	---	<54	370	---	
9/29/2014	---	---	---	---	---	---	---	---	---	---	<52	<100	---	
9/29/2014 Dup	---	---	---	---	---	---	---	---	---	---	<53	<110	---	
9/23/2015	---	---	---	---	---	---	---	---	---	---	<52	<100	---	
	10/4/2016	---	---	---	---	---	---	---	---	---	---	140	230	---

Table 2. Analytical Results - Petroleum Hydrocarbons  
Alvarado Wastewater Treatment Plant

Well ID	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	IAME (ug/L)	MIBE (ug/L)	TPH-G (ug/L)	TPH-D (ug/L)	TPH-MO (ug/L)	PNAs (ug/L)
MW-3 **	11/8/1999	<0.5	<0.5	<0.5	<0.5	---	---	---	---	<5.0	<50	770 <sup>F</sup>	<250	ND
	6/8/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	ND
	9/18/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	2.1	<50	<50	<500	ND
	12/21/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	---
	2/27/2001	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	---
	12/13/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	1.9	<50	<50	<300	---
	3/21/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	<50	<300	---
	6/28/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<50	<50	<300	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	<50	<300	---
	4/11/2007	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/25/2007	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	3/8/2008	---	---	---	---	---	---	---	---	---	---	---	<300	---
	9/9/2008	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	3/17/2009	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/30/2009	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/17/2010	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	10/28/2011	---	---	---	---	---	---	---	---	---	---	<50	<300	---
	9/14/2012	---	---	---	---	---	---	---	---	---	---	<54	<110	---
	9/24/2013	---	---	---	---	---	---	---	---	---	---	<55	<110	---
9/29/2014	---	---	---	---	---	---	---	---	---	---	<51	<100	---	
9/25/2015	---	---	---	---	---	---	---	---	---	---	<50	<100	---	
	10/4/2016	---	---	---	---	---	---	---	---	---	---	160	---	---
MW-4*	9/3/1999	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.5	<50	100	---	---
	6/8/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	80 <sup>F</sup>	<50	<500	5.2 <sup>99</sup>
	9/18/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<1.0	<50	<50	<500	ND
	12/21/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	---
	2/27/2001	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	<50	<500	---
	12/14/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	<50	---	---
	3/21/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<50	<50	<300	---
	6/27/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	<50	---	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.5	<50	<50	---	---
	4/11/2007	---	---	---	---	---	---	---	---	<0.5	---	---	---	---
	9/24/2007	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	12/14/2005	<0.83	<0.83	<0.83	<0.83	<17	<0.83	<0.83	<0.83	180	<83	<50	---	---
	12/14/2005 Dup	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	0.52	180	<50	<50	---	---
	3/21/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	910	<50	78	<300	---
	3/21/2006 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	870	<50	---	---	---
	6/27/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	320	<50	210 <sup>99</sup>	---	---
	6/27/2006 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	690	<50	---	---	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	430	<50	<50	---	---
	9/11/2006 Dup	<0.50	<0.50	<0.50	<0.50	---	---	---	---	510	<50	---	---	---
	4/11/2007	---	---	---	---	---	---	---	---	110	---	---	---	---
	4/11/2007 Dup	---	---	---	---	---	---	---	---	100	---	---	---	---
	9/25/2007	---	---	---	---	<14	---	---	---	200	---	---	---	---
	9/25/2007 Dup	---	---	---	---	<14	---	---	---	130	---	---	---	---
	3/7/2008	---	---	---	---	32	---	---	---	460	---	---	---	---
	3/7/2008 Dup	---	---	---	---	<170	---	---	---	960	---	---	---	---
	9/8/2008	---	---	---	---	<25	---	---	---	290	---	---	---	---
	9/8/2008 Dup	---	---	---	---	<25	---	---	---	390	---	---	---	---
	9/30/2009	---	---	---	---	<25	---	---	---	130	---	---	---	---
	9/30/09 Dup	---	---	---	---	<33	---	---	---	200	---	---	---	---
	9/17/2010	<0.50	<0.50	<0.50	<0.50	<83	---	---	---	470	---	---	---	---
	9/17/2010 Dup	<0.50	<0.50	<0.50	<0.50	<100	---	---	---	680	---	---	---	---
10/28/2011	---	---	---	---	<100	---	---	---	130	---	---	---	---	
10/28/2011 Dup	---	---	---	---	<100	---	---	---	40	---	---	---	---	
9/14/2012	---	---	---	---	63	---	---	---	570	---	---	---	---	
9/14/2012 Dup	---	---	---	---	44	---	---	---	460	---	---	---	---	
9/24/2013	---	---	---	---	<100	---	---	---	230	---	---	---	---	
9/24/2013 Dup	---	---	---	---	<100	---	---	---	230	---	---	---	---	
9/29/2014	---	---	---	---	<200	---	---	---	720	---	---	---	---	
9/29/2014 Dup	---	---	---	---	<200	---	---	---	750	---	---	---	---	
9/23/2015	---	---	---	---	<20	---	---	---	600	---	---	---	---	
	10/4/2016	---	---	---	---	<400 D	---	---	---	710	---	---	---	---

Table 2. Analytical Results - Petroleum Hydrocarbons  
Alvarado Wastewater Treatment Plant

Well ID	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	TBA (ug/L)	DIPE (ug/L)	ETBE (ug/L)	IAME (ug/L)	MIBE (ug/L)	TPH-G (ug/L)	TPH-D (ug/L)	TPH-MO (ug/L)	PNAs (ug/L)
MW-6*	12/14/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	<50	----	----
	3/20/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.50	<50	<50	<300	----
	6/27/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	0.7	<50	<50	----	----
	9/11/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	0.6	<50	<50	----	----
	4/11/2007	----	----	----	----	----	----	----	----	0.7	----	----	----	----
	9/25/2007	----	----	----	----	<10	----	----	----	0.6	----	----	----	----
	9/9/2008	----	----	----	----	<10	----	----	----	0.6	----	----	----	----
	9/30/2009	----	----	----	----	<10	----	----	----	<0.5	----	----	----	----
	MW-7*	12/15/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	0.59	<50	<50	----
3/20/2006		<0.50	<0.50	<0.50	<0.50	----	----	----	----	<2.0	<50	<50	<300	----
6/27/2006		<0.50	<0.50	<0.50	<0.50	----	----	----	----	1.0	<50	<50	----	----
9/11/2006		<0.50	<0.50	<0.50	<0.50	----	----	----	----	1.2	<50	<50	----	----
4/11/2007		----	----	----	----	----	----	----	----	1.0	----	----	----	----
9/25/2007		----	----	----	----	<10	----	----	----	0.8	----	----	----	----
9/9/2008		----	----	----	----	<10	----	----	----	0.8	----	----	----	----
9/30/2009		----	----	----	----	<10	----	----	----	<0.5	----	----	----	----
MW-8**		12/15/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	58	<50	<50	----
	3/20/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	37	<50	78	<300	----
	6/28/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	16	<50	61 <sup>1</sup>	----	----
	9/11/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	33	<50	55 <sup>2</sup>	----	----
	4/11/2007	----	----	----	----	----	----	----	----	61	----	----	----	----
	9/25/2007	----	----	----	----	<10	----	----	----	32	----	----	----	----
	3/7/2008	----	----	----	----	<10	----	----	----	48	----	----	----	----
	9/9/2008	----	----	----	----	<10	----	----	----	69	----	----	----	----
	9/29/2009	----	----	----	----	<10	----	----	----	51	----	----	----	----
	9/17/2010	<0.50	<0.50	<0.50	<0.50	<10	----	----	----	78	----	----	----	----
	10/28/2011	----	----	----	----	<10	----	----	----	36	----	----	----	----
	9/14/2012	----	----	----	----	7.2	----	----	----	24	----	----	----	----
	9/24/2013	----	----	----	----	<10	----	----	----	65	----	----	----	----
	9/29/2014	----	----	----	----	<20	----	----	----	9.7	----	----	----	----
	9/23/2015	----	----	----	----	<20	----	----	----	16	----	----	----	----
10/4/2016	----	----	----	----	<20	----	----	----	22	----	----	----	----	
MW-9*	12/14/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	<50	----	----
	3/21/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.50	<50	52	<300	----
	6/28/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<2.0	<50	<50	----	----
	9/11/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.5	<50	<50	----	----
	4/11/2007	----	----	----	----	----	----	----	----	<0.5	----	----	----	----
	9/24/2007	----	----	----	----	----	----	----	----	----	----	----	----	----
MW-10*	12/14/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	<50	----	----
	3/21/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.50	<50	83	<300	----
	3/21/2006 Dup	----	----	----	----	----	----	----	----	----	----	120	<300	----
	6/27/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<2.0	<50	68 <sup>2</sup>	----	----
	6/27/2006 Dup	----	----	----	----	----	----	----	----	----	----	62 <sup>2</sup>	----	----
	9/11/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.5	<50	76 <sup>1,2</sup>	----	----
	9/11/2006 Dup	----	----	----	----	----	----	----	----	----	----	<50	----	----
	4/10/2007	----	----	----	----	----	----	----	----	----	----	55 <sup>2</sup>	----	----
	9/24/2007	----	----	----	----	----	----	----	----	----	----	----	----	----
Field Equipment Blank	6/8/2000	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<5.0	<50	----	----	----
	9/18/2000	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<1.0	<50	----	----	----
	12/21/2000	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<5.0	<50	----	----	----
	2/27/2001	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<5.0	<50	----	----	----
	3/20/2006	<0.50	<0.50	<0.50	<0.50	----	----	----	----	<0.50	<50	<50	<300	----
	4/11/2007	----	----	----	----	----	----	----	----	<0.5	<50	<300	----	----
	9/24/2007	----	----	----	----	----	----	----	----	----	----	<50	<300	----
	9/25/2007	----	----	----	----	<10	----	----	----	<0.5	----	----	----	----
	3/7/2008	----	----	----	----	<10	----	----	----	<0.5	----	----	----	----
	9/8/2008	----	----	----	----	<10	----	----	----	<0.5	----	----	----	----
	9/9/2008	----	----	----	----	----	----	----	----	----	----	<50	<300	----
	3/17/2009	----	----	----	----	----	----	----	----	----	----	<50	<300	----
	9/17/2010	<0.5	<0.5	<0.5	<0.5	<10	----	----	----	<0.5	----	----	----	----
	9/14/2012	----	----	----	----	<4	----	----	----	<0.5	----	----	----	----
9/24/2013	----	----	----	----	<10	----	----	----	<0.5	----	----	----	----	
9/29/2014	----	----	----	----	<20	----	----	----	<0.5	----	----	----	----	

Table 2. Analytical Results - Petroleum Hydrocarbons  
Alvarado Wastewater Treatment Plant

Well ID	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	tBA (ug/L)	DIPE (ug/L)	EtBE (ug/L)	tAME (ug/L)	MtBE (ug/L)	TPH-G (ug/L)	TPH-D (ug/L)	TPH-MO (ug/L)	PNAs (ug/L)
Trip Blank	11/8/1999	<0.5	<0.5	<0.5	<0.5	---	---	---	---	<5.0	<50	---	---	---
	6/8/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	---	---	---
	9/18/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<1.0	<50	---	---	---
	12/21/2000	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	---	---	---
	2/27/2001	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<5.0	<50	---	---	---
	12/14/2005	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<0.50	<50	---	---	---
	3/20/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<0.50	<50	---	---	---
	6/27/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	---	---	---
	9/11/2006	<0.50	<0.50	<0.50	<0.50	---	---	---	---	<2.0	<50	---	---	---
	4/11/2007	---	---	---	---	---	---	---	---	<0.5	---	---	---	---
	9/25/2007	---	---	---	---	<10	---	---	---	<0.5	---	---	---	---
	9/8/2008	---	---	---	---	<10	---	---	---	<0.5	---	---	---	---
	9/30/2008	---	---	---	---	<10	---	---	---	<0.5	---	---	---	---
	9/17/2010	<0.5	<0.5	<0.5	<0.5	<10	---	---	---	<0.5	---	---	---	---
	10/28/2011	---	---	---	---	<10	---	---	---	<0.5	---	---	---	---
	9/14/2012	---	---	---	---	<4	---	---	---	<0.5	---	---	---	---
	9/24/2013	---	---	---	---	<10	---	---	---	<0.5	---	---	---	---
	9/29/2014	---	---	---	---	<20	---	---	---	<0.5	---	---	---	---
9/23/2015	---	---	---	---	<20	---	---	---	<0.5	---	---	---	---	
	10/4/2016	---	---	---	---	---	---	---	---	---	---	---	---	---
ESL - DW		1.0	40	30	20	12	NE	NE	NE	5.0	100	100	100	
ESL - NDW		46	130	43	100	18,000	NE	NE	NE	1,800	500	640	640	

**Notes:**

ug/L = micrograms per liter  
D = Dilution factor on sample increased reporting limit.  
Benzene analyzed following U.S. EPA Method 8020, 8021B or 8260B  
Toluene analyzed following U.S. EPA Method 8020, 8021B or 8260B  
Ethylbenzene analyzed following U.S. EPA Method 8020, 8021B or 8260B  
Xylenes analyzed following U.S. EPA Method 8020, 8021B or 8260B (concentration reported is total of m,p- and o-xylenes).  
tBA = tert-Butyl Alcohol analyzed following U.S. EPA Method 8260B  
DIPE = Isopropyl Ether analyzed following U.S. EPA Method 8260B  
EtBE = Ethyl tert-Butyl Ether analyzed following U.S. EPA Method 8260B  
tAME = Methyl tert-Amyl Ether analyzed following U.S. EPA Method 8260B  
MtBE = Methyl tert-Butyl Ether analyzed following U.S. EPA Method 8260A or 8260B  
TPH-G = Total Petroleum Hydrocarbons as Gasoline analyzed following modified EPA Method 8015  
TPH-D = Total Petroleum Hydrocarbons as Diesel analyzed following modified EPA Method 8015 and prepared with silica gel clean-up  
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil analyzed following modified EPA Method 8015 and prepared with silica gel clean-up  
PNAs = Polynuclear Aromatic Hydrocarbons analyzed following U.S. EPA Method 8270A  
ESL-DW = San Francisco Regional Water Quality Control Board Environmental Screening Level for sites where groundwater is a current or potential drinking water source, Table F-1a, May 2008  
ESL-NDW = San Francisco Regional Water Quality Control Board Environmental Screening Level for sites where groundwater is not a current or potential drinking water source, Table F-1b, May 2008  
Dup = Duplicate sample  
<n = Not detected above the laboratory reporting limit of n ug/L  
ND = Not detected above laboratory reporting limits for respective individual compounds  
NF = Well not found  
NE = Not established  
--- = Not analyzed  
<sup>a</sup> = Heavier gasoline range compounds are significant, chromatogram possibly shows aged gasoline pattern.  
<sup>b</sup> = Medium boiling point pattern that does not match diesel, chromatogram possibly shows aged kerosene pattern.  
<sup>c</sup> = Diesel range compounds are significant; no recognizable pattern.  
<sup>d</sup> = Heavier hydrocarbons contributed to the quantitation.  
<sup>e</sup> = Lighter hydrocarbons contributed to the quantitation.  
<sup>f</sup> = Sample exhibits chromatographic pattern which does not resemble standard  
z = Sample analyzed outside EPA Method's holding time  
bp = bis (2-Ethylhexyl) phthalate concentration reported  
<sup>g</sup> = Hydrocarbon reported in the gasoline range does not match laboratory's gasoline standard  
ndp = Hydrocarbon reported does not match the pattern of laboratory's diesel standard  
ldr = Hydrocarbon reported is in the late diesel range, and does not match laboratory's diesel standard  
\* = Analyzed following U.S. EPA Method 8260A  
**Bold** = Current groundwater monitoring event  
*italicized* = Concentration exceeds the respective ESL-DW  
Underline = Concentration exceeds the respective ESL-NDW  
= Discontinued sampling groundwater monitoring well per approval from Alameda County Water District: MW-4, MW-9 and MW-10 were destructed on May 2, 2008  
= Well sampled annually per approval from Alameda County Water District.



## Summary of the EBDA Commission Meeting

Thursday, March 16, 2017, at 9:30 a.m.

Prepared by: P. Eldredge

- Commissioners Becker, Peixoto, Johnson, Cutter, and Toy were present.
- Commissioner Becker requested that the minutes on item 14 Report from the Ad Hoc be amended to clarify the Commission's request. At the February 16 Commission, the MAC was asked to further discuss the key points identified at the Strategic Plan workshop. At this point in the process it is too early to develop specific Joint Exercise of Powers Agreement (JPA) language. Therefore, the phrase *"and propose specific language for the JPA renewal"* should be removed from the minutes.  
The Consent Calendar was approved unanimously and included the Commission Meeting Minutes (including the proposed revision), List of Disbursements, and Treasurer's Report.
- The Commission unanimously approved the reports from the Managers Advisory, Financial Management, Regulatory Affairs, Operations & Maintenance, Personnel, and Ad Hoc committees. The following items were discussed:
  - **General Managers Report** - The General Manager advised the Commission that he will be traveling to Seoul, South Korea as a representative of the Water Environment and Reuse Foundation. Mr. Bruce Wolfe of the State Water Board is scheduled to address the Commission on April 20, 2017.
  - **Managers Advisory Committee (MAC)** – met with the General Manager on March 15, 2017. The MAC discussed the upcoming meeting on April 7, 2017, regarding Strategic Plan next steps and draft NPDES permit. The Managers reviewed the Commission agenda and were updated on the status of the Transport System Inspection.
  - **Financial Management Committee** met with the General Manager on March 14, 2017 and approved the February list of disbursements and Treasurer's Reports. The Committee reviewed the Special Districts Financial Transactions report submitted to the State Controller's Office for fiscal year 2015/16.
  - **Regulatory Affairs Committee** met with the General Manager on March 14, 2017 and discussed permit compliance. The Committee reviewed EBDA's historical flow data and the draft NPDES permit. A meeting is scheduled for March 28, 2017 for member agencies to review EBDA's response letter.

- **Operations and Maintenance (O&M) Committee** met with the General Manager on March 13, 2017 and discussed the status of EBDA facilities. The Committee was updated on the status of the AEPS No. 1 Effluent Pump study, Hayward MCC replacement project, OLEPS fuel tank replacement and Skywest distribution pump refurbishment. The Committee reviewed the wet weather report for February.

The Superintendent of O&M updated the Committee on the status of the Transport Pipe Condition Assessment project. Brown and Caldwell (B&C) is developing the inspection plan. The *Enterococcus* issue within the transport system has subsided; this may be due to the several wet weather events that occurred in January and February.

- **Ad Hoc Committee** - The Ad Hoc Committee met with the General Manager on March 15, 2017 and discussed the next steps in renewing the EBDA JPA. The Committee added that the transport pipe is needed by all member agencies for possibly another twenty (20) years. The Ad Hoc recommends that the MAC continue the discussions on how member agencies share costs and including an exit clause in the JPA.
- **Personnel Committee** - The Personnel Committee met with the General Manager on March 13, 2017. The Committee reviewed budget estimates for salaries and benefits for FY 17/18 and the personnel policy. Staff presented a General Manager transition strategy for the Committee's consideration. The authority completed the recruitment of Operations and Maintenance Manager. Howard Cin was selected to join EBDA on May 1, 2017.
- **Items from the Commission and Staff** - The Authority's legal counsel was asked what would happen if the member agencies, that are represented by Meyers Nave, do not sign a Conflict Waiver. Counsel advised that Meyers Nave would not be able to represent any of their existing EBDA clients on the JPA renewal. However, Mr. Casher also stated that the matter that Meyers Nave is representing the City of Hayward on is in the process of being settled.
- **Resolution Accepting the Outfall Pipe Inspection and Condition Assessment Technical Memorandum from Brown and Caldwell**

Bill Faisst and Erik Zalkin of Brown and Caldwell presented the technical memorandum to the Commission. The outfall and 251 diffuser tee assemblies, after the repairs completed, are in good condition. The B&C report concluded that with maintenance the effluent outfall system should last 100 to 150 years. The Commission thanked Brown and Caldwell for providing a well written technical memorandum.

Commissioner Cutter introduced the resolution accepting the Outfall Pipe Inspection and Condition Assessment Technical Memorandum from Brown and Caldwell. The motion was seconded by Commissioner Becker and carried unanimously, 5-0.

Ayes: Commissioners Becker, Peixoto, Cutter, Toy, and Chair Johnson  
 Noes: None  
 Absent: None  
 Abstain: None

- **Resolution Authorizing the General Manager to Execute a Memorandum of Understanding Between East Bay Dischargers Authority and the City of Hayward for Use of the Hayward Ponds**

Commissioner Peixoto introduced the resolution authorizing the renewal of a MOU between EBDA and the City of Hayward for the use of the Hayward Ponds for emergency overflow. The motion was seconded by Commissioner Toy and carried unanimously, 5-0.

Ayes: Commissioners Becker, Peixoto, Cutter, Toy, and Chair Johnson

Noes: None

Absent: None

Abstain: None

**UNION SANITARY DISTRICT  
CHECK REGISTER  
3/04/2017-03/17/2017**

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163914	3/16/2017	140120170307	PACIFIC GAS AND ELECTRIC	SERV TO 03/05/17 IRVINGTON PS	\$27,191.18	\$83,917.68
	3/16/2017	013720170307		SERV TO 03/06/17 BOYCE RD PS	\$2,440.45	
	3/16/2017	096020170302		SERV TO 3/01/17 CATHODIC PROJECT	\$39.61	
	3/16/2017	170120170309		SERV TO 2/23/17 PLANT	\$54,246.44	
163826	3/9/2017	11285461	BROWN & CALDWELL CONSULTANTS	PRIMARY DIGESTER NO. 7	\$4,132.06	\$31,226.62
	3/9/2017	11285460		STANDBY POWER SYSTEM UPGRADE	\$27,094.56	
163868	3/9/2017	23432	RMC WATER AND ENVIRONMENT	ALVARADO BASIN SEWER MASTER PLAN UPDATE	\$29,736.25	\$29,736.25
163839	3/9/2017	2092717A	DELTA DENTAL SERVICE	FEBRUARY 2017 DENTAL	\$2,620.43	\$22,427.13
	3/9/2017	2092717C		FEBRUARY 2017 DENTAL	\$19,806.70	
163928	3/16/2017	533620170222	US BANK CORP PAYMENT SYSTEM	MONTHLY CAL-CARD STMT - FEB 2017	\$19,593.96	\$19,593.96
163865	3/9/2017	666720170302	PACIFIC GAS AND ELECTRIC	SERV TO 03/01/17 PASEO PADRE PS	\$361.08	\$18,487.03
	3/9/2017	761520170224		SERV TO 2/23/17 NEWARK PS	\$17,641.28	
	3/9/2017	892820170302		SERV TO 03/01/17 HAYWARD MARSH	\$54.78	
	3/9/2017	380420170302		SERV TO 03/01/17 CHERRY ST PS	\$251.64	
	3/9/2017	898220170302		SERV TO 3/01/17 FREMONT PS	\$178.25	
163843	3/9/2017	237226	FRANK A OLSEN COMPANY	ROTORK ACTUATORS FOR BUILDING 79	\$17,778.03	\$17,778.03
163908	3/16/2017	27420	MARK THOMAS & CO, INC	TEMP CONSTRUCTION INSPECTOR - 1/3 - 1/27/17	\$17,661.66	\$17,661.66

**UNION SANITARY DISTRICT  
CHECK REGISTER  
3/04/2017-03/17/2017**

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163931	3/16/2017	37722	WECO INDUSTRIES LLC	TRANSPORTER REPAIRS - 1	\$3,673.28	\$17,598.61
	3/16/2017	37792		TRACTOR CAMERA REPAIR PARTS	\$1,584.10	
	3/16/2017	37780		CAMERA REPAIRS	\$529.48	
	3/16/2017	38191		SANAFOAM - ROOT FOAM PRODUCT	\$7,974.63	
	3/16/2017	37719		CAMERA REPAIRS	\$1,306.05	
	3/16/2017	37779		CAMERA REPAIRS	\$310.18	
	3/16/2017	37718		TRANSPORTER REPAIR - 2	\$2,220.89	
163817	3/9/2017	66746	3T EQUIPMENT COMPANY INC	22 PIPEPATCH KIT - WINTER & 1 INSTALLATION KIT	\$11,325.65	\$16,392.81
	3/9/2017	66756		9 PIPEPATCH KIT - WINTER	\$5,067.16	
163874	3/9/2017	7248	TETRA TECH UTILITY CONST. INC	REFUND # 19712	\$15,000.00	\$15,000.00
163822	3/9/2017	7114700	ASPEN TECHNOLOGY INC	MTELL ANNUAL SOFTWARE SUPPORT	\$13,111.32	\$13,111.32
163829	3/9/2017	155147	CAROLLO ENGINEERS	FREMONT & PASEO PADRE LS IMPROVEMENTS	\$2,115.50	\$10,452.87
	3/9/2017	155326		NEWARK PS MOD VALVE & BOOST LINE MODS	\$3,740.29	
	3/9/2017	155151		PLANT SOLIDS SYSTEM/CAPACITY ASSESSMENT	\$4,597.08	
163835	3/9/2017	14205	CRANE WORKS INC	ANNUAL CRANE CERTIFICATIONS 2017	\$9,220.00	\$9,220.00
163859	3/9/2017	37432220170301	LINCOLN NATIONAL LIFE INS COMP	LIFE & DISABILITY INSURANCE - MAR 2017	\$7,630.08	\$7,630.08
163827	3/9/2017	30458	CALIFORNIA WATER TECHNOLOGIES	43,560 LBS FERROUS CHLORIDE	\$3,749.82	\$7,577.28
	3/9/2017	30440		44,060 LBS FERROUS CHLORIDE	\$3,827.46	

**UNION SANITARY DISTRICT  
CHECK REGISTER  
3/04/2017-03/17/2017**

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163893	3/16/2017	30502	CALIFORNIA WATER TECHNOLOGIES	41,640 LBS FERROUS CHLORIDE	\$3,628.13	\$7,314.14
	3/16/2017	30473		42,560 LBS FERROUS CHLORIDE	\$3,686.01	
163848	3/9/2017	21798637	GLOBAL KNOWLEDGE TRAINING	IT SUPPORT TRAINING FOR NGUYEN AND TAI	\$6,790.00	\$6,790.00
163927	3/16/2017	800373	UNIVAR USA INC	4699 GALS SODIUM HYPOCHLORITE	\$2,070.60	\$5,401.89
	3/16/2017	801262		5004 GALS SODIUM HYPOCHLORITE	\$2,205.00	
	3/16/2017	801739		2556 GALS SODIUM HYPOCHLORITE	\$1,126.29	
163876	3/9/2017	799762	UNIVAR USA INC	300 GAL SULFURIC ACID	\$863.74	\$5,271.08
	3/9/2017	800099		5000 GALS SODIUM HYPOCHLORITE	\$2,203.23	
	3/9/2017	800135		5002 GALS SODIUM HYPOCHLORITE	\$2,204.11	
163926	3/16/2017	130891	UE SYSTEMS INCORPORATED	LEVEL ONE ULTRASOUND TRNG 4 FMC EMPLOYEES	\$5,083.00	\$5,083.00
163885	3/16/2017	4017275220170306	ALAMEDA COUNTY WATER DISTRICT	SERV TO: 03/03/17 - FREMONT BLVD	\$121.57	\$4,193.36
	3/16/2017	4017420220170306		SERV TO: 03/03/17 - FREMONT BLVD	\$72.64	
	3/16/2017	4017274120170306		SERV TO: 03/03/17 - FREMONT BLVD	\$3,999.15	
163925	3/16/2017	130939	TOTAL WASTE SYSTEMS INC	FEBRUARY 2017 GRIT DISPOSAL	\$4,066.09	\$4,066.09
163866	3/9/2017	1113793	POLYDYNE INC	42,720 LBS CLARIFLOC WE-539	\$4,032.13	\$4,032.13
163912	3/16/2017	4	DAVID MICHAEL MOUTRAY	VIRTUAL PLANT TOUR VIDEO PROJECT	\$3,525.00	\$3,525.00
163860	3/9/2017	81192	MAAS BROTHERS INC.	TCB POWDER COATING FOR GRATING	\$3,321.01	\$3,321.01
163911	3/16/2017	8588	MONARCH PLUMBING & ROOTER INC	REFUND # 19733	\$3,300.00	\$3,300.00
163933	3/16/2017	8498	ZHEN YANG	REFUND # 19746	\$3,300.00	\$3,300.00

**UNION SANITARY DISTRICT  
CHECK REGISTER  
3/04/2017-03/17/2017**

Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163878	3/9/2017	20170301	VISION SERVICE PLAN - CA	MARCH 2017 VISION STMT	\$3,271.68	\$3,271.68
163828	3/9/2017	17024623	CANON SOLUTIONS AMERICA INC	MONTHLY LEASE 6 CANON COLOR COPIERS	\$3,154.15	\$3,154.15
163904	3/16/2017	3592820170313	HASLER INC.	POSTAGE BY PHONE - TMS 35928	\$3,000.00	\$3,000.00
163834	3/9/2017	17291	CLINE GLASS CONTRACTORS INC	SKYLIGHT LEAK REPAIR	\$2,750.00	\$2,750.00
163919	3/16/2017	8701152463	SEW-EURODRIVE INC	GBT DRIVE MOTOR AND FAN	\$2,631.10	\$2,631.10
163823	3/9/2017	9250362	AT&T	SERV: 01/10/17 - 02/09/17	\$2,561.02	\$2,561.02
163842	3/9/2017	8530	EAST WARREN PARK LLC	REFUND # 19720	\$2,500.00	\$2,500.00
163906	3/16/2017	8630	JJ COMMERCIAL WATER HEATER	REFUND # 19760	\$2,500.00	\$2,500.00
163917	3/16/2017	20170315	JAMIE ROJO	COMPUTER NOTE	\$2,439.33	\$2,439.33
163877	3/9/2017	9780711759	VERIZON WIRELESS	WIRELESS SERV 01/21/17 - 02/20/17	\$2,274.80	\$2,274.80
163883	3/16/2017	66784	3T EQUIPMENT COMPANY INC	1 1" X 800' PIRANHA SEWER HOSE	\$2,195.00	\$2,195.00
163916	3/16/2017	916003016098	REPUBLIC SERVICES #916	RECYCLE & ROLL OFF - FEBRUARY 2017	\$2,178.60	\$2,178.60
163850	3/9/2017	9345886445	GRAINGER INC	2 BEACON LIGHTS	\$87.80	\$2,028.18
	3/9/2017	9346544696		5 PLUGS	\$83.41	
	3/9/2017	9346110738		ASTD PARTS & MATERIALS	\$245.99	
	3/9/2017	9342788131		ASTD PARTS & MATERIALS	\$1,436.04	
	3/9/2017	9341532860		1 3M RESPIRATOR	\$174.94	
163881	3/9/2017	13630	WESTERN MACHINE & FAB INC	4 ADAPTER NUTS	\$1,975.50	\$1,975.50

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163902	3/16/2017	9348232225	GRAINGER INC	4 INSULATED MULTITAP CONNECTORS	\$545.57	\$1,915.57
	3/16/2017	9352745237		5 GREASE GUNS - PISTOL GRIP	\$891.45	
	3/16/2017	9351895926		1 LED WALL PACK	\$137.49	
	3/16/2017	9349880436		1 ADJ WRENCH SET	\$94.00	
	3/16/2017	9347858749		2 DRAW LATCHES	\$27.37	
	3/16/2017	9348455032		1 SPRAY NOZZLE	\$41.40	
	3/16/2017	9352278023		1 GREASE GUN - PISTOL GRIP	\$178.29	
163831	3/9/2017	1194787	CH BULL COMPANY	3 20' EXTENSION LADDERS	\$1,660.03	\$1,660.03
163918	3/16/2017	8845	ROOTER HERO	REFUND # 19727 & 19728	\$650.00	\$1,650.00
	3/16/2017	8706		REFUND # 19726	\$500.00	
	3/16/2017	8867		REFUND # 19729	\$500.00	
163909	3/16/2017	20170309	MICHAEL MARZANO	EXP REIMB: REGIS/LODGING/AIRFARE/LUGGAGE/MEAL PER DIEM PAR	\$1,627.72	\$1,627.72
163870	3/9/2017	7655660200	RS HUGHES CO INC	SAFETY SUPPLIES	\$752.07	\$1,410.81
	3/9/2017	7655660201		SAFETY SUPPLIES	\$112.93	
	3/9/2017	7655660202		SAFETY SUPPLIES	\$545.81	
163922	3/16/2017	3332103649	STAPLES CONTRACT & COMMERCIAL	JANITORIAL SUPPLIES	\$85.64	\$1,348.13
	3/16/2017	3332103644		JANITORIAL SUPPLIES	\$631.12	
	3/16/2017	3332103648		JANITORIAL SUPPLIES	\$631.37	
163910	3/16/2017	17868527	MCMASTER SUPPLY INC	ASTD PARTS & MATERIALS	\$1,265.31	\$1,265.31

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163892	3/16/2017	91350	BRUCE BARTON PUMP SERVICE INC	1 SUMP PUMP	\$1,114.51	\$1,241.58
	3/16/2017	91597		1 SUMP PUMP & 2 FLOATS	\$1,244.13	
	3/16/2017	91143		CREDIT PO 1007416	\$-1,117.06	
163824	3/9/2017	1248	BARNETT MEDICAL SERVICES LLC	60 LBS PHARMACEUTICAL WASTE REMOVAL	\$255.00	\$1,105.00
	3/9/2017	4436		80 LBS PHARMACEUTICAL WASTE REMOVAL	\$85.00	
	3/9/2017	5648		160 LBS PHARMACEUTICAL WASTE REMOVAL	\$255.00	
	3/9/2017	4429		140 LBS PHARMACEUTICAL WASTE REMOVAL	\$340.00	
	3/9/2017	5641		140 LBS PHARMACEUTICAL WASTE REMOVAL	\$170.00	
163932	3/16/2017	2031609	WEST YOST ASSOCIATES	NEWARK BACKYARD SS RELOCATION - PHASE 3	\$1,067.90	\$1,067.90
163887	3/16/2017	582595	A-PRO PEST CONTROL INC	FEB PEST CONTROL	\$1,005.00	\$1,005.00
163864	3/9/2017	20170302	CHRIS PACHMAYER	EXP REIMB: 2 TRAINING COURSE REGISTRATIONS	\$1,000.00	\$1,000.00
163898	3/16/2017	8674	E Z PLUMBING	REFUND # 19740	\$500.00	\$1,000.00
	3/16/2017	8839		REFUND # 19739	\$500.00	
163889	3/16/2017	9267758	AT&T	SERV: 01/13/17 - 02/12/17	\$65.69	\$952.54
	3/16/2017	9267759		SERV: 01/13/17 - 02/12/17	\$87.12	
	3/16/2017	9267755		SERV: 01/13/17 - 02/12/17	\$757.02	
	3/16/2017	9267757		SERV: 01/13/17 - 02/12/17	\$42.71	
163930	3/16/2017	8047719267	VWR INTERNATIONAL LLC	ASTD LAB SUPPLIES	\$656.68	\$913.51
	3/16/2017	8047676272		1 PK MICROFIBRE GLS GF 12.5CM, PK 100	\$256.83	

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163920	3/16/2017	8122768022317	SIERRA SPRING WATER COMPANY	BOTTLESS COOLERS RENTAL	\$239.00	\$896.18
	3/16/2017	4868173022317		WATER SERVICE 12/30/16 - 02/21/17	\$657.18	
163907	3/16/2017	20170314	ARMANDO LOPEZ	EXP REIMB: MEALS PER DIEM/MILEAGE/BRIDGE TOLL - UNC LEADERSI	\$818.94	\$818.94
163863	3/9/2017	20170228	NAPA AUTO PARTS	MONTHLY AUTO PARTS STMT - FEB 2017	\$810.53	\$810.53
163915	3/16/2017	8820	RED WING SHOE STORE	SAFETY SHOES - BULLIS/SEPULVEDA/LU/BARTON	\$809.71	\$809.71
163924	3/16/2017	29372	THOMAS AND ASSOCIATES	1 MODEL SSD-100-115-1 SUBMERSIBLE PUMP 2" W/50 FT CABLE	\$804.63	\$804.63
163897	3/16/2017	274358	CURTIS & TOMPKINS, LTD	4 LAB SAMPLE ANALYSIS	\$140.00	\$700.00
	3/16/2017	274205		27 LAB SAMPLE ANALYSIS	\$560.00	
163869	3/9/2017	1317429	ROCHESTER MIDLAND CORPORATION	HOT WATER LOOP SERVICE	\$687.46	\$687.46
163838	3/9/2017	20170303	DOUGLAS DATTAWALKER	EXP REIMB: CWEA CONF LODGING/PER DIEM	\$605.40	\$605.40
163891	3/16/2017	20170309	LAURIE BRENNER	TUITION REIMB- WINTER QTR 2017	\$600.00	\$600.00
163846	3/9/2017	1083870222	G&K SERVICES CO	UNIFORM LAUNDERING & RUGS	\$217.63	\$597.34
	3/9/2017	1083870224		ASTD DUST MOPS, WET MOPS & TERRY TOWELS	\$15.70	
	3/9/2017	1083870223		UNIFORM LAUNDERING SERVICE	\$364.01	
163856	3/9/2017	2427	KEN GRADY CO INC	1 MSA H2S ULTIMA X SENSOR	\$589.22	\$589.22
163880	3/9/2017	38102	WECO INDUSTRIES LLC	2 TRACTOR CAMERA PIGTAIL CABLES	\$530.82	\$530.82
163837	3/9/2017	20170228	CWEA	CONFERENCE REG: M. LEE	\$525.00	\$525.00
163888	3/16/2017	20170313	PAMELA ARENDS-KING	EXP REIMB: CMTA CONFERENCE REGISTRATION	\$505.00	\$505.00
163821	3/9/2017	8857	ARTISAN CONSTRUCTION	REFUND # 19718	\$500.00	\$500.00

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163840	3/9/2017	8885	DRAIN DOCTOR	REFUND # 19709	\$500.00	\$500.00
163854	3/9/2017	8881	WENYU HO	REFUND # 19708	\$500.00	\$500.00
163858	3/9/2017	8909	LIGHT AIR SPACE CONSTRUCTION	REFUND # 19715	\$500.00	\$500.00
163875	3/9/2017	8884	TRENCH FREE INC	REFUND # 19710	\$500.00	\$500.00
163894	3/16/2017	8906	ANNE CHENG	REFUND # 19730	\$500.00	\$500.00
163896	3/16/2017	8907	CP V WALNUT	REFUND # 19752	\$500.00	\$500.00
163923	3/16/2017	8899	STREAMLINE PLUMBING & DRAIN	REFUND # 19751	\$500.00	\$500.00
163873	3/9/2017	7589	SUPPORT PRODUCT SERVICES INC	EMISSION ANALYZER I902143 COCGEN	\$495.51	\$495.51
163900	3/16/2017	1083872943	G&K SERVICES CO	ASTD DUST MOPS, WET MOPS & TERRY TOWELS	\$15.70	\$481.57
	3/16/2017	1083872942		UNIFORM LAUNDERING SERVICE	\$234.24	
	3/16/2017	1083872941		UNIFORM LAUNDERING & RUGS	\$231.63	
163845	3/9/2017	20170303	MICHAEL FULKERSON	EXP REIMB: CWEA CONF LODGING/AIRFARE	\$455.44	\$455.44
163862	3/9/2017	16626776	MCMASTER SUPPLY INC	1 BELT TENSION GAUGE	\$26.93	\$447.95
	3/9/2017	17372582		ASTD PARTS & MATERIALS	\$381.33	
	3/9/2017	16626757		2 PACKS STAINLESS STEEL ROUND SHIM	\$39.69	
163934	3/16/2017	4511	ZELAYA DESIGNS	GRAPHIC DEVELOPMENT & COMPREHENSIVE LAYOUTS FOR UPCOMING	\$440.00	\$440.00
163857	3/9/2017	20170308	KATHLEEN KING	EXP REIMB: LODGING/MEAL/MILEAGE - NCCIPMA CONF/SNACKS FOR C	\$428.28	\$428.28
163852	3/9/2017	10316181	HACH COMPANY	ASTD LAB SUPPLIES	\$336.00	\$382.02
	3/9/2017	10316444		20 O-RINGS	\$46.02	

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163913	3/16/2017	116829	MUNICIPAL MAINT EQUIPMENT INC	12 CERAMIC INSERTS	\$359.08	\$359.08
163879	3/9/2017	8047619911	VWR INTERNATIONAL LLC	7 ASTD BUFFER PH SOLUTIONS	\$142.34	\$320.71
	3/9/2017	8047586043		2 RACK TEST TUB PC 24X25 30MM	\$136.75	
	3/9/2017	8047601470		2 BUFFER PH 4.01 32OZ	\$41.62	
163836	3/9/2017	274021	CURTIS & TOMPKINS, LTD	10 LAB SAMPLE ANALYSIS	\$320.00	\$320.00
163886	3/16/2017	5157651	ALL INDUSTRIAL ELECTRIC SUPPLY	ASTD TOOLS	\$174.32	\$293.81
	3/16/2017	5156527		FREIGHT FOR INVOICE 5156142	\$20.42	
	3/16/2017	5157942		ASTD PORTA BAND BLADES	\$99.07	
163903	3/16/2017	3K5645	HARRINGTON INDUSTRIAL PLASTICS	ASTD PARTS & MATERIALS	\$276.03	\$276.03
163882	3/9/2017	20170303	JASON YEATES	EXP REIMB: P3S CONF - 3 DAYS PER DIEM/BRIDGE TOLL/MILEAGE	\$260.88	\$260.88
163820	3/9/2017	14385043	APPLEONE EMPLOYMENT SVCS	TEMP LABOR-YOLLAND, L., WK END 2/11/17	\$259.68	\$259.68
163921	3/16/2017	20170228	SPOK INC	MARCH 2017 PAGER SERVICE	\$231.75	\$231.75
163872	3/9/2017	20170201	SPOK INC	FEBRUARY 2017 PAGER SERVICE	\$228.33	\$228.33
163899	3/16/2017	1000454216	ENVIRONMENTAL EXPRESS	GF 0.7UM FILTERS FOR METALS ANALYSIS	\$225.64	\$225.64
163849	3/9/2017	20170303	MARIAN GONZALEZ	EXP REIMB: P3S CONF - 3 DAYS PER DIEM/BRIDGE TOLL/HOUSKEEPIN	\$198.00	\$198.00
163833	3/9/2017	229213	CLARK'S HOME AND GARDEN INC	3 WALK-ON BARK YARD	\$197.55	\$197.55
163841	3/9/2017	20170307	MICHAEL DUNNING	EXP REIMB: PER DIEM FOR CWEA CONFERENCE	\$189.00	\$189.00
163847	3/9/2017	2775704506	GLACIER ICE COMPANY INC	126 7-LB BAGS OF ICE	\$178.92	\$178.92

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163825	3/9/2017	11759450	BLAISDELL'S	ASTD OFFICE SUPPLIES	\$35.93	\$158.78
	3/9/2017	11755290		ASTD OFFICE SUPPLIES	\$14.92	
	3/9/2017	11755291		ASTD OFFICE SUPPLIES	\$6.09	
	3/9/2017	11759451		ASTD OFFICE SUPPLIES	\$15.77	
	3/9/2017	11754090		ASTD OFFICE SUPPLIES	\$86.07	
163884	3/16/2017	8859	ABOVE ALL PLUMBING, INC.	REFUND # 19732	\$150.00	\$150.00
163855	3/9/2017	944720170224	HOME DEPOT CREDIT SERVICES	MONTHLY HARDWARE STMT - FEB 2017	\$140.99	\$140.99
163819	3/9/2017	5157392	ALL INDUSTRIAL ELECTRIC SUPPLY	ASTD PARTS & MATERIALS	\$125.39	\$125.39
163832	3/9/2017	54644806	CINTAS CORPORATION	1 JACKET - J. LEDESMA	\$116.50	\$116.50
163844	3/9/2017	153660	FREMONT RUBBER STAMP CO INC	2 SELF INKERS - NIGHT SHIFT/DAY SHIFT OPERATIONS	\$80.31	\$80.31
163853	3/9/2017	265431	HANIGAN COMPANY INC	BUSINESS CARDS - J. HWANG & A. DUPLER	\$78.57	\$78.57
163851	3/9/2017	111611	GREEN LEAF CLEANERS	CLEAN 9 JACKETS	\$72.00	\$72.00
163890	3/16/2017	11768160	BLAISDELL'S	1 PK LASER LABELS	\$5.73	\$63.41
	3/16/2017	11768180		ASTD OFFICE SUPPLIES	\$57.68	
163895	3/16/2017	7664	CONSTRUCTION ZONE LLC, THE	2 EV PARKING LOT SIGNS	\$60.36	\$60.36
163818	3/9/2017	4088644120170222	ALAMEDA COUNTY WATER DISTRICT	SERV TO: 02/22/16 - BOYCE ROAD	\$58.41	\$58.41
163905	3/16/2017	1045069	INDUSTRIAL SAFETY SUPPLY	10 DUST FILTERS	\$53.63	\$53.63
163867	3/9/2017	316403	RKI INSTRUMENTS INC	4 12-PK BATTERY	\$49.39	\$49.39
163901	3/16/2017	82756	GORILLA METALS	ASTD METAL, STEEL, STAINLESS & ALUMINUM	\$48.60	\$48.60

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Check No.	Date	Invoice No.	Vendor	Description	Invoice Amt	Check Amt
163871	3/9/2017	85340220170221	SAN FRANCISCO WATER DEPT	SERVICE 01/21/17 TO 02/21/17	\$41.15	\$41.15
163929	3/16/2017	9781192839	VERIZON WIRELESS	WIRELESS SERV 02/02/17-03/01/17	\$36.53	\$36.53
163861	3/9/2017	140619	MCIVORS HARDWARE	1 THERMOMETER	\$10.91	\$10.91
163830	3/9/2017	295181	CENTERVILLE LOCKSMITH	1 FREIGHTLINER KEY	\$4.92	\$4.92

**Invoices:**

Credit Memos :	1	-1,117.06
\$0 - \$1,000 :	123	36,170.90
\$1,000 - \$10,000 :	53	164,290.85
\$10,000 - \$100,000 :	12	270,187.03
Over \$100,000 :	0	
<b>Total:</b>	<b>189</b>	<b>469,531.72</b>

**Checks:**

\$0 - \$1,000 :	65	25,366.28
\$1,000 - \$10,000 :	40	130,781.47
\$10,000 - \$100,000 :	13	313,383.97
Over \$100,000 :		
<b>Total:</b>	<b>118</b>	<b>469,531.72</b>

## **San Mateo set to hike sewer rates: City looks to 36 percent increase to fund \$900M wastewater treatment overhaul**

*March 09, 2017, 05:00 AM By [Samantha Weigel](#) Daily Journal*

San Mateo residents may be expected to start paying up to 36 percent more to flush their toilets as the city seeks to make up for a drought-related lack of revenue needed to fund an overhaul of its wastewater treatment plant.

As many heeded calls to conserve during the statewide dry spell, it left the city in a precarious position because, in San Mateo, sewer rates are tied to water consumption.

Now several million dollars behind projected revenue, the city will consider increasing rates 36 percent for the coming fiscal year to help support its \$900 million Clean Water Program. The 10-year capital improvement plan includes an overhaul of its wastewater treatment plant and collection system in an effort to meet state mandates it cease allowing untreated sewage to seep into the San Francisco Bay.

“The program is necessary to replace aging infrastructure to ensure that we have reliable sanitary sewage collection and treatment, which is necessary for public health and quality of life,” said Clean Water Program manager Cathi Zammit.

To support these costly repairs, San Mateo is applying for a total \$750 million from a low-interest state revolving loan fund. Securing the state loans could help ratepayers and the city save \$250 million as compared to traditional higher-interest bonds or loans, Zammit said.

Since the loans are competitive, it would help for the city to demonstrate it can pay back the loan by having an ongoing revenue source. The increased sewage rates could provide that stability, she said.

Councilwoman Diane Papan noted the higher rates may be hard for customers to see on their bills, but saving money by attempting to secure the low-interest state loan will help reduce the ultimate costs to ratepayers.

“It’s sort of a necessary evil at this point. We’ve got to replace this aging infrastructure and ... with the state revolving loan fund, we’re trying to do it in a way that reduces the burden as much as possible,” Papan said.

The initial goal was to phase in rate increases more slowly over time. Over the last two years customers saw a 10 percent and 12 percent uptick. However, the weather and statewide calls for

conservation put a damper on the city's plans with revenue now about \$6 million to \$7 million below projections, Zammit said.

“Because our rates are charged based on water usage, and with the conservation efforts that reduction in water use has then offset the rate increase. So even though people's rates were higher, because they were using less water, they didn't pay any more than they did the previous year. And in some cases, they paid less,” she said.

Starting in July, rates were initially expected to increase just 12 percent, but the city is now looking to make up for the revenue drought with an average 36 percent increase. In subsequent years, residents would then return to seeing slower increases likely of around 8 percent to 12 percent, Zammit said.

“This year we're basically proposing to catch up and bring our revenue to the level they need to be in order to apply and qualify for the low-interest rate loans that [could] save the city hundreds of millions of dollars over the course of the whole program,” Zammit said.

On Monday, the City Council unanimously voted to have staff apply for a \$350 million revolving loan that would go toward collection system improvements such as pipes, pump stations and the planned underground temporary storage basin. The city has already applied for a \$400 million state loan to support improvements at the wastewater treatment plant on Detroit Drive; a facility that not only services 90,000 San Mateo residents, but thousands in Foster City, Hillsborough and customers in the Crystal Springs Sanitation District.

It will likely take some time for the applications to be reviewed before the state makes a decision on whether to provide the low-interest loan to San Mateo's project. In the meantime, the city hopes to get its sewer finances in order, Zammit said.

The 36 percent rate increase would generate about \$40 million in the coming fiscal year, which would help make up for the nearly 24 percent deficit from this year's target revenue. Construction is expected to ramp up during 2018-2021 and by 2025, San Mateo is looking to have rates equate to about \$70 million in revenue a year, according to the city.

With lessons learned from the drought, the city may also look to move toward a less volatile hybrid model whereby rates are not tied solely to water consumption. Instead, they would look to impose a flat surcharge combined with an adjusted percentage tied to water consumption, Zammit said. They city may also consider approving multi-year instead of single-year rate increases, which would provide more certainty to both customers as well as the city, she said.

Two study sessions have been held with the council this year and other public meetings will be held before officials decide whether to approve the rate increase that customers would start seeing on their bills in July, Zammit said.

Reminding customers that something as simple as the flush of a toilet is a necessity the city must improve, Papan noted “we're all going to have to share the burden to replace this aging infrastructure.”

Visit [cleanwaterprogramsanmateo.org](http://cleanwaterprogramsanmateo.org) for more information.

[samantha@smdailyjournal.com](mailto:samantha@smdailyjournal.com)



# SCIENTISTS HARNESS SUNLIGHT TO BREAK DOWN WASTEWATER IN 20 MINUTES

*March 14, 2017*

CANBERRA, Australia - Chemists in Australia claim to have found an alternative to ultraviolet (UV) light disinfection technologies which they claim is 15 times more efficient.

The research group from Australian National University (ANU) have developed a system that uses modified titanium dioxide as a photocatalyst that works with sunlight.

Research group leader Professor Yun Liu said the photocatalyst can completely decompose organic pollutants in [wastewater](#) in 20 minutes.

The team added nitrogen and niobium ions in pairs into the titanium dioxide to improve its performance as a photocatalyst.

ANU conducted the research in collaboration with the Chinese Academy of Sciences, the University of New South Wales, Western Sydney University, and the Australian Nuclear Science and Technology Organisation.

The university has filed a provisional patent covering the discovery, which involved the design strategy, chemical composition and manufacturing approach.

ANU said the new technology could be “useful for treating water for human consumption and has potential applications in making self-cleaning building materials, including glass, and splitting water to make hydrogen fuel”.

Professor Yun Liu said: "With innovative chemistry design, we can use our photocatalyst to purify water with natural sunlight instead of UV light and dramatically reduce costs for operators...our photocatalyst, compared with the leading commercialised products which take one hour to decompose only 26 percent of the same pollutants."

The research is published in [Advanced Materials](#).